Physiotherapy for Torture Survivors

– a Basic Introduction

Published in co-operation between

International Rehabilitation Council for Torture Victims (IRCT)
Association of Danish Physiotherapists (DF)
World Confederation for Physical Therapy (WCPT)

Edited by

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International Rehabilitation Council for Torture Victims (IRCT)
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RCT

The Rehabilitation and Research Centre for Torture Victims is an independent, humanitarian, non-political organization established in 1982 to help victims of torture and to contribute to the prevention of torture. Its main objectives are to rehabilitate persons who have been subjected to torture, to rehabilitate their families, to instruct Danish health professionals in the examination and treatment of persons who have been subjected to torture, and to carry on research into the nature, the extent and the consequences of torture.

IRCT

The International Rehabilitation Council for Torture Victims is a private non-profit foundation, created in 1985 by the RCT. The objectives of the foundation are, on an international basis, to support research into all aspects of torture, to support education and training of health professionals and of other relevant personnel in the medical, social, legal and ethical aspects of torture, and to serve as an international clearing house for information about torture activities.

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Preface

By A. J. Fernando, President of WCPT

The contents of this booklet represents the educational value of a vital and challenging topic. That there is an urgent need for this knowledge to be an integral part of the education of all Physiotherapists is obvious.

This record of proceedings further illustrates the value of and the necessity for enthusiastic collaboration on the part of international organizations, and the intrinsic worth of partnerships.

On behalf of the World Confederation for Physical Therapy, I wish to acknowledge and thank the Director and Staff of IRCT, the Association of Danish Physiotherapist and my International colleagues who through their participation, made the event possible.

Preface

By José Ayala Lasso, UN High Commissioner for Human Rights

Torture is one of the most appalling violations of human rights. It is strictly condemned by international law and, in particular, by the Universal Declaration of Human Rights, and the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment. The Vienna Declaration and Programme of Action, adopted at the World Conference on Human Rights in 1993, emphasized that the act of torture is one of the most atrocious violations against human dignity, the result of which destroys the dignity and impairs the capability of victims to continue their lives and their activities. It also reaffirmed that freedom from torture is a right which must be protected under all circumstances, including in times of internal or international disturbance or armed conflicts.

Over the years, the United Nations has sought in many ways to ensure adequate protection for all against torture. Unfortunately, torture is still practised around the world and men, women and even children are suffering treatment that is unworthy of our civilized world. The impunity enjoyed by perpetrators of torture all too often merely adds to the moral suffering of the victims and encourages a continuation of torture.

During my visit to Denmark in June 1994, I launched an appeal to States, organizations and individuals concerned for a definitive end to, and the total eradication of, the practice of torture. On that occasion, I paid tribute to all those who are working selflessly throughout the world to relieve the suffering of torture victims and bring them help and assistance. I believe that the work of physicians, physiotherapists and other health workers assisting torture victims is of crucial importance, not only to alleviate the physical and psychological suffering of those victims, but also to denounce with the support of their scientific knowledge and competence the cruelty and perversity of methods of torture often too sophisticated to be immediately detected without medical expertise.

I am covinced that one of the first steps to be taken to deal effectively with the scourge of torture is to break the silence often sorrounding it.

Therapists who have received specialized training on the *sequelae* of torture are the first in a position to indicate the horror and gravity of this criminal act to all concerned.

The importance of providing rehabilitation assistance to torture victims is widely recognized in international human rights instruments and the United Nations has established the United Nations Voluntary Fund for Victims of Torture to support rehabilitation projects throughout the world. Education and training in the techniques of dealing with torture survivors for medical professionals is a crucial element in responding to the needs of victims and their family members and as a bases for continuing opposition to the practice of torture. The results of the International Training Seminar for Physiotherapy Teachers on Ethics and Torture contained in the present publication will make an important contribution to that objective. The World Confederation for Physical Therapy, the Association of Danish Physiotherapists and the International Rehabilitation Council for Torture Victims are to be congratulated on their initiative in publishing the seminar papers.

I am sure that the present publication will prove most helpful to the courageous and dedicated people throughout the world who assist torture victims and members of their families.

Ending torture is the beginning of true respect for the most basic of all human rights: the intrinsic dignity and value of each individual.

Introduction by the Editors

This book is aimed at physiotherapy students, physiotherapy teachers, physiotherapists in practice and other health professionals.

The topic of this book is recommended to be implemented in the curriculum in the physiotherapy education as a specific issue, but also in relation to different subjects such as: Soft tissue treatment, pain module, psychology, sociology, acute and chronical traumatology, electro-therapy, etc.

The book is based on experiences from the physiotherapists and the multidisciplinary team work at the Rehabilitation Centre for Torture Victims.

It contains a collection of articles based on presentations given at international seminars for health professionals in Denmark and abroad.

Copenhagen, May 1995

Karen Prip
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Nina Holten
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Torture in the World

By Lone Tived

As there are many different kinds of violence and abuse against human beings, it has been necessary to define torture.

Definition of torture

At the World Medical Association in Tokyo 1975 a declaration was adopted which prohibits doctors from participation in torture. In that declaration torture is defined as follows:

> ... the deliberate, systematic or wanton infliction of physical or mental suffering by one or more persons acting alone or on the orders of any authority, to force another person to yield information, to make a confession or for any other reason.

The nurses passed a similar declaration in Seoul in 1989.

The congress for the World Confederation for Physical Therapy, London 1991, passed a declaration which prohibits physiotherapists from participating or even witnessing torture – and also encourages teaching about torture and its sequelae, and the treatment of torture survivors.

Epidemiology

The United Nations Convention against torture has been signed by only a minority of the world's 183 countries. According to Amnesty International's reports, torture still takes place in 79 countries, some of which have signed the Convention.

There is therefore much to be done in order to stop torture.

It is estimated that about 40% of the refugees who come to Western Europe have been exposed to torture. But often the tortured persons do not tell anybody about it, because they are ashamed of the fact that they have been tortured – and because the torturers always tell them that it is their own fault – and that no one will believe them if they reveal their experiences.

The purpose of torture

Torture was previously considered as a method of obtaining information or as punishment, but we now know that its main purpose is to destroy a person's identity. The victims are often active in politics, e.g. journalists and writers, but they include persons with unacceptable religious beliefs. They are at risk of being tortured and later sent back into the society as totally different persons – in order to spread fear and terror. Thus, torture is an effective weapon against democratic principles.

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Physical Torture Methods and their Sequelae

By Karen Prip

It is often mentioned that psychological mechanisms are the major matter in post-torture symptoms. However, only a minority of the survivors perceive their problem as mainly or entirely of a psychological nature. The majority experience and explain their situation as a somatic disease. It is important to listen to and understand the physical complaints and pain pattern, irrespective of any organic basis. This can be an important access for initial treatment.

The torture survivor is entitled to have his situation taken seriously, and physical complaints which are listened to and which result in a formal physical examination may be one of the entrances to understanding and setting a functional diagnosis. It may also be the gateway to mutual confidence.

Complaints and objective findings

In 1989, Marianne Juhler examined 50 torture survivors who were referred to the Rehabilitation Centre for Torture Victims (RCT) in Copenhagen, and from this study it can be seen that the majority of complaints are related to the musculo-skeletal system. Table I shows that 92% of the examined persons had complaints and findings in the musculo-skeletal system.

Of the 92%, the major part of the torture survivors complain of pain in the joints (46%), in the back (46%), and in the muscles (28%). The objective findings showed that 58% had pain in their muscles.

Next after the musculo-skeletal symptoms, 86% of the torture survivors had neurological complaints (Table II), such as headache (62%), sensory changes (36%), visual disturbances (34%), dizziness (28%), etc.

There were objective findings, however, in only 22%. When there is actual physical pain, whether traceable to torture or not, the torture survivor has a right to a thorough examination by the physiotherapist, re-

Table I. *Musculo-skeletal complaints and findings.*

Complaints		Findings	
Total	92%	Total	92%
Joint pain	46%	Myoses	58%
Back pain	46%	Scoliosis	14%
Muscle pain	28%	Fracture/luxation sequels	14%
Pain on ambulation	10%	Spinal tenderness	8%
Diffuse pains	10%	Arthrosis	4%
		Tendon rupture	2%
		Amputation	2%

lating subjective complaints to objective findings and being treated accordingly.

It may be dangerous to assign all the symptoms to psychological and social sequelae of torture without a closer look to determine whether this is actually the case. As with all other patients, "psychosomatic disease" is a diagnosis of exclusion. It is important for the physiotherapist to know the exact torture history and methods of torture applied in each individual case, because they draw attention to damaged parts of the body and to potential tissue damage.

Pain, scars, deformities, and malfunctioning of the body will be a continuous reminder of the torture, and, being sometimes present for life, they have the effect of continuing the torture long after their detention.

Table II. *Neurological complaints and findings.*

Complaints		Findings	
Total	86%	Total	22%
Headache	62%	Hearing loss	12%
Sensory changes	36%	Paresis	6%
Visual disturbances	34%	Sensory changes	4%
Dizziness	28%	Gait disturbance	2%
Hearing loss	16%	Decreased vision	2%
Tinnitus	14%	Hemiparesis	2%
Paresis	10%	Brain contusion (CT)	2%

Less than 10%: Ear pain, phono-/photophobia, anosmia, tremor, double vision, eye pain, tics, decreased vision, squint.

All societies and countries have an ancient history of justified punishment by law. Today maltreatment is considered differently in various parts of the world. What in Denmark is considered as torture may be regarded as normal procedure and justified punishment in other countries. Therefore, Danish physiotherapists cannot expect a person to account for all maltreatments to which he has been exposed even if they have caused physical sequelae of importance for his later complaints.

Thus it is not always sufficient to base the physical examination on the history from the victims about the torture when seeing them the first few times. It must be born in mind that unconsciously they may also suppress their memories or feel so much shame and guilt that they do not want to talk about them.

Often the physiotherapists in the countries where the torture survivors live and have obtained asylum only see the late sequelae of torture, which are characterized by mainly coming from the musculo-skeletal system.

Careful medical examination rarely shows signs of involvement of vital organs, despite numerous subjective complaints.

A possible explanation for the many symptoms will now be discussed, based on medical specialities, such as anatomy, traumatology, orthopaedic manual medicine, neurophysiology, sports medicine, rheumatology, and forensic medicine.

Physical torture methods

Grethe Skylv has made a description of different kinds of torture methods and their sequelae. Some of these will be presented below.

Violent blows (Fig. 1)

All torture survivors have experienced physical violence to most of their body (from kicks, fists, rifles, sticks, iron rods and whips of different nature, etc.), or they have been brutally pushed and have fallen from different heights.

The tissue damage and structural and functional sequelae associated with the signs and symptoms are the same as after assaults, accidents, and sports injuries.

Examples of injuries are healed fractures with or without deformities, nerve and vessel injuries, fibrosis in muscles, fasciae, and connective tissue, injuries of joints, joint capsules, tendons, and ligaments, distortions and scars.

The physiotherapist's examination and treatment follow exactly the

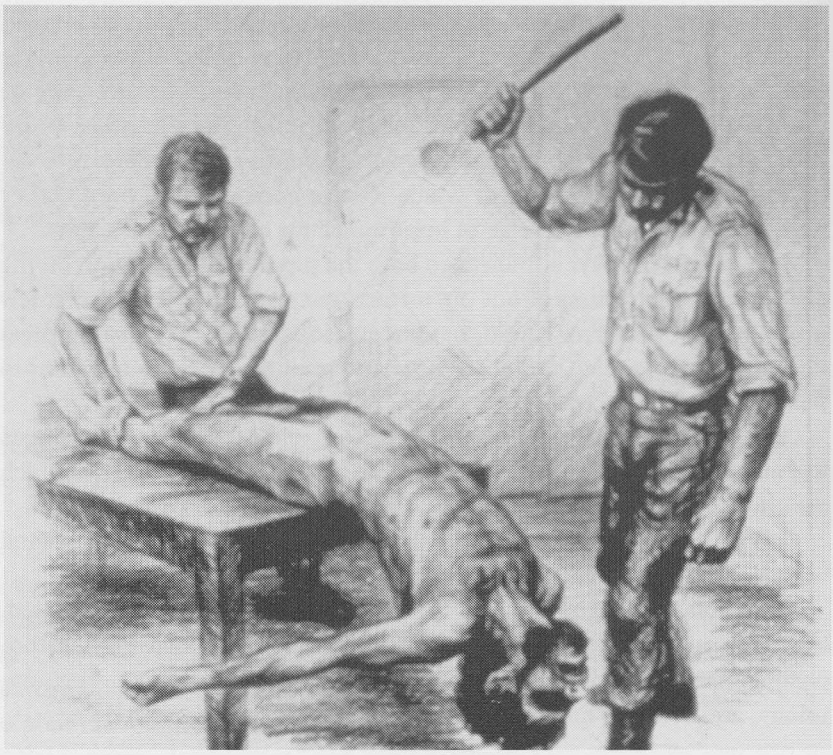

Fig. 1. *Violent blows – "The operating table". Drawing by Mogens Nørgård.*

same procedure and principles as for a "normal" patient who has had an accident.

Suspension (Fig. 2)

Suspension is a common form of torture, either alone or combined with other forms, such as beating or electrical torture.

The victim is usually suspended by the wrists and the arms above his head – or by the arms tied behind his back. Other variations are suspension by one arm and one leg, by both legs, by the arms tied together around the bent knees so that a stick can be pushed between the hollow of the knees and the elbows (la barra = the chicken = the wheel of Buddha), or by the hands tied together with one arm above the head, the other behind the back (Palestinian suspension).

The lesions that occur in the tissues depend on which structures have

been subjected to the most violent loads and how long the suspension has lasted.

The symptoms are compatible with a mild degree of reflex dystrophia and resemble the neurological symptoms and complex of symptoms due to functional disturbances in the vegetative, autonomic (sympathetic and parasympathetic) nervous system.

The symptoms include burning and cutting pains diffusely in one or more extremities without segmentary distribution, a sensation of tiredness and heaviness, hyperaesthesia, especially distally in the extremities, and sometimes also vasomotor and sudomotor changes.

It is rarely possible to demonstrate hypermobility in the exposed joints, except perhaps in the acromio-clavicular and sterno-clavicular joints after suspension by the arms.

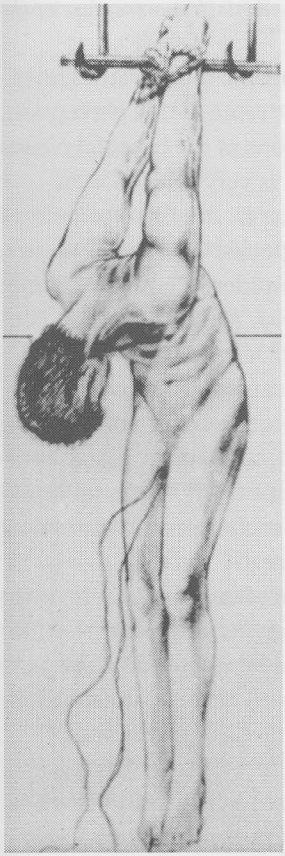

Fig. 2. *Suspension combined with electrical torture. Drawing from the Turkish weekly "Nokta", February 1986.*

Furthermore, suspension by the tied wrists, so that one arm is over the head, the other behind the back, results in straining the upper and middle costo-vertebral and costo-transverse joints, often causing chest pain and dysfunction of the thoracic cage. The torture survivor often interprets his chest pain as a cardiac disorder.

Tendinitis near the joints is common, particularly near the shoulders.

A tendency to luxation of the shoulder after suspension is rarely seen – neither after the arms have been tied above the head, nor when they have been tied behind the back.

An explanation may be that the shoulder joint is in a close pack position when the arms are raised above the head. But the shoulder joint is quite vulnerable when the arms are tied behind the back and suspended because the anterior part of the capsule is very weak.

Nevertheless, the victims often *perceive their joints as being loose - probably because of lack of sensory input from the afferent mechanoreceptors of the joint capsules and ligaments.*

Proprioceptive stimulation, combined with specific muscle strengthening and stabilization of the joints, may reduce or remove this perception.

Following suspension by the arms, partial lesions of the brachial plexus with corresponding objective neurological signs is very seldom seen.

In contrast, subjective symptoms are common in the form of pain or paraesthesiae corresponding to the course of specific peripheral nerves, with aggravation following movement of the shoulder, elbow, and hand, or by special provocation tests in accordance with Adverse Neural Tension described by David Butler.

The hypothesis is that the symptoms may be caused by fibrosis following bleeding or lack of blood supply in the connective tissue surrounding the nerves during violent stretching. This tight connective tissue compromises the ability of the nerve structure to adapt freely to the pulls and pressures of normal movements of the body. In such cases physiotherapy is directed to the changes in the connective tissue.

Following suspension, active tender points are often found in the musculature of the shoulder and pectoral region, giving characteristic patterns of referred pain, which to some extent can simulate radicular pain and paraesthesiae. These symptoms respond well to physiotherapy directed to the muscles and tender points.

Strapping (Fig. 3)

As a form of torture in itself, or as part of another form, the victim is

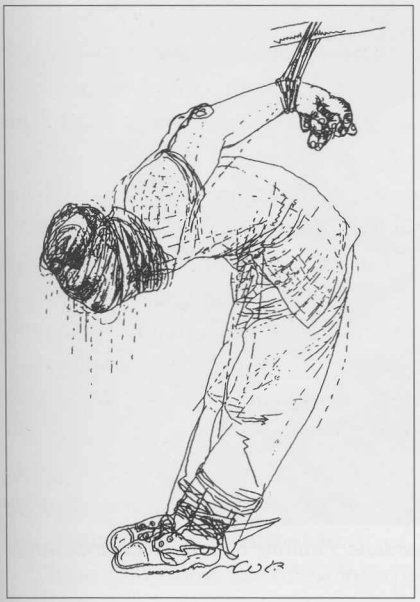

Fig. 3. *Strapping. Drawing by Dudu Gerstein.*

fixated with ropes, straps, handcuffs, etc., round his body, neck or extremities. Tight strapping may leave pressure injuries in the underlying tissues.

The sequelae may be regular nerve injuries with loss of sensory and motor function, but it is usually a question of subjective complaints of pain and paraesthesiae in the whole area peripheral to the strapping, without corresponding objective neurological impairment. Clinical examination shows that the structures under the skin in the affected area (muscles, tendons, fasciae, vessels, and nerve sheaths) do not slide freely in relation to each other, but are tethered together by irregular bundles of connective tissue. These can be treated by various soft tissue techniques to re-establish the normal sliding of the tissues and thus reduce the subjective symptoms.

Electrical torture (Fig. 4)

Electrical torture can be performed with electrodes placed at different, usually very sensitive, areas of the body, with a mobile electrode, such as a shock baton, and a fixed electrode, such as an iron bed.

Characteristic skin changes following electrical torture have often been

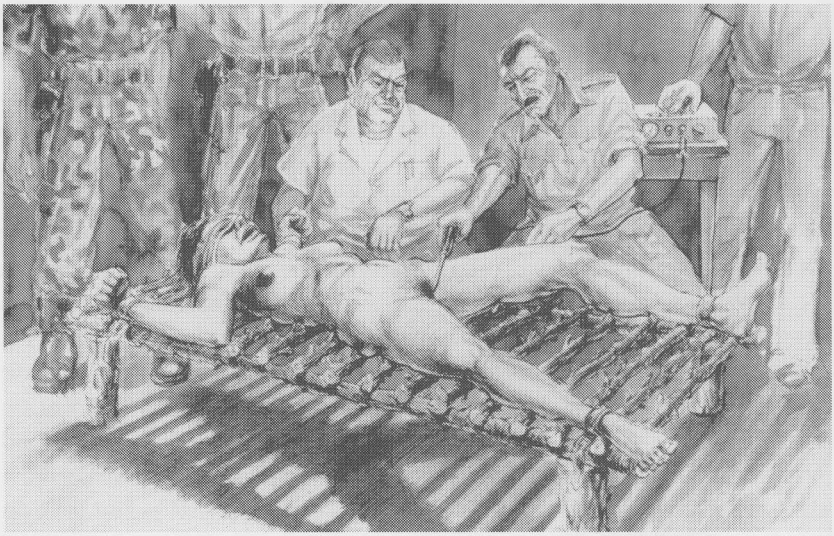

Fig. 4. *Electrical torture – "Picana" – on genitals. Painting by Latin American artist.*

described. There are no studies of possible changes in other tissues, but myoglobin is liberated in blood and urine immediately after electrical accidents as a sign of damage to the muscle fibres. It is known from the descriptions of the victims that electric torture results in violent muscular contractions, which may result in lesions of the muscle fibres, especially when the victim is suspended. On palpation, muscle consistency is changed in large areas because of firm, fibrous connective tissue bundles, as a result of a previous muscular lesion. The changes are the same as those seen after direct blunt trauma, and the principles of the physiotherapy treatment are the same – muscle and fascia technique followed by training.

Forced positions (Fig. 5)

Several different forms of torture are directed towards the back, which can be strained in many ways. The victim may be exposed to kicks, blows, and punches to the whole back or to special parts of the spine, possibly while fixated or suspended. He may be forced to carry heavy weights for hours, or to stand, sit, or lie for a long time in abnormal, awkward positions without being able to move or change position. He may be kept in a cell so small that he is not able to stretch his body

completely. These forced positions almost always result in the spine being bent forwards or backwards.

It might be expected that such abnormal strained positions, often with additional blows to the kyphosed or hyperextended back, provokes disc prolapse, but that is rarely seen. Instead, this maltreatment causes overstretching of the stabilizing ligaments and joint capsules of the spine, giving segmentary instability and other segmentary dysfunctions. These lead not only to back pain, but may also give a sensation of pain responding to the dermatome, myotome, or sclerotome of the strained segment(s) (Fig. 6), as well as affecting the vessels and viscera belonging to the corresponding segment.

The visceral symptoms, caused by the irritation of afferent sympathetic nerve endings going from the sympathetic trunk via the dorsal root ganglion to the dorsal root (Fig. 7), may simulate cardiac disease, gastrointestinal, genital or other conditions, depending on which spinal segment the dysfunction is localized to.

These symptoms are often interpreted wrongly by the torture survivor – and by many therapists – as injury to specific organs, and in this way they can lead to extensive medical and surgical examination procedures. When these reveal normal function of the organ(s) in question, the survi-

Fig. 5. *Forced positions – "The banana tie". Drawing by Dudu Gerstein.*

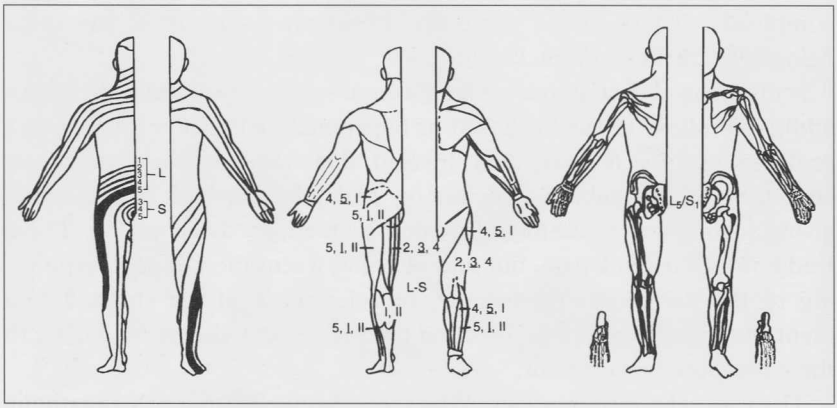

Fig. 6. *Dermatome, myotome and sclerotome.*

vor feels a discrepancy between his subjective perception of the symptoms and the interpretation of the therapists. He is easily labelled neurotic, the organic complaints being considered a part of the mental state following torture.

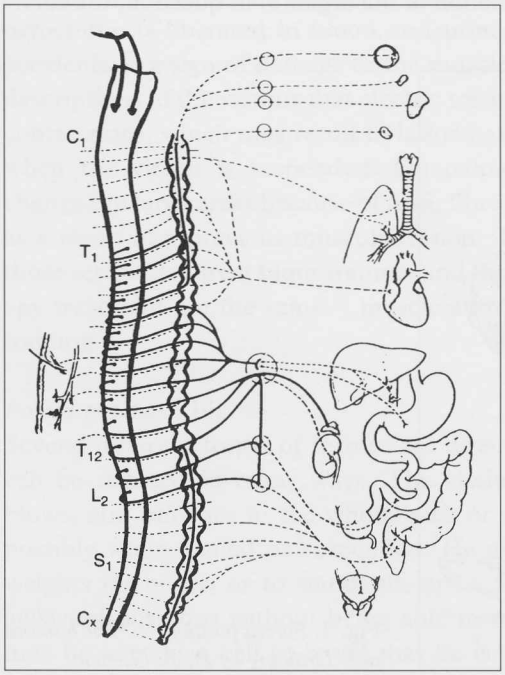

Fig. 7. *The spine and the sympathetic trunk.*

Sexual torture (Fig. 8)

All forms of torture include an overtone of sexual humiliation, but physical sexual torture comprises direct maltreatment of the genital and the anal region in form of homo- or heterosexual rape, electrical torture, or maltreatment with various tools or animals.

The sequelae of sexual torture may also leave traces in the musculoskeletal system, as both structural injury and functional disturbances. Shame and guilt together with loss of dignity and self-esteem are reasons why sexually tortured victims rarely reveal the assaults they have been subjected to. The symptoms are often uncharacteristic low back pain, sometimes radiating to the pelvis or gluteal region and the inquinal area. Some have difficulty in standing or sitting for long periods. There is pain in the external and the internal genitalia, menstrual disturbances, urination and defecation problems, and above all sexual problems.

The physical sequelae are dysfunction of pelvic joints, which comprise the sacroiliac and sacro-coccygeal joints, and the symphysis pubis.

Dysfunctions of these joints are discovered by the examination of posture and registration of extent and direction of movement, together with special functional tests of these joints.

There is a pronounced muscular disharmony around the pelvic region, corresponding to that of the *depressed posture* pattern (Fig. 9): shortening

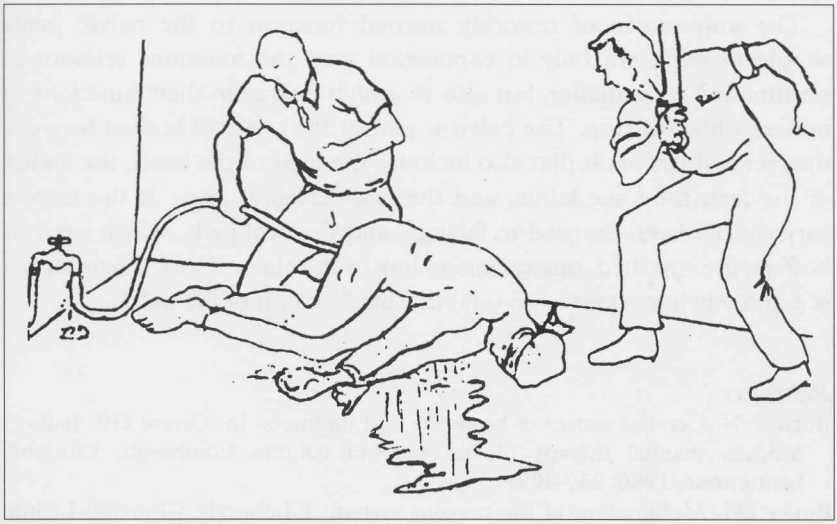

Fig. 8. *Sexual torture with water hose. Drawing by Chilean ex-detainee.*

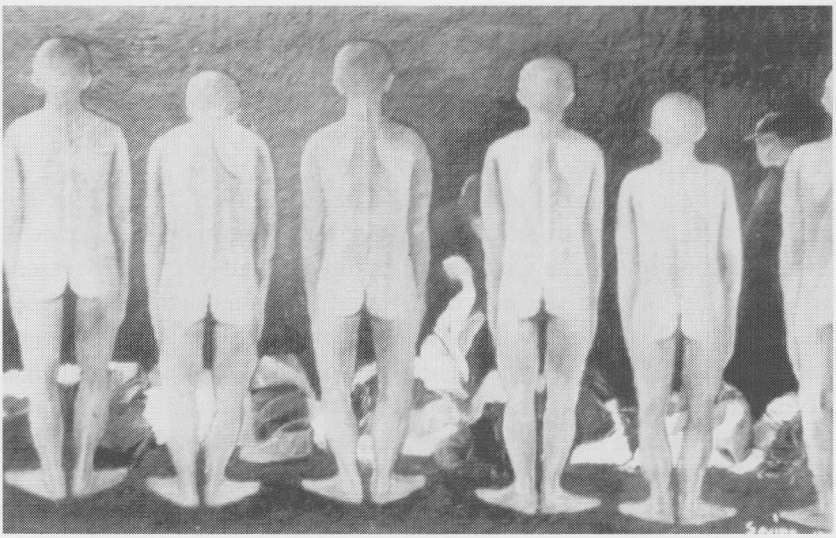

Fig. 9. *Depressed posture. Painting by the Kurdish artist Arif Servinç.*

and tightness of the psoas major, the thoracolumbar spinal muscles, the piriformis and hamstrings, all in combination with a weak abdominal wall and gluteal muscles (the pelvic cross syndrome). The torture victim reveals almost no active movement of the pelvic region in relation to the spine.

The importance of restoring normal function to the pelvic joints should be seen not only in connection with the functions relevant to posture and to sexuality, but also to a high degree in their functions as buffers while walking. The pelvis is part of the series of buffers between the feet and the brain that also includes the balls of the heels, the arches of the feet, the knee joints, and the intervertebral discs. If the torture survivor has been exposed to falanga, and the heel pads, which serve as buffers, are smashed, one springing link in the chain is lost. Therefore, it is extremely important to re-establish the function of the pelvis.

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The Interdisciplinary Model at RCT

By Lone Tived

The treatment model described here is based on our work with torture survivors living in exile in Denmark. This model is not applicable as such in other centres all over the world because of shortage of economical and professional resources but has to be adjusted to the needs and actual resources of the country in question.

Treatment offered at the Rehabilitation Centre, Copenhagen

Most of RCT's clients come from the Middle East. Most are men, 25-40 years old. Only about 20% are women.

Torture survivors can only be accepted for treatment when they have obtained asylum; without it there would be the risk that a client would suddenly have to leave Denmark.

Interpreters

We use interpreters at RCT for most of the clients because we must try to avoid language misunderstandings.

Length of treatment

The clients are treated for about 6-9 months, sometimes a little longer. About 100 clients are treated per year.

The torture survivor can be referred to RCT from The Danish Refugee Council, general practitioners, the social services, the Red Cross, hospitals, and the office of the United Nations High Commissioner for Refugees. He can also contact RCT himself. His name will then be put on RCT's waiting list.

Preliminary examination by a psychiatrist

This lasts $1^1/_2$ h. The torture survivor is encouraged to talk about his family upbringing, education, and previous work, the conditions of his

arrest and imprisonment, the kind of torture he was exposed to, his present psychological symptoms, and his social situation.

He will then be explained about the kind of treatment he can expect if he is accepted as a client at RCT. He will also be informed that RCT never gives a third party any information about a client without his permission, and that all the files are kept in safety boxes.

Visitation meeting

Some of the psychiatrists, together with a social counsellor, will then discuss his case and consider whether the torture survivor

1. might profit from the whole "Treatment Package" at RCT
2. can be referred to the external network (where he would be offered psychotherapy or physiotherapy, adapted to torture survivors)
3. is not accepted by RCT.

Family assessment interview

When a torture survivor is accepted at RCT, he will be invited to bring his wife and children, because the family of a torture survivor also suffers. His children will be offered physical examination and treatment by a paediatrician, and the family will be offered psychotherapy.

Standard physical examination

Nursing

The nurse is in charge of the standard physical examination programme, and she will introduce the client to the centre and present him to the personnel.

The nurse will take standard blood tests, urine tests and electrocardiogram (if the client after careful explanation can accept this – he may have undergone electric torture) etc., and she will accompany him to examinations outside RCT. If examinations (and treatment) require general anaesthesia, the nurse will stay with him until he comes round and will explain to him what he has been through.

The physical examination

The doctor will focus on the symptoms related to the torture.

The central nervous system will be examined carefully, because most of our clients suffer from headache.

The locomotor system will be examined in general. The rheumatologist will examine for more specific physical sequelae of torture.

Heart disease is very rare, though many clients think there is something wrong with their heart.

The kidneys, liver and sexual organs may be injured by beating.

The gastrointestinal system often gives symptoms because of poor nutrition, too much coffee, too many cigarettes.

The ears and nose are routinely examined by a specialist. They are often injured during torture.

When general anaesthesia is required, the client is referred to the University Hospital, where the health professionals have special training in treating torture survivors.

The medical doctor at RCT is the link between the client and his general practitioner.

Dentist

As many torture survivors suffer from temporo-mandibular problems after having had teeth extracted during torture and are afraid to consult a dentist, RCT offers examination and treatment by a dentist specialised in treating torture survivors.

Rheumatologist

The rheumatologist examines the client at the start and end of treatment, and together with the physiotherapist prescribes aiding devices for the client.

Treatment

Nursing

The nurse administers the client's medicine. The attitude at RCT with respect to physical and psychiatric problems is to limit the use of medicine as much as possible. However, certain situations may call for medication, and the nurse's role is to explain the effects, side-effects and dosage of medicine to the client, and furthermore, to make notes of the effects.

The nurse communicates test results. She also gives health guidance concerning nutrition, sleep, etc.

Psychotherapy

Psychotherapy is given once a week. The client is encouraged to re-tell

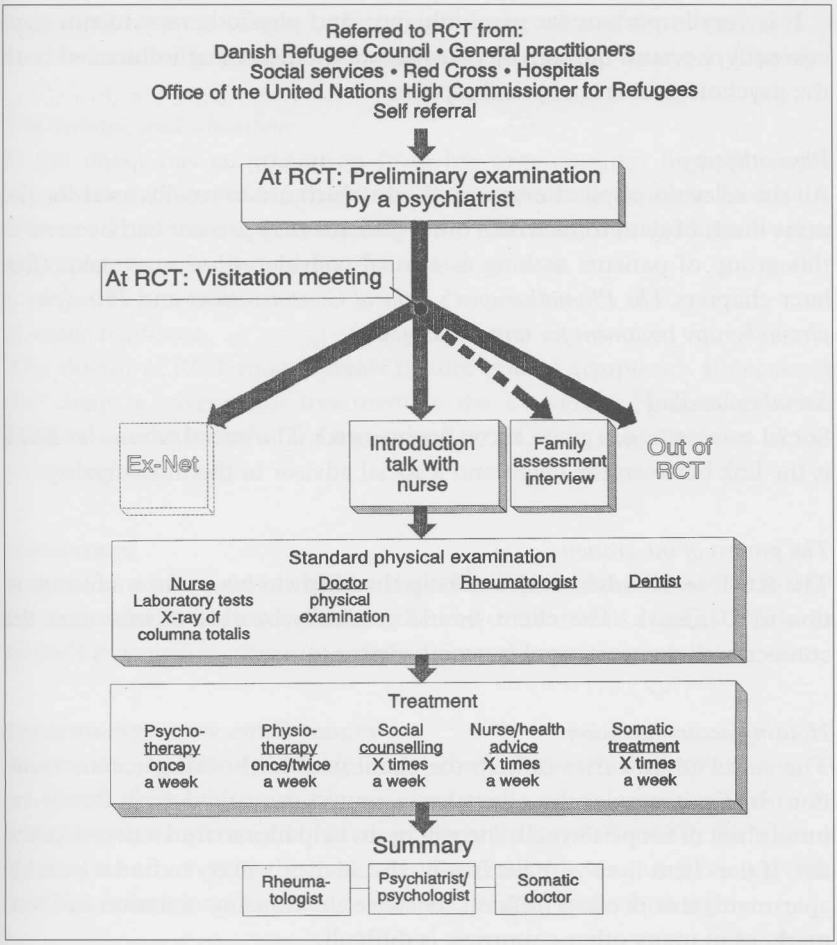

Fig. 1. *The client's way through the system.*

the torture experiences in order to come into contact with some of the feelings he had to repress during torture – especially anger and fear. This repression of feelings causes feelings of powerlessness, guilt, shame, and fear, which are dominant in all torture survivors at the start of treatment.

The memories of torture cannot be removed, and there will always be situations which bring the torture to mind. However, when survivors can master their anxiety and become free from flashbacks in those situations, they can handle human contacts and working situations well enough to enter this society in a normal way.

It is very important for psychotherapy and physiotherapy to run concurrently, because the torture consisted of methods that influenced both the psychological and physical aspects.

Physiotherapy
All the relevant physiotherapy methods which are normally used for the same kinds of symptoms which other patients may present can be used to this group of patients as long as special considerations are taken. (See later chapters *The Physiotherapist's Ethical Considerations* and *Principles of physiotherapy treatment for torture survivors*).

Social counselling
Social counselling is given according to need. The social advisor at RCT is the link between the client and a social advisor in the municipality.

The process of integration
The RCT social advisor tries to help the client in his process of integration in Denmark. The client should gradually be able to take over the contact with the municipality social advisor.

Housing/accommodation
The social advisor tries to help the client with his housing/accommodation. If, for example, the client has a rented room and feels that it reminds him of his prison cell, she will try to help him to find a two-roomed flat. If the client lives with his family, the advisor will try to find a suitable apartment; this is often difficult, because the housing situation in Denmark, as in many other countries, is difficult.

Family reunification
If the client's wife and children are still in his home country, the social advisor will try to contact the authorities in order to reunite the family.

If the client has small children, the social advisor will help to enrol them in nursery, kindergarten or school. This will help the children's integration in the Danish society and give the parents time to participate in Danish language courses, treatment at RCT, etc.

Courses in Danish
When the client is going to learn Danish it is sometimes necessary to give

individual lessons, at least in the beginning, because of the client's lack of concentration. He might later be able to join a group course in Danish.

Job training and education
If the client has an education from his own country, he might need supplementary qualification or training in order to get a job in Denmark. The social advisor will try to help him with this, but the high level of unemployment in Denmark will not make it easy.

Somatic treatment
The doctor at RCT mainly treats torture-related symptoms. If necessary the client is referred for treatment to the University Hospital or other medical specialists who are supervised by RCT in the treatment of torture survivors.

Summary
A summary of treatment by the rheumatologist, psychiatrist/psychologist, and somatic doctor is made at the end of treatment at RCT. With the client's permission, this is sent to his general practitioner.

Interdisciplinary conferences
There are weekly interdisciplinary conferences during treatment, at which all the health professionals discuss the progress of the clients. In addition, there are special meetings every 2nd or 3rd month (or more if needed) at which only the health professionals working with one particular client participate in order to discuss his case more thoroughly.

Trying to avoid burned-out symptoms
Only half the working time is used for treating the clients –because of the risk of becoming "burned out". The rest of the time is used for conferences and for teaching health professionals in Denmark and abroad about torture and its sequelae, and the treatment of torture survivors.

Reference
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Pain Physiological Mechanisms Used in Physiotherapy

By Inger Skjærbæk

In his introduction to the Textbook of Pain, Patrick Wall writes:

> "So long as one person remains in pain and we cannot help, our knowledge of pain remains inadequate",

which is very true. No doubt there is still a lot we do not know about pain.

Definition of pain

When in 1979 the Association for the Study of Pain defined pain as:

> "An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described by the patient in terms of such damage",

they emphasized the subjectivity and the emotional feeling behind pain, and at the same time they recognized the existence of pain even in the absence of a detectable physical cause.

It is therefore important for us who treat patients in pain to realize and accept that pain, the intensity of pain, and the effect of our treatment can be perceived only by the patients themselves.

Pain physiology

The perception of pain is either effected by the nociceptors situated in our tissues, through the Aδ and C fibres, respectively, as a noxious signal extrinsic to the nervous tissue; or it can arise as a result of functional with/without structural disturbances inside the nervous tissue itself. It can also be a combination of the two.

Approximately 70% of all axons within a nerve are nociceptive. The C and Aδ fibres differ fundamentally from each other in various ways:

The *C fibres* are morphologically old; they terminate in the limbic system (see below), where they affect the mood. They are morphine modulated, many in number, medially situated, multisynaptic and slow, 2-3 m/sec. They transmit the dull, aching, burning, and poorly localized pain, and are mainly responsible for chronic pain.

The *Aδ fibres* are morphologically young, few in number, and externally situated. With only 3 synapses, the consequence will be that they transmit the sharp, well localized and mainly acute pain fast, 5-10 m/sec.

Pain modulation

The perception of pain can be influenced because the tolerance of pain can be increased or decreased (Fig. 1). The sum of aggravating/modifying factors will determine the severity of the pain that is being felt at a given moment.

Increasing pain tolerance	*Decreasing pain tolerance*
information	uncertainty
security/confidence	worry
comprehension/sympathy	boredom
hope	anxiety/anger
rest/sleep	fatigue/insomnia
being close to the family	loneliness
touch	depression
heat	being cold
light, sounds, fragrances	light, sounds, fragrances
Endogenous opioids	
Stimulation-produced analgesia	
massage, mobilisation	
myofascial release techniques	
muscle energy techniques	
tens	
acupuncture/intramuscular stimulation	

Fig. 1. *Factors influencing the pain tolerance.*

The pain modulatory mechanisms are of special interest to us. The limbic system plays an important role in this context.

The limbic system includes the morphologically oldest parts of the brain (Fig. 2). They are in close connection with each other and are essential for some typical behaviour patterns in all species of living beings, such as:

1. emotional conditions, which bridge Psyche with Soma, e.g. joy, fear, grief, anger, and depression
2. learning behaviour/memory, learn from experience
3. integration of homeostatic mechanisms related to:
   a. hunger/thirst
   b. fight/flight
   c. sexual behaviour
   d. regulation of muscle tone
   e. regulation of temperature
   f. sleep
4. motivation
5. pain tolerance, how to cope with pain
6. fragrance.

This is important knowledge regarding our approach to and treatment of the patients. We can actually influence the pain tolerance, the perception of pain, and motivate the patients deliberately by knowing this. Besides, it gives us a better understanding regarding some of our clients' beha-

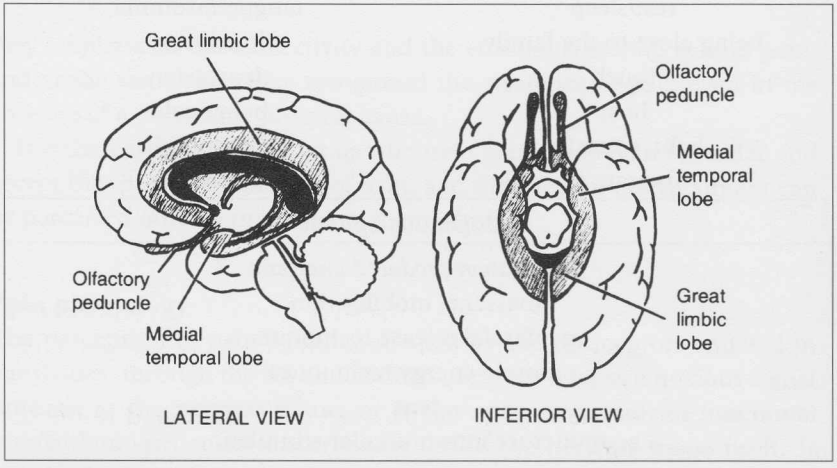

Fig. 2. *Schematic illustration of the location of the limbic system.*

viour – aggressive, frightened, depressive –and why some fragrances can provoke flashbacks.

The presence of *endogenous opioids* (Fig. 1) is believed to function in two ways, one of which is in the limbic system itself, preventing the information of pain from gaining access into the limbic structures. The other one is a descending pain suppression system, inhibiting pain at the spinal level.

The theory of the *stimulation produced analgesia* (Fig. 1) lies within the gate control theory, and for some treatment modalities in the above-mentioned opiate analgesia as well. Modalities which cannot be used in the treatment of torture survivors, not in the beginning anyway, and especially not if the torture given was electrical, because these modalities have to provoke some pain/discomfort to stimulate the production of the endogenous opioids.

When, at a later stage, security and confidence has been created, and the torture survivor has been informed and motivated, it might be possible to use these modalities in some cases.

Patrick Wall was the first to describe 3 sequential types of pain, each with its own characteristics and treatment. Each phase may exist independently, or in any combination and proportion with the others.

1. nociception: the acute pain, with/without tissue damage.
2. inflammation: the vital response of tissues to an injury or infection, normally as self-limiting process.
3. chronic pain: persisting, ongoing pain.

The reactions to acute and chronic pain are totally different in the individual (Fig. 3).

Chronic pain

In the true sense of the word, chronic pain is a misnomer. I do not think any one will claim that a patient with an ongoing inflammation, e.g. rheumatoid arthritis, is not suffering chronic pain.

The terms radiculopathy/neuropathy, as Chan Gunn suggests, are much more appropriate, if only the original definitions are used, namely: Altered function with/without altered structure in a nerve root/peripheral nerve, respectively.

In other words, the reasons for the pain are to be found inside the nervous tissue itself.

The brain thinks, gets the impression of a damaged tissue, and reacts

"Acute"	*"Chronic"/persistent*
increased pulse rate	sleep disturbances
increased cardiac stroke volume	irritability
increased blood pressure	decreased/increased appetite
pupillary dilatation	weakened psychomotorics
increased sweating	decreased pain tolerance
hyperventilation	social withdrawal
hypermobility/incr. tension	abnormal illness behaviour
escape behaviour	(masked) depression
anxiety	
vocalisation	

Fig. 3. *Reactions to pain.*

accordingly with pain. One could say that it is a hidden problem because for a long period there is no detectable physical cause of tissue damage – no neurological deficits. Sometimes the patients complain of pins and needles, but then we know that they have ischaemia in the nerves supplying that area from time to time.

The tissue has become hypersensitive to a quite normal stimulus, and words like psychosomatic and malingering may arise, which is rather unfortunate.

Two factors are important in the comprehension of pain arising as a result of intrinsic reasons:

1. nourishment of nerve cells and their target tissues
2. denervation-/disuse supersensitivity.

Nourishment

The nervous tissue is probably the most oxygen-demanding tissue we have. Normal functions, for instance conduction of impulses, metabolism, and production of endogenous opiates and trophic factor, depend on this supply.

Ischaemia in a nerve will reduce these vital functions, but not equally in all axons; the thickest myelinated fibres, which in fact supply our muscles with impulses and trophic factor, are those which suffer first, having the highest oxygen demand of them all.

How do we get ischaemia in nerves?

Chan Gunn draws our attention to prespondylosis, and direct compression of the spinal nerves in the intervertebral foraminae, whilst Sunderland claims that indirect pressure on the nerves in the tunnels, foramina being but one type, is a much greater threat to the axons.

In order that the blood can flow uninterruptedly through the vascular system in nerves, a downward pressure gradient must be maintained within the tunnels. The greatest pressure must be in the epineurial arterioles and then progressively less in the endoneurial capillary, the fascicles, epineurial venules and least in the tunnel itself.

If, for instance, the tunnel pressure rises above the pressure in the venules, these cannot drain the blood from the endoneurial space, and oedema, ischaemia, and eventually inflammation result. At a later stage irreversible fibrosis and thus structural changes will appear within the roots/nerves.

Long before this stage, the target tissues have become denervation/-disuse supersensitive due to the altered function.

Denervation-/disuse supersensitivity

If biological tissues, e.g. muscles, are deprived of/get reduced amounts of trophic factor, they atrophy and become hypersensitive, according to Cannon & Rosenbluth's law of denervation. Furthermore, these muscles will over-react to many chemical and physical inputs, including stretch and pressure.

Clinical manifestations

Clinical manifestations include all our neuromusculoskeletal structures. The musculoskeletal components are probably the most noticeable and traditionally the ones treated by physiotherapists, but more recently our attention has been drawn towards adverse neural tensions within the connective tissue of the nervous system.

Motor component. The first step might be muscular imbalance, as defined by Vladimir Janda. Muscle spasm and shortening due to the supersensitivity will put stress on the soft tissue attachments, and myofascial pain syndromes such as tendonitis, epicondylitis, tendovaginitis and so forth will develop. Active and latent trigger points, as defined by Travell and Simons, will be part of the problems. Bursitis and arthrosis are also well-known diagnostic entities.

Neural component. As mentioned above, some of the consequences of direct/indirect pressure on nerve roots and nerves are oedema and inflammation. The clinical reaction to this is that the connective tissues with relation to the nervous system will begin to show signs of decreased mobility and extensibility – adverse neural tensions. These changes can be found on test movement and thereafter treated.

The neural component will gradually show autonomic manifestations as well; the involved areas will be colder, showing goose bumps and decreased sweating (vaso-, pilo- and sudomotoric changes) together with signs of trophoedema due to dysfunction in the lymphatic vessels.

Treatment

One of the main messages in the treatment of these syndromes is not to fall into the ditch of treating the peripheral structures only. Rather, address the treatment to the spinal column and adverse neural tensions as well.

We should always remember these syndromes as being results of altered function without/with altered structures of either roots and/or nerves.

As Chan Gunn puts it: "It is a pity we call an elbow for an elbow and a foot a foot, when in fact they are extensions from the neck and low back, respectively."

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Sequelae in Soft Tissues after Beating, Suspension, and Fixation

By Karen Prip

From scientific studies of biomechanical reactions of the collagenous and connective tissues that are found in almost all parts of our body, it is known that these tissues react in a specific way when they are subjected to certain stresses and strains over shorter or longer periods. It is also known that changes occur when tissues are damaged by *direct trauma* (such as beating) and by *indirect trauma* (overloading, for example when a person is suspended and tied up and fixated in awkward positions.)

Injuries to muscles, such as contusions and atraumatic conditions (e.g. mechanical strain), include muscle fibre damage, connective tissue disruption or complete rupture of the muscle, blood vessel damage, and nerve injury.

Collagenous and connective tissue

The collagenous and connective tissues which surround the skeletal system form the *ligaments, joint capsules, tendons, fasciae, aponeuroses, and skin.*

Connective tissue also "fills in" the spaces between the muscles and organs and in the nervous system (peripheral and central).

The structural orientation of fibres differs from tissue to tissue. The fibres are almost completely parallel in *tendons.*

Fibre orientation is less constant in the *ligaments and capsules*; it depends on the function of the ligament. Examples are the collateral ligament of the knee and the Y-shaped ligament of the shoulder. They have different functions, so the fibres run in different directions.

By contrast the fibres in the *skin* have no predominant direction – they are all intermeshed, which gives the skin an extensibility in all directions.

The differences in alignment of the fibres produce differences in mechanical properties.

When *tendons* are loaded, all the fibres straighten out because of their parallel alignment. Since this is in the direction of loading, they are able to bear the highest tensile loads.

When *ligaments* are loaded, the fibres not being aligned so much, only the fibres that are orientated in the direction of the principal load straighten out completely and sustain loads; the fibres that are not orientated in the direction of loads will only bear lower loads before they have all been straightened out. This means that some fibres will rupture earlier than others.

In the *skin* only few fibres are orientated in the direction of loading. Thus, the skin is weaker in tension than tendons and ligaments.

The main components of tendons, ligaments, and capsules are collagenous fibres *and* elastic fibres.

At rest, collagenous fibres are usually buckled, and the wavy shape they assume is called *crimp* (Fig. 1). When stress is applied to a collagenous fibre the first to happen is that crimp is removed (1st phase = Toe phase). When removed, the collagen fibres start to resist strongly any further elongation. Consequently, more force is required to produce further elongation. In the linear phase (2nd phase) at 3-4% elongation, microfailure of the fibres begins. When the fibres reach an elongation of 6-7% they have reached the complete failure – total rupture.

Elastic fibres elongate to almost *twice* their normal length with low loads. With increased loads, however, they suddenly become stiff and rupture abruptly without deformation. Examples are the ligamenta flava and the ligamentum nuchae.

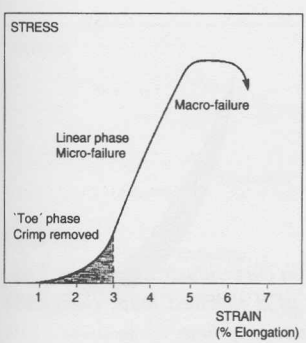

Fig. 1. *Stress-strain curve of collagen.*

In a way, the physiotherapy examination and treatment of soft tissues and joints involve a stress and strain curve for consideration.

When passive movement is induced in mobilizing joints, a stress is applied, and strain is reflected both in terms of the range of movement (quantity) and in the form of the palpated resistance to movement (the quality of movement) (Fig. 2). It is important to realize that physical examination should not enter the second phase, so as not to induce micro-failure of the structure.

When a constant force is left applied to a collagenous structure for a longer period, the result is the phenomenon that further movement can be detected. This movement is small in amplitude and occurs slowly – and is therefore known as *creep* (Fig. 3).

Graphically, creep is seen as continued displacement when a constant force is maintained at some point on a stress-strain curve.

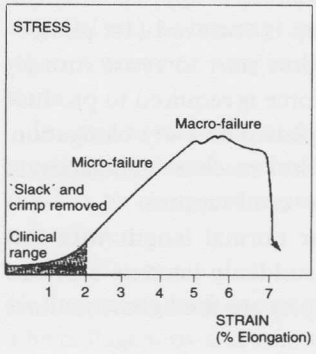

Fig. 2. *Stress-strain curve for a ligament.*

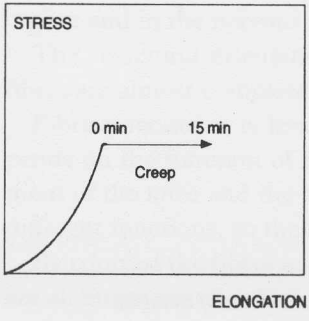

Fig. 3. *Stress-strain curve illustrating creep. Despite maintenance of a constant load, elongation occurs with the passage of time.*

This knowledge is highly interesting because many torture survivors have been suspended and left in fixated positions for hours, maybe days and months, unable to move and change to another position. It must be expected, and indeed it is true, that the torture survivors have massive changes in their supportive and stabilizing tissues after suspension and fixations.

It can be assumed that a possible significance of this creep phenomenon can be explained by another characteristic behaviour of the collagenous tissue.

When a structure is unloaded from a loaded position, it regains another shape, different from the initial shape. This difference in behaviour, referred to as *hysteresis* (Fig. 4), reflects the amount of energy lost when the structure was initially stressed. The difference between the initial and final shape is referred to as *set.*

A set often occurs after creep. When the applied force is released, the structure does not immediately return to its original shape, although it may do so in time.

This phenomenon is important in the interpretation of trauma to ligaments or capsules. The energy lost in breaking the tissue may not be recoverable, and the original structure is not fully reformed.

Healing may occur in a set position, and this may compromise the mechanical function of the structure. Healing in a set position effectively lengthens the ligament, and it will therefore permit a greater range of movement than normal. This may in some cases not be desirable. The "joint play" will change, and may result in wear and tear of the joint, with early arthrotic changes as a result.

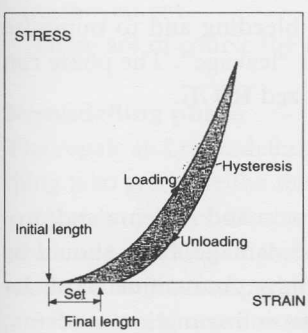

Fig. 4. *Stress-strain curve illustrating hysteresis. When unloaded, a structure regains shape at a rate different to that at which it deformed. Any difference between the initial and final shape is the "set".*

Torture survivors have an impaired afferent input from the mechanoreceptor system because of pathological "joint play" resulting from impairment of the collagenous and connective tissues.

Almost all torture survivors have been subjected to sustained positions and extreme loading of joints.

The tissue damage, which is inevitable, will result in dysfunction in various joints, e.g. the spine and shoulder, wrist, knee, ankle, sacroiliac joints, etc.

Management of traumatic conditions in muscles, tendons, and ligaments after beatings

Before any rational plan of management of traumatic conditions can be initiated, it is essential to understand the sequence of events that follow partial or complete rupture of soft tissues, and their duration of repair.

The 3 phases that follow soft tissue injury are:

1. Acute inflammatory phase (up to 72 hours): vascular rupture and cellular infiltration.
2. Repair phase (72 hours to 4-6 weeks): collagen deposition.
3. Remodelling phase (3-6 weeks to 3-6 months): collagen and muscle remodelling.

Acute inflammatory phase

In the acute inflammatory phase, caused by vascular disruption, red cell extravasation and fibrin clot formation are the predominant features.

The condition will be:

Rubor – Tumor – Dolor – Functio Laesa – Calor

General management

In the acute phase the aim is to minimize bleeding and to minimise oedema formation from post-capillary vascular "leakage". The phase can be summarized by the now commonly recognized **RICE**.

R Rest of the injured soft tissues.

I Ice or cold application. Cold can control pain and oedema and prevent further tissue damage at the site of the damage. Cold should be applied at least in the first 48 hours after injury. Acute musculoskeletal injuries lead to bleeding, with resultant inflammation, oedema,

muscle spasm, and pain. Without appropriate therapy, these effects can cause loss of motion, disuse, and decreased return of function. Cold treatment is extremely important in the interruption of this cycle.

C The early use of compression can support an injured area while decreasing oedema. Once the injury has been evaluated, the involved area can be bandaged, which can decrease oedema and pain by allowing the tissues to stabilize and coagulation to develop in injured vessels. Compression bandaging should be applied continuously for at least 48 hours.

E Together with ice and compression, elevation of an injured extremity is useful; it can decrease swelling by decreasing blood flow, thereby increasing drainage of the soft tissue oedema. Elevation enhances venous return and increases vascular "suck" of extravascular fluid.

ATTENTION: Do not use heat. Heat increases bleeding and vascular "leakage" and thus also increases oedema formation. Alcohol is a potent vasodilator and should not be taken during the first 48 hours.

Repair phase

This is a difficult phase to manage because it requires a balance between setting optimal conditions for collagenous repair and recovery of injured muscle or ligaments.

For a muscle injury the important objective is a pain free muscle with full strength, power, and extensibility.

For a ligament injury the important objective is a pain free ligament with full return to pre-trauma tensile strength and full range of movement since ligaments act as stabilizers under muscle contraction and joint movement.

These are of course the optimal objectives.

Remodelling phase

The repair and remodelling phases blend into each other. The important thing is to graduate the rehabilitation programme.

Already 3 days after a trauma, passive stretching and later active stretching should be initiated. This should be done daily during the whole rehabilitation period.

After a week, active exercises and load-bearing, i.e. walking, and resist-

ance exercises with little load, should be initiated. All within the pain limit.

Ultrasound, if available, should be applied after a few days.

More active exercises should begin 3-6 weeks after muscle and tendon injury.

The above mentioned programme in rehabilitation of soft tissue damage is an ideal model. In the treatment of torture survivors in their home country, an adaptation and the necessary precautions may be possible and thus help to initiate better function of the whole body.

In the treatment of torture survivors with late sequelae, it is individual how the body adapts to damaged tissue, and so it is at the physical examination by the physiotherapist, when dysfunction and tissue damage are revealed. All physiotherapy methods and special techniques can be used. It is not necessary to stress that special adaptations and gentle handling are important for this very traumatized group. Among the concepts used are manual therapy and a psychosomatic approach, as well as proprieceptive stimulation.

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The Physiotherapist's Ethical Considerations

By Lone Tived

Working with torture survivors is different from working with other groups of patients, because ethical considerations must be taken – mainly because of the following reasons:

1. The torture survivor usually suffers from extremely severe psychological and physical sequels after torture, and has lost confidence in other people.
2. The torture survivor is a person in crisis, not only because of the experienced torture, but also because of the forced exile far away from his country, and separated from most of his family and friends.
3. The torture survivor has a unique cultural background concerning religion and tradition, which differs from that of the country where the torture survivor lives in exile.

Most of all it is essential to obtain the client's confidence by showing him empathy and by showing him respect as a person who belongs to another culture. As much as possible everything that might remind him about his experiences during imprisonment and torture should be avoided.

Once the confidence is established it is often possible little by little to let go of some of the precautions throughout the period of treatment.

The premises, the appearance and the attitude of the physiotherapists

RCT does not look like an institution. Our treatment rooms have no clinical appearance, but are cosy and decorated with ornaments and pleasant colours. While treating the clients we wear our private clothes instead of uniforms. As far as possible we avoid waiting time for the client before an appointment. We are very careful that the treatment does not inflict pain, especially during initiation of treatment where the client is in a condition of stress and therefore is hypersensitive.

It is of utmost importance to create a pleasant and confident atmosphere. During imprisonment and torture the client has lost his self-respect and confidence in himself and others. Accordingly, the building up of mutual confidence is the presupposition for treatment.

Interpretation

Interpreters are necessary in the cases where it is likely that problems in understanding the language could occur. At the same time the interpreter acts as a link between the therapist and the client in mutual understanding of cultural differences.

The first meeting between the client and the therapist

The first meeting is considered to be of essential importance for the building up of confidence. It should therefore have the form of a dialogue in order to avoid a situation that could remind of an interrogation (Fig. 1). The therapist should be empathetic and express knowledge about torture and its sequels. This is done in order to relieve the feeling of isolation, guilt and shame which is always in our clients' mind. The therapist informs the client that she by reading his file and the reumatologist's examination knows about his torture and its late sequels.

As most of our clients have not received physiotherapy before, it is necessary to explain thoroughly about the treatment, and during the treatment sessions give relevant information based on anatomical illustrations and books.

The client's expectations to the outcome of the treatment

It is necessary to find out what kind of expectations the client has to the outcome of the treatment, because the client may think that all pain can be taken away, and that he will be able to regain his physical capacity as before torture. Since this is not the case, it is better to set realistic goals and thus prepare him to accept the fact that he may have to live with a certain level of pain even after the treatment.

Special attention during treatment

Many clients are very shy and do not like to undress, since they have been naked during torture as a part of the humiliation. In each case it should be considered whether the client should be treated fully dressed or partly undressed. For the same reason the treatment is often initiated at a neu-

Fig. 1. *It is of utmost importance to create a pleasant and confident atmosphere.*

tral region as for example the shoulder region. In case of sexual torture the pelvic region should be treated later in the treatment course.

During the first few treatment sessions it may be preferable to place the client sitting on a chair or supine so that he is able to see what is going on.

It should also be avoided to place the client in strong light.

It is always important to pay attention to the reactions of the client, both verbal and non-verbal.

The client's cooperation

The client is encouraged to give feedback on the treatment by telling if the treatment hurts or if he is not feeling comfortable. He must also be willing to do specific exercises at home to improve his muscle balance and to get a better awareness of his body and in this way take responsibility for the outcome of the treatment.

Considerations on the choice of instruments for the treatment

Careful introduction is needed to the use of treatment tables and mirrors. Treatment with ultrasound or laser is often postponed until late during

the course, since many of the clients have been submitted to electrical torture and therefore may not accept electrotherapy. In case of electrical torture, treatment with electrodes such as Transcutaneous Nerve Stimulation (TENS) and short-wave is contra-indicated. Neither can treatment be used for which fixation is required such as mechanical traction.

Interrelationship between physical and the psychological symptoms

During treatment the therapist points out the interrelationship between different kinds of torture, the clinical signs and some of the psychological signs and symptoms. If for instance the client experiences respiratory problems and heart symptoms it may be a physical manifestation of his fear. In this way we approach his perception of his body. This is a very important part of the treatment because many clients have an altered perception of parts of the body after the torture.

Flashback

Sometimes it happens that a client experiences a flashback where he re-lives a situation, e.g. from the prison, because something (for example a noise, a gesture, a colour or a light) provoked his memory. When this happens it can be difficult to get in contact with him. The therapist must then stay by the client and make sure that he is not hurt, but should not touch him. Usually it will be possible to "call him back" fairly soon by telling him in a calm voice where he really is.

Common clinical symptoms in torture survivors

There is a fine consistency between the symptoms and the signs within the locomotor system, as opposed to the signs and symptoms from the vital organs. Actually, we often find that the reason for the organic complaints is bound to the malfunctions in the locomotor system.

Some of the most common symptoms are poor concentration and memory, as well as headache, either due to nightmares and lack of sleep or due to problems in the masticatory system and dysfunctions in the genuine joints of the cervical spine.

We also find a high incidence of pain due to dysfunctions in the rest of the spine and the peripheral joints and muscles in particular. These are typical sequels after beating, suspension or fixation in awkward positions, etc.

Most of our clients from the Middle-East suffer from pain in the calves and the feet together with an abnormal spatial orientation, due to late sequels after falanga (beating on the soles of the feet with iron bars, whips, etc.). This kind of torture provokes in the acute phase huge swellings which cause destruction of the tissue structures in the feet and the calves.

Reference

Torture and Physiotherapy to Torture Survivors, The Department of Physiotherapy, RCT/IRCT Publication.

Assessment by the Physiotherapist

By Karen Prip and Lone Tived

Aim

The aim of the physiotherapy is, in cooperation with the client, to relieve or reduce pain and correct locomotor dysfunctions. But it is also to teach the clients to cope with pain and regain body awareness, which has often been lost during imprisonment and torture.

Assessment

The assessment chart includes subjective and objective parts. Appendix I.

The subjective part concentrates on the client's pain and pain patterns.

The objective part on specific muscular and joint dysfunctions that are known to be frequent after torture.

The assessment is conducted at the beginning, and at the end of treatment. In this way the therapist and the client will be able to follow the effect of the treatment regarding pain and body function.

Physiotherapy intervention is based on assessment of pain pattern and function of the locomotor system:

Pain pattern

In cooperation with the therapist the patient maps out his pain pattern and decribes his subjective experience of pain related to daily activities.

Physiotherapy is based on examination of the movements of the body-quality and quantity of joint movements in the spine as well as in the peripheral joints. (Specific Manual Therapy methods are applicable in case of fixations of the joints).

Examination of muscular function – and palpation for active trigger points and assessment of adverse neurological tension are essential bases for carrying out the treatment. There is often a fine consistency of symptoms and signs. The magnitude of violence to which the clients have

been exposed is reflected in almost all parts and tissues of the body accompanied with extensive areas of pain.

The therapist is advised to evince gentle handling.

At RCT the physiotherapists use various angles of assessing the client and a variety of treatment methods are used:

Physiotherapy based on assessment according to a psychosomatic point of view:

- The client's resources are evaluated from assessing the posture which is often like the depressed posture.
- The respiration is often superficial and fast and the clients exhibit symptoms like in *the hyperventilation syndrome.*
- Muscle tension is often increased after a long time of fear and anxiety. *The muscle defense* pattern is common. In a few cases decreased muscular tension *given up* pattern is revealed.

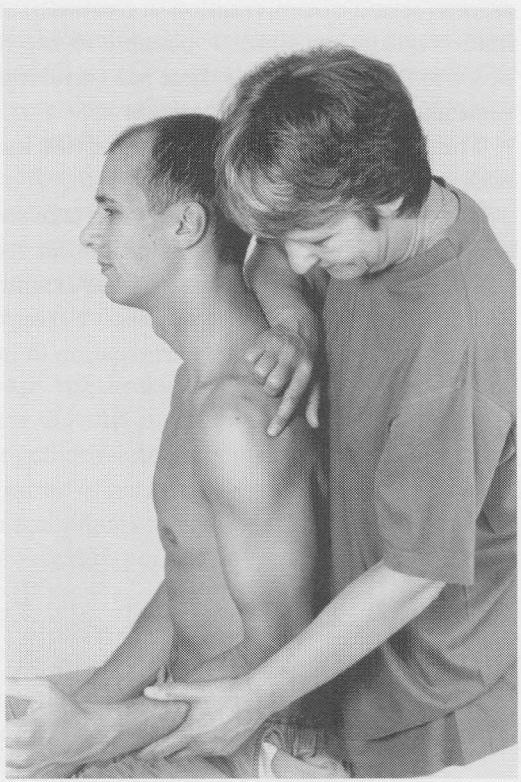

Fig. 1. *At RCT the physiotherapists use various angles of assessing the client and a variety of treatment methods are used.*

Physiotherapy based on assessment of proprioception and perception of the body

The clients often have an altered perception of the body, which is also found in other abused patients (for example raped women and victims of incest) a feeling of being ugly and with malproportions of the inflicted parts of the body. They often have difficulties in feeling the limits of their body.

The proprioception of the soles of the feet is often affected after falanga torture resulting in poor balance of the body when standing or walking.

Vertigo can occur as a part of the whip-lash like symptom (irritation of the cervical part of the sympathetic nervous system).

Appendix 1 shows the assessment chart used by the physiotherapists at RCT.

The schematic outlay of the examination chart has several advantages. It makes it possible to have an immediate picture of the overall situation at different stages of the treatment, and to use the results in quality assurance and documentation of treatment effects. In addition, the schematic registration makes it possible to use the results for scientific purposes to find out whether there is a correlation between specific dysfunctions and specific types of torture.

The psychosomatic assessment is not included in this book as it is under preparation.

It is our belief that the clients must take an active part in the treatment and in this way be partly responsible for its outcome. We believe that involving the client by filling in these examination charts is one method which helps to fulfil this purpose. Seeing progress during treatment clarifies the need for active participation in helping himself.

Principles of Physiotherapy Treatment for Torture Survivors

By Lone Tived and Karen Prip

A variety of physiotherapy methods should be applied to relieve pain and improve function, all in accordance with the findings on the physiotherapy examination. Soft tissue treatment plays a major role in the overall treatment of torture survivors, since they have a large amount of adhesive connective tissue within and between the musculoskeletal structures. This scar tissue gives rise to dysfunctions due to tightness and pain. As a preliminary treatment gentle effleurage is given to painful areas. The purpose is to help the client to accept being touched, to reduce pain and to relax the muscles. When possible, other methods are introduced such as pain-relieving massage, softening of tight tissues, stretching of tight muscles and connective tissue, proprioceptive stimulation and mobilization of stiff joints. Most clients have a changed posture (e.g. they have developed a stooping posture) which can be improved over time when the client starts to feel better physically as well as psychologically (Fig. 1).

The choice of physiotherapy methods

It is very important to stress that the methods we use for survivors of torture are not different from all physiotherapy methods – only they are adapted to this very special group of patients. Thus, a deep knowledge of a broad variety of treatment techniques combined with experience, pragmatism, ingenuity and flexibility is required.

Respiration

Special attention should be directed to the respiratory patterns which are sensitive to a person's psychological state of mind. Respiratory relaxation and re-education techniques are applied either alone or combined with other physiotherapy methods.

Relaxation

Increased muscle tension was a *muscle defense* in dangerous situations and may have become a muscular pattern, which can inflict pain in the muscles. The client must learn to become conscious about the muscle tension so that he again can use the muscles with adequate tension. To begin with, it can be difficult to relax the tense muscles, and therefore it should be exercised with care starting for example with the arms and little by little involving more parts of the body when the client feels ready for that.

Body awareness and body reaction

The client is instructed in working positions, resting positions and in coping with body reactions.

Activities

A nearby indoor swimming pool is used once a week for water adapting exercises and swimming lessons for the clients under the supervision of RCT physiotherapists. There is a fitness room at RCT where the clients can train to improve their physical condition.

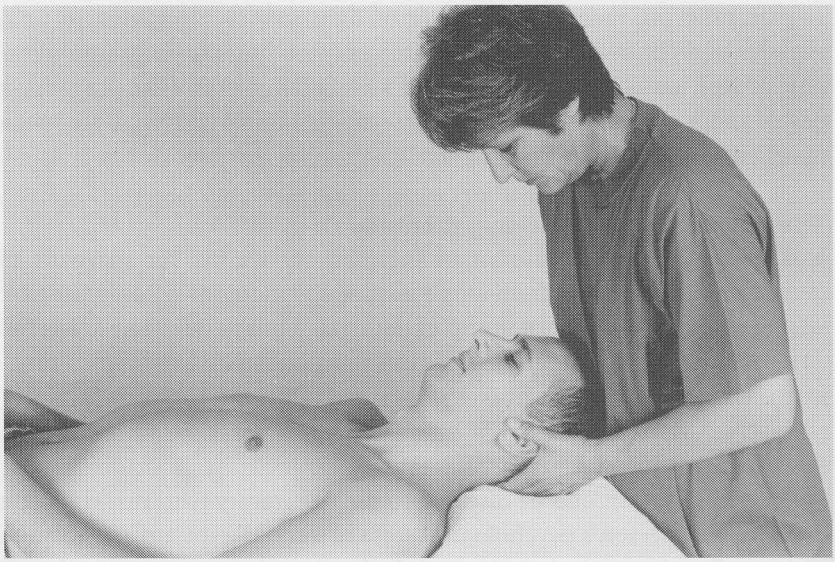

Fig. 1. *Special attention should be directed to the respiratory patterns which are sensitive to a person's psychological state of mind.*

Aid appliances

Because of many persistent physical symptoms it is often necessary that the physiotherapist helps to support the client with aid appliances, e.g. shoe support and shoes with flexible soles because of persistent sequelae after falanga torture. In case of severe low back pain the client can be provided with a soft corset.

Conclusion

It is for the physiotherapist to decide which treatment methods are preferable in each individual case according to findings.

Most of our clients experience a considerable relief of pain in joints and muscles, less headache, less fatigue, improved physical fitness and awareness of body reactions and acceptance of the body. They will also gain a better posture, a better body balance and a freer way of walking. During the course of treatment they have been given instructions as to how they through a variety of exercises and suitable rest- and working positions can prevent relapses.

The result of the treatment must be followed up by the client. Self-treatment should probably be carried out the rest of his life.

Reference

Physiotherapy to Torture Survivors, Torture, Supplementum no. 1, 1994.

Falanga

– diagnosis and treatment of late sequelae

By Grethe Skylv

Physical maltreatment of particular parts of the body leads to specific injuries, depending on the structure and function of the tissues in the area concerned. A typical example is falanga.

Falanga, or *bastinado,* is a form of torture that is used particularly in the Middle East, but also in other parts of the world. It is still used in certain parts of the Middle East as punishment in the upbringing of children, though naturally in a far milder form than is practised in torture.

During falanga, the torturers beat the soles of the victim's feet with cables, iron bars, sticks, or other wooden or metal implements. The victim is usually tied with elevated feet. The blows may be given on the bare soles, or through the victim's shoes or boots. Sometimes the victim is forced to put on his shoes immediately after the beating.

After the torture he may be forced to walk barefoot on small stones or fragments of glass, or suchlike, or on a wet floor. Or to jump on the spot while holding a heavy weight, a torturer for example. All these variations greatly increase the acuteness of the pain, but they also influence the severity of the sequelae.

The immediate effects of falanga are pain, bleeding, and tissue swelling/oedema in and around the different structures in the feet, spreading up the legs to the knees. The oedema does not reach above the knee because of the tight fascial attachments just below the knee. The swelling and extravasation of blood resolve during the following weeks, but some of the sequelae cannot heal spontaneously, or will heal only poorly. This means that the victim is left with a permanent malfunction of gait, unless treatment is given. However, treatment can be initiated at any stage. In other words, it is never too late to start treatment of a falanga victim (Fig. 1).

Fig. 1. *Feet with swelling and haematoma shortly after falanga torture.*

Diagnosis

The late sequelae of falanga can give the following symptoms:

Pain in the calves and feet, particularly deep in the calves and near the joints. The pain is described as stabbing, cutting, or burning. It may be continuous, but is usually intermittent. It intensifies during the day and is not always relieved by rest; indeed, warmth in bed sometimes makes it worse. In those cases there may be short-lived relief on getting up and walking barefoot on a cold floor. There is often a direct relationship between the pain and weight-bearing, so that it worsens during walking or running. Sometimes the victim experiences temporary relief while jogging, but the pain will return later with renewed force. Standing for long periods, and going up and down stairs, make the pain worse. Walking speed is reduced, as is walking distance. Sometime the victim has to stand still in the street, or sit down, before he can continue. He cannot sit cross-legged, cannot squat without pain, and it may be impossible to kneel for any length of time. The pain is worse in cold, damp, windy weather. It is accompanied by tingling or pricking in the calves and sometimes in the feet also.

Other symptoms include feelings of tiredness and heaviness in the thigh and lower leg, and a feeling that the knee and ankle joints are loose, as if they were falling apart. The victim has often noticed that the gait has

changed, as for example the unwinding of the foot from the ground has changed, or he has to put more weight on the inner *or* on the outer arch of the feet to avoid pain.

Cramps in the legs and feet are not common, but when they occur they are either provoked by exertion, thus resembling the closed compartment syndrome[1], or they come on at night, provoked by the warmth under the bedclothes.

Lumbar pain on standing, and more particularly on walking, is frequent, but without radiation to the legs such as is characteristic of sciatica. There is little or no swelling of the ankles or feet.

On examination there are many changes, not all of which are pathognomonic for falanga, but which together paint a recognizable picture of a syndrome:

1. "Smashed" heel and forefoot pads

A normal foot has elastic adipose pads under the calcaneum (the heel pad) and the bases of the proximal phalanges (the forefoot pads). These pads consist of a matrix of elastic connective tissue arranged in septae containing vessels and nerves. The septae divide the pad into small compartments containing closely packed fat cells, and the whole structure functions as a biological shock absorber that reduces the impact from the foot striking the ground during walking and running[2].

Following falanga, these pads may be found to be "smashed". The extent to which they are destroyed depends on the amount of swelling present immediately after the torture. Presence of this sign indicates that the swelling of the soles provoked by the beating has torn the septae that tie the skin to the bones. The fatty tissue, now deprived of its blood supply, atrophies, making the foot less able to absorb the sudden impact from the ground up through the joints and the long bones of the lower limbs to the back. This in turn increases the predisposition to low back pain.

The diagnosis of the "smashed" heel pads is made by means of a few easy clinical examination procedures:

1) On direct inspection from behind, with the patient standing on a hard surface (he can stand on a stool or low table, or the observer can kneel down behind him): a normal heel pad will have a rounded contour, while a "smashed" pad is compressed, flat, and wide.
2) On palpation, the normal elasticity is lacking when the heel pad is

"smashed". With finger pressure at right angles to the underlying tuber calcanei, the bony surface can easily be felt through the skin, and the elastic resistance of the fat compartments of the pad is partly or totally lacking.

The same condition may occur among long-distance runners, but only in the heel pads[3]. Damaged forefoot pads can be taken as pathognomonic for falanga. It should be stressed, however, that normal foot pads do not rule out exposure to falanga. The degree of damage probably depends on the extent of the post-traumatic oedema; the torturers may limit this, as part of the torture, by cooling the feet or forcing the victim to put on shoes immediately after the torture.

2. The skin of the soles of the feet

The cutis and subcutis of the soles of the feet often present hard, rough scars after falanga-inflicted wounds. They affect the gait and are decisive for the details of the pathological protective gait pattern.

The cutis and subcutis in the weight-bearing parts of the sole of the foot are normally bound to the underlying flat tendon, the plantar aponeurosis, by tight bands of connective tissue, but after falanga they may be partly detached because of the oedema that has torn these bands. This change is usually not immediately visible on inspection, but it may be found by palpation, during which one hand stretches the aponeurosis by passive dorsiflexion of the toes, while the other hand displaces the skin sagittally. This poor fixation of the skin may influence the proprioception (see point 10).

3. The plantar aponeurosis, the tendon plate of the foot

In a normal foot, the distal surface of the aponeurosis, as mentioned above, is bound to the skin, its proximal end is attached to the tuber calcanei, and its distal end is bound to the bases of the proximal phalanges through the deep transverse metatarsal ligament (Fig. 2). Falanga-induced oedema may tear this fixation so that the aponeurosis is not tightened normally in walking. Its supporting function for the longitudinal arches of the foot is thus lost, making transmission of the forces affecting the foot during walking difficult and causing exhaustion of the foot muscles, particularly Quadratus Plantaris and Peroneus Longus. Tear of this anterior fixation is diagnosed by passive dorsiflexion of the tarsometatarsal joint of the first toe while palpating the aponeurosis

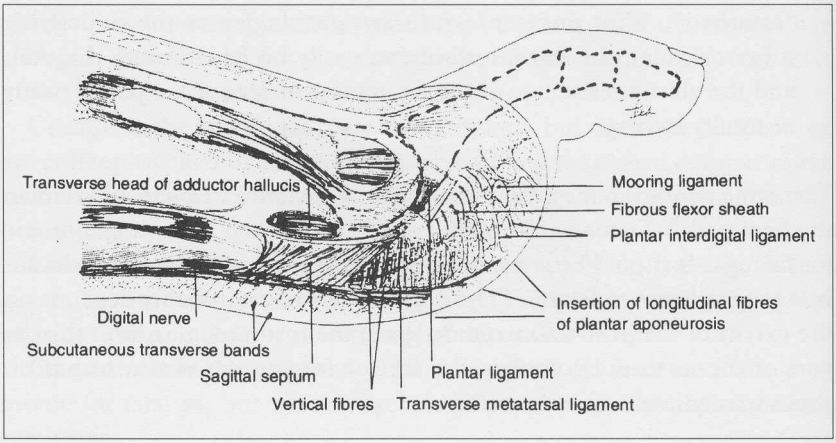

Fig. 2. *The anatomical structures around the distal attachment of the plantar aponeurosis to the skin and the transverse metatarsal ligament. From F. Bojsen-Møller: On the Anatomy of the Foot, Copenhagen: FADL, 1979: 16.*

(Fig. 3); in the normal foot, tension in the aponeurosis can be felt at 20 degrees' dorsiflexion, and the maximum possible dorsiflexion is 60-70 degrees. Further dorsiflexion is a sign of damaged fixation of the aponeurosis[4].

Overloading of normal feet can cause a condition called plantar fasciitis with tenderness and irritation of the proximal attachment of the aponeurosis to the tuber calcanei. Among falanga victims such irritation is present throughout the length of the aponeurosis and is thus called aponeurositis. It is diagnosed by palpation of the aponeurosis while it is tightened by 20 degrees' passive dorsiflexion of the toes (Fig. 4). In this way, it is also assured that the tenderness registered is not localized in deeper tissues. With practice, the uneven coating of the aponeurosis can be felt, as also occurs in tennis elbow following incorrect use of the arm.

4. Muscles

By dissection of the feet of 6 torture victims, supplemented with injection experiments, Bro-Rasmussen and Rasmussen in 1978 showed that the plantar muscles of the feet are arranged in tight compartments, leading to a risk of the closed compartment syndrome[5], which is also known from sports injuries. When the muscles are supplied with blood during activity, e.g. walking, the pressure rises inside the muscle sheet, and chemical

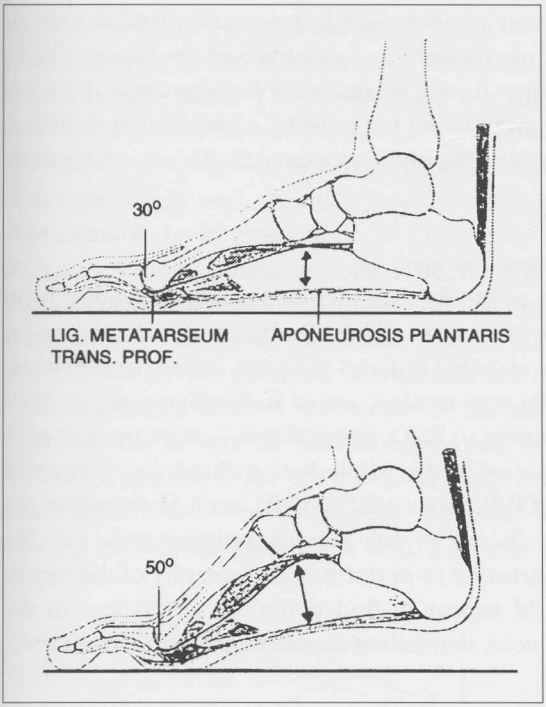

Fig. 3. *The plantar aponeurosis. In a standing position the aponeurosis is without tension, but during walking the heel is lifted, and the toes are dorsiflexed, putting the aponeurosis under tension, whereby the arch of the foot is supported. From F. Bojsen-Møller: On the Anatomy of the Foot, Copenhagen: FADL, 1979: 40.*

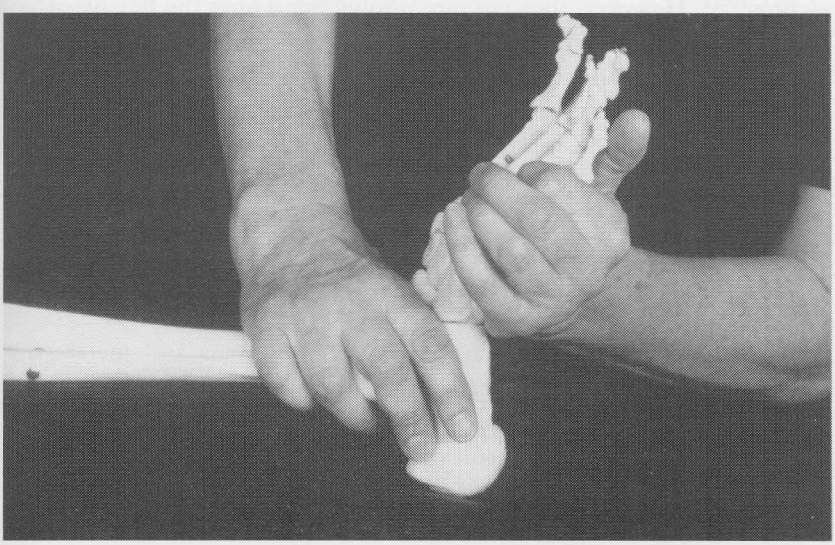

Fig. 4. *Grip for testing/mobilizing of the joint between the calcaneum and the cuboid.*

changes occur locally, involving increased lactate concentration and interstitial oedema, leading to cramps[6,7,8]. As mentioned above, our clients seldom complain of cramps. It may be that they have got into the habit of walking abnormally without using the muscles of the foot and the leg, thus leading to muscular atrophy and consequently decreased pressure inside the compartments.

5. Blood supply and autonomic reaction

The pulse in the arteries of the foot and leg is normal, and there is no increased tendency to varicose veins. There is, however, a tendency for the feet to alternate between being hot and cold and for increased sweating of the feet. These signs may remind one of Reflex Sympathetic Dystrophy (RSD). Corresponding to RSD, dysaesthesia is often present after falanga in parts of the sole or in the whole foot without any segmental pattern, but other signs of RSD are usually absent, such as change in the distribution of the hairs, change in nail growth, pointed toes, etc. We have not yet had the opportunity to perform thermography of the legs of falanga victims, but would expect to find pathological changes in the direction of either hot or cold, depending on the degree of the trauma[9].

6. Bones

Fractures of foot bones, with their sequelae, can occur among falanga victims[10,11]. However, they are rare, probably because the flexible structure of the foot makes it able to absorb most of the force of the blows. In the few patients in whom we have seen sequelae of fractures, once or twice with osteitis, the feet had been exposed to other forms of torture as well, e.g. they had been crushed against the ground with the heel of a boot.

A case of aseptic bone necrosis of a toe[12] was probably secondary to a falanga-provoked closed compartment syndrome.

7. Joints

Examination of the passive movements of the tarsus and metatarsus, often shows a change of "joint play", and decreased movements in many joints. Treatment, however, often reveals a hidden hypermobility/instability in several joints as a result of damage to ligaments and joint capsules during falanga, and from the subsequent oedema as well. The ability of the foot to function as a dynamic spring during walking is thus also affected at this level.

8. The lower leg and interosseous membrane

During falanga the talus is forced up within the ankle joint, as in landing heavily on the heels. This trauma and the subsequent oedema lead to over-stretching of the stabilizing ligaments around the ankle, so that the normal shock-absorbing and stabilizing function of the connection between the fibula and tibia is affected. In a falanga victim, the normal tightening of the interosseous membrane does not occur when the foot strikes the ground during walking. Also, there is little or no activity in the Tibialis Posterior, the only muscle to support this tightening with its attachment to the tibia, the fibula, and to the intervening membrane, whose fibres stretch obliquely downwards and laterally.

On palpation, there is tenderness of the superior and inferior tibiofibular joints, as well as indirect tenderness of these joints when light pressure is applied to the tuber calcanei from below. Furthermore, instability of the joint constructions of the lower leg can be diagnosed by pushing the fibula backwards and forwards in relation to the tibia (Fig. 5).

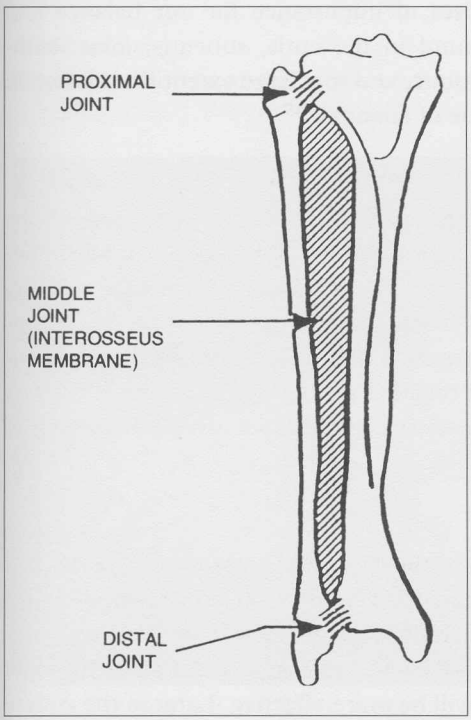

Fig. 5. *The proximal and distal joints between the tibia and the fibula, and the interosseous membrane.*

9. The musculature of the lower leg

Various patterns of muscular imbalance in the lower extremities are seen, depending on which compensating pattern of gait the individual has adopted in order to diminish the pain. In general, though, there are increased tension and active trigger-points[13] in the Tibialis Anterior, Biceps Femoris, Tensor Fasciae Latae, and in the Ilio-tibial Tract, as well as inactivity (but not paresis) of Tibialis Posterior, Peroneus Longus and Brevis, and Popliteus. The fasciae surrounding all the muscle compartments feel tight on palpation. This muscular imbalance can lead to musculo-tendinous inflammatory conditions similar to the "medial tibial stress syndrome"[14], but with various localizations depending on which groups of muscles are overworked during the relieving gait pattern[15,16,17].

10. Proprioception, balance

The various structures of the foot are richly supplied with proprioceptors, i.e. nerve endings with sensitive organs to provide us with information about ourselves: about the positions and movements of the foot, the forces generated by the muscles, and our attitude and motion relative to the earth. They register impulses of importance for our balance and space orientation. They are found in the cutis, subcutis, joint membranes, tendons, muscles, and joints, and to a large extent their function has been affected by the sequelae of falanga[18,19].

Treatment

The treatment of the sequelae of falanga is a puzzle consisting of the following pieces: relief of pain, treatment of soft tissue, mobilization, stabilization, training of inhibited/inactive muscles, self-training, training of balance, proprioception and orientation in space, supply of aid-appliances, rehabilitation, and instruction in how to maintain the improvement. These pieces must be put together paying due attention to the fact that many physiotherapeutic practices can remind a torture victim of the torture itself.

Relief of pain

If the victim can accept soft massage of the feet and lower legs, this is a good pain-relieving measure which probably works via the mechanoreceptors. Furthermore, thermotherapy is another mild, but efficient pain-relieving treatment. Heat should be the primary choice, but in some cases alternating heat and cold will be more effective. Later in the course

of the treatment, electrical therapy may be introduced in the form of ultrasound for tendinitis, and laser treatment, first and foremost to the trigger points. However, this requires very careful preparation of the victim, if he has been exposed to electrical torture.

Various other appliances may be pain-relieving: an elastic bandage to support the anterior transverse arch of the foot, a figure-of-8 bandage to stabilize the ankle, taping of the "smashed" heel pad with sports-tape (Fig. 6), a pair of palliative orthotic devices with heel cushioning to redistribute pressure away from the tuber calcanei and to support what is left of the heel pad, and a pair of shoes with inbuilt shock-absorption, such as a pair of good running shoes (Fig. 7).

Soft tissue treatment

The primary aim of soft tissue treatment is to remodel the connective tissue in all the structures of the foot and lower leg, in order to make room for the muscle fibres to function freely, and to remove any pathological pressure on vessels or nerves. Any soft tissue technique which does not provoke pain can be used.

Mobilization

The locked joints of the tarsus and lower leg must be mobilized using

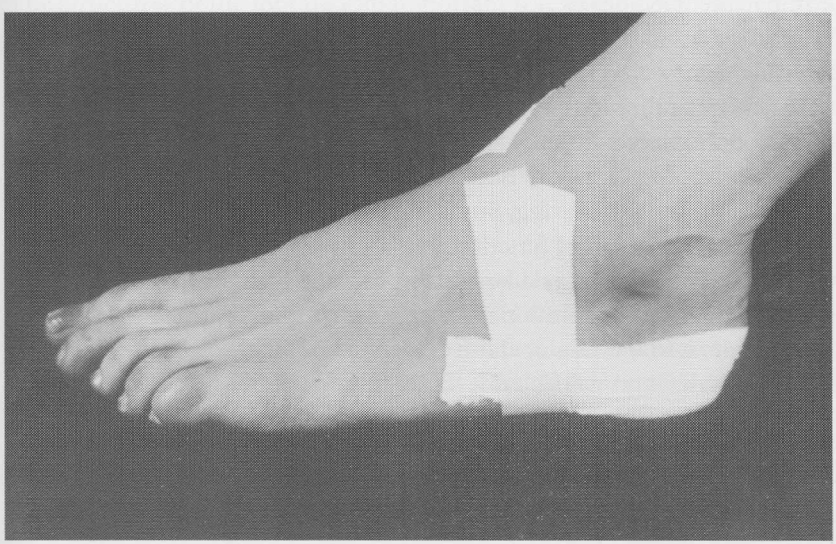

Fig. 6. *Taping of heel pad, lateral view.*

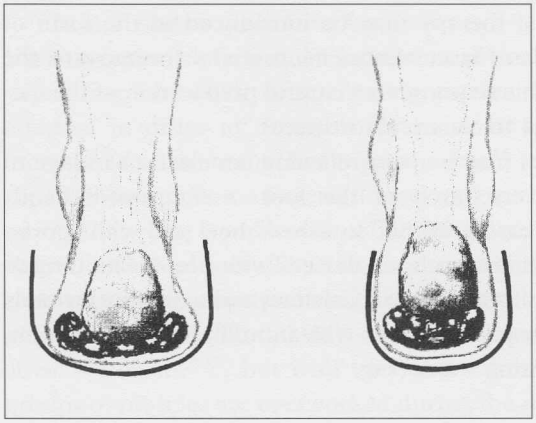

Fig. 7. *"Smashed" heel pad without and with supporting device.*

manual techniques, but carefully, because of a possible underlying hidden hypermobility, as mentioned above. The Functional Techniques, which work away from the barrier instead of trying to break it, are well suited for this.

Before training of endurance is commenced, the tight connective tissue in and around the muscles, and the tight fasciae, must be stretched, using techniques such as the Soft Tissue Technique or the Myofascial Release Technique, in order to avoid development of the compartment syndrome.

Stabilization

The stabilization that was started passively by supportive appliances should be replaced little by little by active muscular training. This can preferably be done as rhythmical contractions and co-contractions, at first without weight-bearing, but facilitated by distal fixation with the foot in its normal position of function.

Tibialis Posterior plays a key role in the stabilization of both the lower leg and the foot. As mentioned, it arises from the tibia, the interosseous membrane, and the fibula, and it is inserted on all the tarsal bones, apart from the talus and calcaneum. Thus, it is not only responsible for the stability of the tibia and fibula, but also, together with Flexor Hallucis Longus, for the posterior transverse arch of the foot. The lateral longitudinal arch is mainly supported by the peroneus muscles, which must therefore be exercised when there is instability around the cuboid bone. The anterior transverse arch is primarily stabilized by Abductor Hallucis.

Quadratus Plantaris serves to stabilize the foot at the medial longitudinal arch. Training of Quadratus Plantaris will at the same time facilitate the stability of the ankle, knee, and hip.

The importance of the function of the clivus for the stability of the foot should be mentioned here. The clivus is the cleft along the axis between the medial and the lateral part of the foot. Medial to the clivus are the talus, the navicular bone, the three cuneiform bones, and the three medial toes. Lateral to the clivus are the calcaneum, the cuboid, and the two lateral toes. The construction of this axis, with all the ligaments crossing transversally, and none going longitudinally, makes it possible for the medial and lateral parts of the foot to slide forward and backward in relation to each other, forming a built-in, elastic, springing "orthosis". If the ligaments are too tight, the foot will become stiff; if they are too loose after the oedema, the Quadratus Plantaris should be trained to take over part of their lost, stabilizing function.

Self-training

Instruction in self-training should avoid unnecessary weight-bearing for the joints of the feet and legs, but it will add to the purpose to combine the exercises with facilitation of the proprioceptors of the sole of the foot.

Balance training

The structures of the foot play an important role in the body balance and the stability of all the joints of the body by having a large number of proprioreceptors and thus a large afferent input. Therefore, training of balance in the standing position is an important part of the rehabilitation of falanga victims. A rocking board is useful for this purpose, or a flat foam rubber pillow or other yielding surface.

Supporting appliances

The most important appliances for late sequelae of falanga have already been mentioned: elastic stabilizing bandages on forefoot and ankle, supporting heel orthoses, and shoes with built-in shock absorption and a solid heel cap. But another "appliance" should be mentioned here: long under-pants or perhaps leggings made of angora fleece. They are thought to be effective at two physiological levels:

1. Connective tissue when cooled becomes firm and hard. Since torture victims have large amounts of cicatricial adhesive connective tissue

within and between the musculoskeletal structures, cooling will exert increased pressure on the surrounding tissues, including the nociceptors ("pain receptors") so that the brain receives a pain signal. This pain impulse can be avoided if the tissue is kept warm and soft.

2. As mentioned above, it is probable that torture victims have some degree of RSD, and it is therefore important to avoid local changes of temperature, since the blood vessels cannot compensate adequately. Angora fleece is singled out because it is porous and has a higher insulating capacity than wool from sheep.

Rehabilitation

It must be stressed that the feet and legs of the falanga victims will not be as robust as before, even after successful treatment. If the victim's previous job involved a lot of standing and walking, he will have to consider a change of job. Furthermore, it is necessary to give advice about sensible physical spare-time activities to keep in form without putting too much stress on the legs.

Help to self-help

Without doubt, the extreme oedema immediately after the falanga torture is responsible for most of the sequelae, and any intervention to decrease this swelling during the first days will therefore reduce the injuries.

We can here apply the same principles as in acute traumatology: RICE, where R stands for Rest, I for Ice (or cold water), C for Compression, and E for Elevation (to above heart level). How these principles can be adapted to prison situations will depend on the conditions.

After a day or two, gentle massage can be applied to relieve the pain, disperse the swelling, and influence the forming of the unavoidable scar tissue to make it supple and to form along the muscles and tendons without too much adhesion. If the victim is in a place where ultrasound treatment is available, it is an advisable supplement. At this stage, few active exercises are advisable, and overdoing the movements should be avoided, since all the stabilizing mechanisms of the foot and lower leg are out of function.

From the third day, small movements of the knee, ankle, foot, and toes may be started, but extreme movements and weight-bearing should be avoided. Thereafter, the training may be extended slowly, but too many exercises may cause more harm than good. Later, after about a week,

training in balance is important: standing on the heels and toes, one leg at a time, turning round, standing and walking with the eyes shut, walking backwards, etc.

Most victims can become symptom-free

It is rewarding to treat the sequelae of falanga torture. Most victims can become symptom-free, and all can get much better, by traditional physiotherapeutic techniques directed against the above-mentioned specific changes, supplemented by supporting and shock-absorbing appliances, elastic bandages and/or taping, and, not least, explanation and advice.

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The Whiplash Syndrome

By Kirstine Amris

The whiplash syndrome refers to a collection of symptoms and disabilities following a whiplash injury. The term whiplash refers to the injury mechanism, which is a forceful sudden hyperextension of the neck, followed by a recoil in flexion.

This type of trauma was originally described in persons involved in car accidents, especially rear-end collisions, but any trauma that produces hyperextension of the neck can lead to a whiplash syndrome. The neck may be snapped sharply by direct or indirect force following a blow on the neck or back or a fall on the outstretched arms. These last types of trauma are likely during torture. It is therefore possible that some torture victims will suffer from the whiplash syndrome in its chronic phase.

Another reason for bringing up the whiplash syndrome in connection with torture is that it serves as an example of injuries in the musculoskeletal system causing not only widespread physical symptoms but also psychological disabilities.

Anatomy of the cervical region

The cervical spine is surrounded by numerous soft tissues, including ligaments, muscles, nerves, vessels, the oesophagus, and the tracheal tube. The cervical region is also the most mobile part of the spine, containing a complicated series of joints. These include two synovial joint-complexes forming the upper two movable segments and six other movable segments, each of which consists of an interbody joint and two facet joints. The intervertebral joints control the range of movement, and the facet joints the types of movement.

The cervical spine is additionally stabilized by ligaments, of which the anterior longitudinal ligament is particularly important in connection with whiplash injuries.

The spinal cord is situated in the central bony canal and the spinal nerves leave the spinal canal in intimate contact with the bony joint structures. It is also important to remember that the vertebral arteries on

their way to the brain enter the cervical spine at the level of the sixth cervical vertebra. They supply the posterior half of the brain and the spinal cord.

The whiplash injury

If the neck or back is struck from behind, the marked flexibility of the neck and the weight of the head result in a forceful hyperextension of the neck as the body is accelerated forward. The head hits the top of the back and this impact plus the reflex contraction of the muscles reverses the head movement so that it goes forward (Fig. 1).

The hyperextension of the neck places traction on the anterior soft tissues including the anterior longitudinal ligament, which is attached to the margins of the vertebral bodies and the discs. Compressive forces are

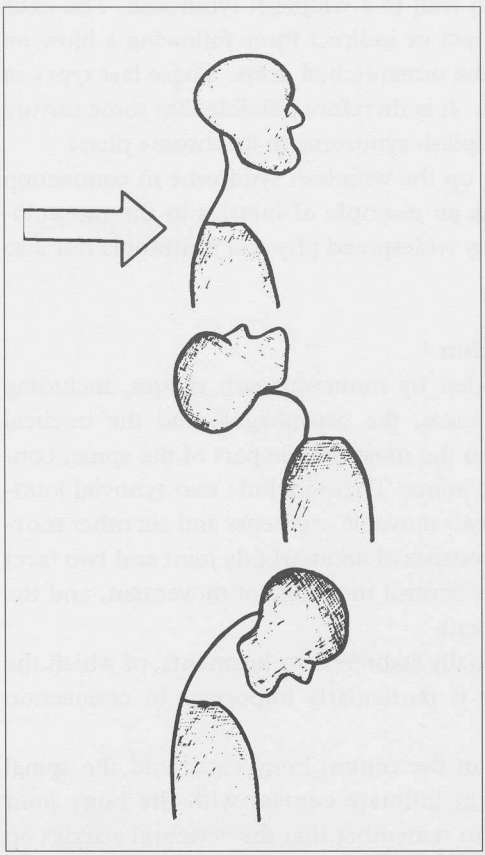

Fig. 1. *The whiplash.*

placed on the posterior structures. The opposite happens during the recoil flexion, with traction on posterior structures and compression of anterior structures. The mechanical overstretching causes injuries to the prevertebral muscles, the oesophagus, and the trachea, and eventually bleeding with formation of prevertebral haematomas.

In the anterior part of the spine, the overstretching may lead to strain and tears of the anterior longitudinal ligament, to anterior disc injury including horizontal separation of the disc from the vertebral endplate and annular tearing, to trauma of the anterior vertebral body, and vertebral arterial injury. In the posterior part of the spine, compression and stretching may lead to sprain and tears of the posterior longitudinal ligament, to posterior intervertebral disc injuries including disc protrusion and herniation, epidural haematoma formation, injuries to posterior joints, and fractures of the posterior vertebral arch; injuries to the posterior cervical ligaments and muscles, giving rise to instability and possibly subluxation, may also occur (Fig. 2).

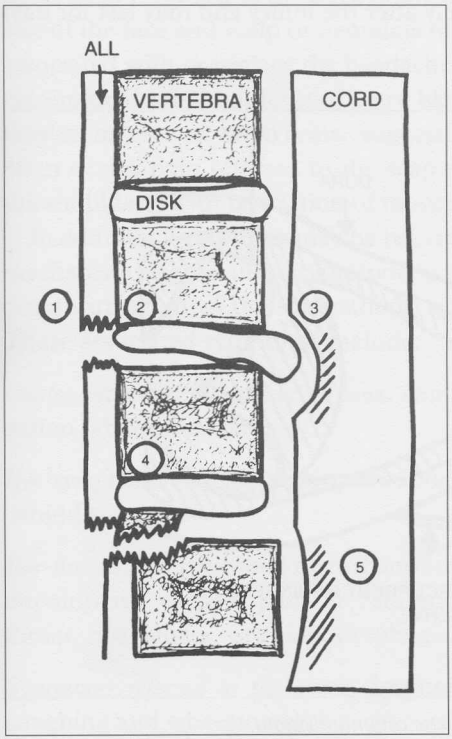

Fig. 2. *Injuries due to cervical extension.*

1. Tear of the ant. long. ligament
2. Separation of the disk from the end plate
3. Posterior disk herniation
4. Horizontal fract. of the vertebra
5. Posterior subluxation and cord injury.

Nerve injuries – cord injuries, injuries to cervical nerve roots, and cervical spinal nerves – are also likely.

Further, the cervical part of the sympathetic nervous system might be involved. The cervical nerve roots are connected with the sympathetic nervous system through the sympathetic cervical ganglia. Sympathetic nerve fibres pass from the cervical ganglia to the anterior divisions of the cervical nerves. Other fibres make a connection with the recurrent spinal meningeal nerve, which supplies the dura and ligamentous structures in the spine (Fig. 3). Irritation of the cervical part of the sympathetic nervous system may give rise to vertigo, blurring of vision, tinnitus, transitory deafness, pharyngeal and laryngeal symptoms, and symptoms involving the shoulder, arm, and hand.

Symptomatology

The symptoms of the whiplash syndrome may be placed into 3 main categories according to the duration and the time of onset: the acute phase, the chronic phase, and the delayed phase.

The acute phase follows immediately after the injury and may last for days or weeks.

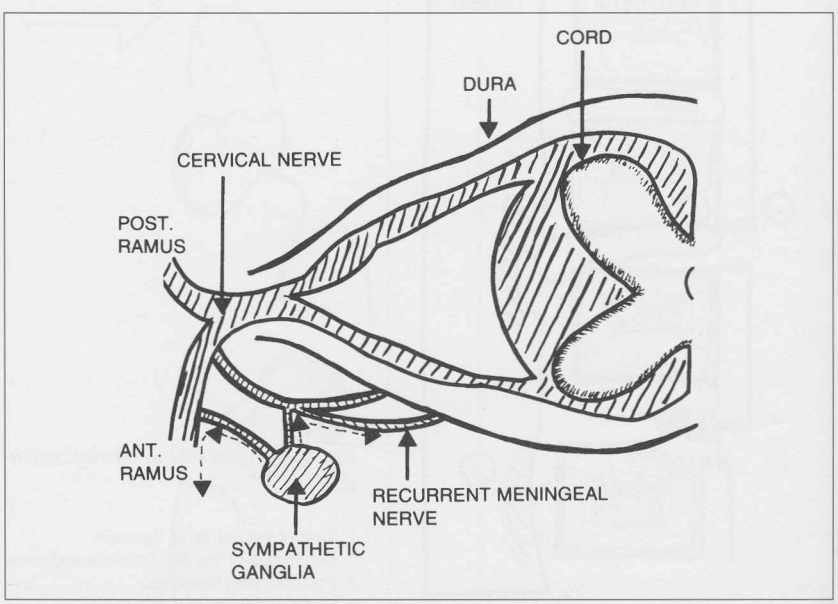

Fig. 3. *A cervical nerve and its sympathetic communication.*

The chronic phase follows the acute phase in some but not all patients. When symptoms are still present 6 months after the injury, a chronic whiplash syndrome has developed. Chronic whiplash syndrome is reported to develop in up to 50 % of cases of whiplash injuries in car accidents.

The delayed phase is diagnosed when symptoms begin days, months, or years after the neck injury. The symptoms are identical with those in the acute or chronic phase, but there is no history of immediate injury. Careful inquiry will usually elicit a history of previous trauma.

The symptoms in the acute phase are dominated by symptoms from the neck, head, and upper extremities. The neck symptoms are as a rule immediate and marked. The condition may commence with severe nuchal pain or a slight ache in the back of the neck, progressing within hours. The neck pain is followed by spasm of cervical spinal muscles, with restriction of movement.

Headache is also common. It may be localized or generalized, not necessarily localized to the back of the head, as is often stated. Paraesthesiae of the face and scalp or neuralgia of the teeth and jaws are sometimes associated with or replace the headache. Symptoms referred to the upper extremities and shoulder girdle are likewise common. Pain and paraesthesiae in one or both arms, suggesting cervical nerve-root irritation, often occur; pain referred to the scapular region, the pectoral area, and the shoulders, with restriction of movement, is also common.

In addition, symptoms may be referred to many parts of the body. The mechanism behind these symptoms is not quite clear, but some may be due to irritation of the sympathetic nervous system and cranial nerves. These associated symptoms include:

Gastro-intestinal symptoms: nausea, vomiting, anorexia, diarrhoea, constipation, abdominal pain.

Eye symptoms: blurred vision, irritation and watering, ptosis, pain in or behind the eyes.

Ear-nose-throat symptoms: disturbance of smell and taste, tinnitus, hearing impairment, vertigo, pain in ears and nose, irritation or pain in the throat, hoarseness, yawning, dysphagia.

Symptoms referred to the chest: dyspnoea, palpitations, precordial pain, coughing and wheezing.

Finally, symptoms such as profuse perspiration, pallor, flushes, labile blood pressure, frequent micturition and low back pain or sciatica have been reported.

As the symptoms from the acute phase subside and the condition eventually enters the chronic phase, these associated symptoms are often a predominating feature. In addition, a number of psychoneurotic symptoms often develop, including constant fatigue, general irritability, poor concentration and memory, mood changes, tension, depression, confusion, general anxiety, sleeping disturbances, and intolerance to alcohol and medications.

In the chronic phase, the symptoms are usually intermittent, with periods of remission and acute exacerbations. Aggravation of symptoms may be provoked by many factors, such as emotional disturbances, tension, fatigue, prolonged reading or writing, etc. Physical activities involving use of the hands, arms or shoulders, by placing an indirect strain on the neck, may provoke an acute attack.

Physical findings

In the acute phase neck signs are very marked. Tenderness in the back of the neck, muscle spasm with restriction of movement and change of posture are found in most patients. Rarely, there may be signs of involvement of cervical nerves, with motor weakness, sensory changes, and reflex changes in the upper extremities.

As the condition becomes chronic, the muscle spasm in the neck gradually diminishes or disappears with normalization of the range of neck movement. Segmentary dysfunction in the cervical spine and localized tenderness in the muscles of the neck and shoulder girdle, however, are often found in patients with persistent complaints.

Treatment

Physiotherapy following acute damage to the discs and joints of the neck has to be done with some care. An early period of immobilization of the neck is essential to allow for resolution of effusion and bleeding in the tissues. On the other hand, movement increases fluid transport and aids nutrition to the largely avascular joint structures, and it facilitates removal of exudate and allows healing to occur.

There is still considerable dispute as to when movement exercises should begin and how much should be allowed; early gentle movement seems to be the best approach. After the initial period of immobilization,

small-range movements of the neck in short sessions is recommended. The exercises should gradually be increased with respect to the amplitude of movement and duration of the sessions. Graded exercises, initially isometric, moving toward resisted activity to strengthen the neck muscles should be done.

The purpose of the treatment is to restore the mobility of the neck, restore muscle strength and muscle function, and correct changes of posture. Early treatment is important in order to avoid development of a chronic whiplash syndrome. The treatment is in many cases difficult and time-consuming.

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The Layer Syndrome

Muscular dysfunction and diagnostic considerations

By Birte Carstensen

The holistic approach to the patient is the most important concept in the treatment of dysfunction and pain. The holistic approach considers pain as an expression of dysfunction of the entire locomotor system and not merely as an affliction of one structure such as a joint, muscle or connective tissue.

Function-Dysfunction

Function in any place in the musculoskeletal system will affect the entire body. Dysfunction will similarly affect the entire body.

The masticatory system, which is a subsystem of the musculoskeletal system, should be remembered when diagnosing functional changes.

Dysfunction in the musculoskeletal system is a secondary problem most often accompanied by pain, for example headache, shoulder and/or arm pain, low back pain with or without pain in the legs.

Each dysfunction and its accompanying pain should be analysed in relation to the person's total posture and behaviour.

In general, joint dysfunction is due to changes in proprioceptive stimuli from the periphery (joint, muscle or connective tissue). These will influence both the muscular tone and the irritation threshold. Some muscles will become hypertonic and be tight, and get a decreased innervation threshold. Other muscles will become hypotonic and weak, with a relatively increased innervation threshold. This muscular response is stereotyped, but specific for each joint. There is a muscular pattern for each and every joint dysfunction. As has been described, this is most often seen in the hip joint.

Stress increases the muscular tone and thereby the risk of dysfunction. When this happens, joint dysfunction, which was previously silent and without pain, becomes painful.

Hypermobility, both constitutional and local, can also be a risk factor, because changed muscle balance can lead to instability in certain joints, resulting in poor and inadequate joint protection and pain. This change in muscle balance will also cause changes in the forces on and tension in the fasciae. The elasticity will be changed and thereby the mechanical friction will be influenced so that the push and pull of different structures, including the blood vessels and nerves, is changed.

A joint dysfunction without pain will not by itself increase the tone of the surrounding musculature, but as soon as pain begins there will also be reflex increased tone. At the same time one can see the pattern of trigger points, as described by Travell and Simons. Treatment of these trigger points will immediately relieve pain, but the underlying muscular dysfunction may continue, and if so this must be treated in order to avoid a recurrence of the pain.

Torture survivors complain of many problems, but all these problems follow the well-known chain reactions because each specific change in the pattern of movement leads to changed joint-play and changed muscle tone, when some muscles become hypertonic and some hypotonic.

The layer syndrome is such a response, a functional change.

Muscles – fibre types

Human skeletal muscles are composed of thousands of individual muscle fibres. One single muscle fibre has approximately the thickness of a strand of hair, and it can reach a length of 10-15 cm, depending on the size of the muscle.

Two types of muscle fibre are of interest in this respect. The so-called slow twitch fibres (type 1 fibres), and the fast twitch fibres (type 2 fibres). In addition, intermediary types (type 2A, type 2B, etc.) are also found.

In postural functional muscles we primarily use the slow twitch, type 1, fibres.

In phasic functional muscles we primarily use the fast twitch, type 2, fibres.

Slow twitch fibres contract in about 100 milliseconds whereas fast twitch fibres contract in about 7 milliseconds.

When stained and examined histologically, slow twitch muscle fibres are red. That means that they contain iron, which can bind oxygen. They

obtain their energy from glycogen and fat, with high oxygen consumption and minimal lactic acid production.

Fast twitch muscle fibres are white. They obtain their energy from glucose in the anaerobic cycle with the rapid production of lactic acid.

The capillary supply of the slow twitch fibres is significantly greater than that of the fast twitch fibres (approximately 4.8 capillaries per slow twitch fibre versus approximately 2.9 capillaries per fast twitch fibre). This means that the slow twitch fibres fatigue after several hundred contractions, while fast twitch fibres fatigue after only a few contractions.

Slow twitch fibres are primarily innervated by alpha-two motor neurones and they have a large supply of muscle spindles. The fast twitch fibres are innervated by alpha-one motor neurones and have only a few muscle spindles. The fact that muscle spindles are NOT randomly distributed seems to be significant in the development of functional pathology of muscles.

Examinations of top athletes show that the ratio between slow twitch and fast twitch fibres is not fixed within one muscle. It can be changed by different exercises. The quadriceps muscle of a marathon runner consists of up to 93% of slow twitch fibres, while musculature of an untrained person has only 48% slow twitch fibres.

No histochemical study has yet demonstrated morphological transformation of the individual muscle fibres in patients with so-called functional muscular imbalance. Even though it is assumed that a clinically observed shortened muscle (mainly postural functioning muscle) would show a significantly larger number of slow twitch fibres than would be seen in a normal muscle.

The postural functioning muscles are always at least 1/3 stronger than the phasic functioning muscles and they have a lower innervation threshold; they are much easier to activate.

Too much activity or too little activity will give the same result; the postural functional muscles will be shortened and hypertonic, and the shorter and the more hypertonic, the lower the innervation threshold. The phasic functioning muscles will react with hypotonicity and even atrophy; they may be forgotten in the muscle synergy.

The tendon organs are tension recorders. Muscle spindles give information about the length of the muscle. Increased muscle tone can thus be considered an important factor in the genesis of pain in the locomotor system.

The layer syndrome

The areas of the vertebral spine that are at risk of hypo- and hypermobility together with dysfunctional muscles provoke the layer syndrome, which has been described by Janda. When looking at the patient's back, areas of hypertonic and hypotonic musculature arranged in layers can be seen (Fig. 1).

The pelvic cross

The oculo-pelvic reflex is fundamental, and it is therefore very important to analyse the position of the pelvic girdle (Fig. 2).

When looking at the lumbar region, the postural functioning muscles are the extensors of the lumbar spine, the extensors of the thoraco-lum-

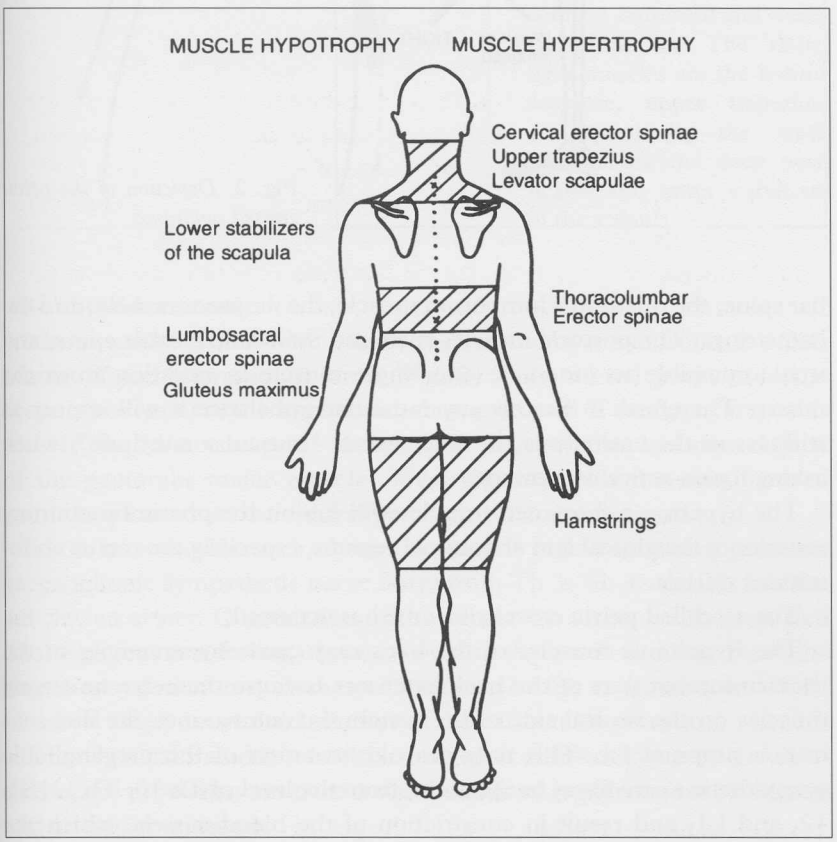

Fig. 1. *Depiction of the layer syndrome.*

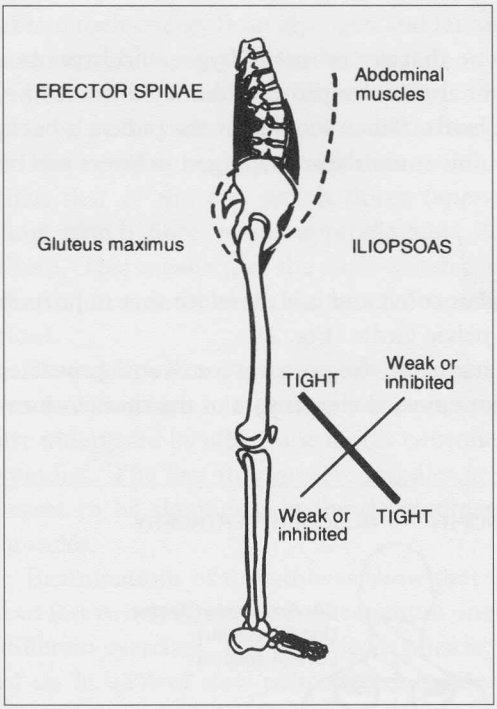

Fig. 2. *Depiction of the pelvic crossed syndrome.*

bar spine, the quadratus lumborum muscle, the iliopsoas muscle, and the hamstrings. The postural muscles surround the whole lumbar spine, and it is impossible to innervate one single muscle in isolation from the others. Therefore, if there is any muscular imbalance it will appear as stiffness in the entire area, in other words "muscular ankylosis", when asking for an active movement.

The hypertonic shortened muscles will inhibit the phasic functioning muscles of the gluteal and abdominal regions, especially the rectus abdominous muscle.

The so-called pelvic cross syndrome has occurred.

The hypertonic muscles of the back may cause hyperactivity in the thoraco-lumbar part of the back extensors because there are no strong muscles on the ventral side of the vertebral column, since the iliopsoas muscle stops at L1. This may provoke irritation of the preganglionic sympathetic nerve fibres to the aorta, from the level of Th 10, Th 11, Th 12, and L1, and result in constriction of the blood vessels, which the patient might feel as ischaemic pain or a feeling of restlessness in the legs.

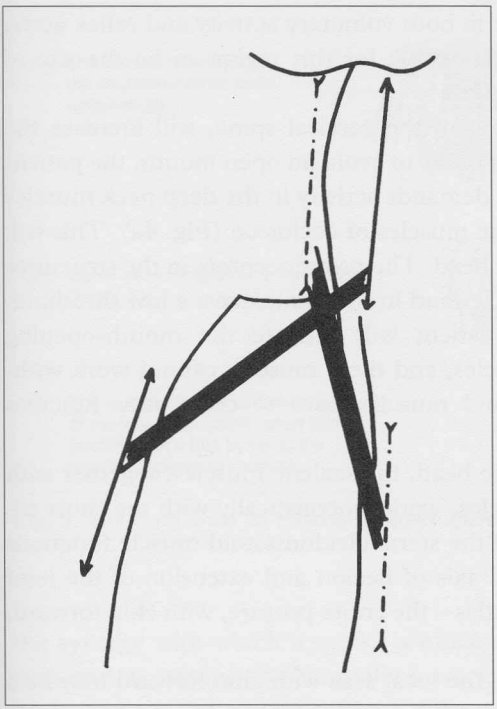

Fig. 3. *Schematic representation of the proximal crossed syndrome.* The thick lines connect shortened and weakened muscles. The short, tight muscles are the levator scapulae, upper trapezius, and pectorals; the weak muscles are the deep neck flexors and lower stabilizers of the scapula.

The shoulder cross

In the shoulder girdle, what can be seen in the layer syndrome is a flattening of the interscapular area (Fig. 3). The altered position of the scapula is a result of the hypertonic, shortened part of the upper trapezius muscle, the levator scapulae muscle, and the clavicular and sternal parts of the pectoralis major muscle. This, together with the chin forward posture, is known as the *cervical paradox* or the *scalene paradox*.

In the interscapular area where it is possible to find instability there are preganglionic sympathetic nerve fibres from Th 3, Th 4, and Th 5 to the subclavian artery. Constriction of the subclavian artery will be reported by the patient as a feeling of cotton wool in the hands and fingers, or the fingers may feel clumsy. Ischaemic pain can be felt in the arm, and if the vertebral artery is involved tinnitus in the ear may be present.

The Cervical Paradox can also cause such different symptoms as headache, eye problems, temporo-mandibular joint problems, ear problems, and altered respiration.

The temporo-mandibular joint and the upper cervical region is one

unit which functions together in both voluntary activity and reflex activity (Fig. 4a). Therefore, it is possible for this region to be the site of biomechanical and reflex changes.

The forward chin, extension of the cervical spine, will increase the distance between the teeth. In order to avoid an open mouth, the patient will clench the teeth, and this demands activity in the deep neck muscles in order to give fixation for the muscles of occlusion (Fig. 4a). This will cause further extension of the head. The proprioceptors in the structures around the teeth, in the muscles and in the joints, have a low threshold. To protect the teeth, the patient will activate the mouth-opening muscles, the suprahyoid muscles, and these muscles cannot work without fixation, so the infrahyoid muscles have to come into function (Fig. 4b).

In the hyperextension of the head, the scalene muscles, together with the sternocleidomastoid muscles, work synergistically with the short extensor muscles of the neck. If the sternocleidomastoid muscle functions in a plane behind the normal axis of flexion and extension of the joint between the occiput and the atlas – the entire posture, with chin forward, can be fixed (Fig. 4c).

The muscular imbalance in the local area with chin forward may be a result of poor posture in any unbalanced position in standing or sitting (i.e. not sitting on the ischial tuberosities). There may be a tendency to increase the upper cervical lordosis and the situation will provoke chin forward.

The sternocleidomastoid muscle controls the posture of the head, and

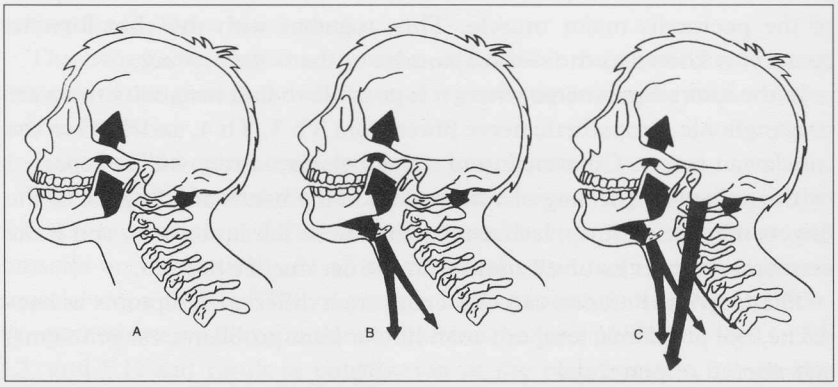

Fig. 4 a, b and c. *The sequence of the cervical paradox.*

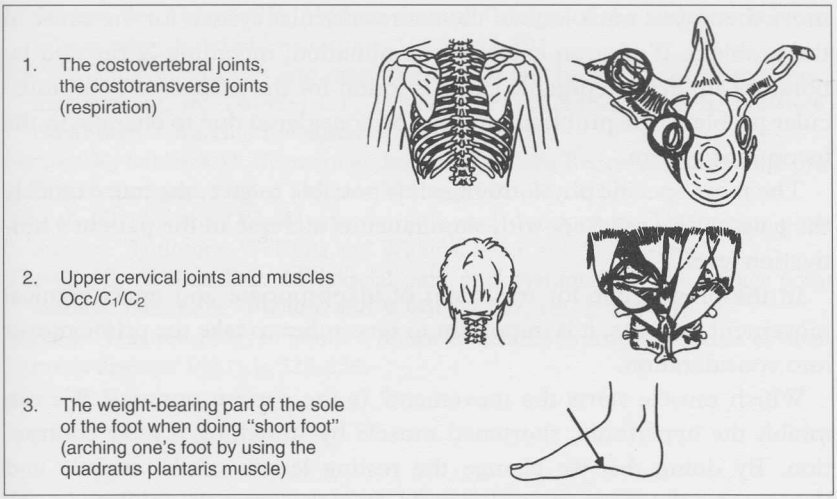

Fig. 5. *The main areas for evoking a perfect afferent input from the locomotor system.*

the synergy with which it works is much more important than its tightness and hypertonicity. Normally it works in synergy with the prevertebral muscles. The patient suffers a diffuse burning sensation in the upper extremities, one or both, with or without tension headache.

Changed function in the upper cervical segments starts the well-known chain reactions described by Lewit. If during examination you find tight hypertonic muscles of occlusion and suprahyoid muscles, the sternocleidomastoid muscle, the deep neck extensors, the upper trapezius, the levator scapulae, the scalenes, and the longus colli muscles, as well as pectoral major muscle, the clavicular and sternal parts, and you can elicit tenderness by palpation, then you might expect dysfunction in the temporo-mandibular joints, upper cervical joints, the cervico-thoracic junction, and the two uppermost ribs. The dysfunction may spread further distally, and it may start in the low back area.

Treatment

In patients with pain, for whom no other positive finding can be demonstrated by X-rays or laboratory studies, AKINESIA is the most important clinical finding. Inelasticity, tightness and weakness – in other words, changed function is the cause of the patient's pain.

If the joints can be passively moved, but the patient cannot actively

move them, you must look to the neuromuscular system for the cause of the problem. If after an extensive examination, including X-ray and laboratory studies, no organic cause is found for the suspected neuromuscular problem, the problem can then be considered due to changes in the locomotor system.

The more specific physiotherapy it is possible to give, the more quickly the pain will be relieved, with simultaneous increase in the patient's motivation level.

In the programme for treatment of inappropriate and uneconomical movement patterns, it is important to remember to take the prime mover into consideration.

Which muscle starts the movement? Is the pattern optimal? We can inhibit the hypertonic, shortened muscle by stretching it after contraction. By doing this we change the resting length of the muscle and thereby also the innervation threshold. In many cases the inhibited weak muscle will improve immediately or after a few stretching treatments; otherwise you will have to begin a specific exercise programme.

The treatment goal is to obtain the best possible muscular balance, the most appropriate movement patterns.

A facilitation programme of as many proprioceptors as possible serves this goal in the best way.

An afferent training programme is very ideal for improving the stability of the whole body (Fig. 5).

It is only when correct movement patterns have been achieved that you can begin more advanced training.

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Case Story

By Karen Prip

One year ago a 35 year old man from the Middle East started treatment at The Rehabilitation Centre for Torture Survivors (RCT).

Two years earlier he came to Denmark through a Red Cross camp and was referred to RCT through his General Practitioner.

He was the leader of a student organisation while he was studying at the university, and he was active in politics when he was arrested.

One night he was pulled out of bed by the police and blindfolded. His hands and feet were tied together. He was taken away to a remote place and thrown on the floor in a small dark cell. He was isolated for 8 days and he had very little to eat and drink. The food was stale and dirty. He was permitted to go to the toilet morning and night, but he was denied any further personal hygiene.

Tied up on the floor he was beaten and kicked. He could not see where the blows came from as he had a hood pulled over his head.

At other times he was suspended by the arms – naked – and beaten, pushed and pulled i all directions by policemen.

Several times both of his legs were tied together and raised. He was then beaten on the soles of his feet with an iron rod. (Falanga torture)

The torture continued at intervals over a period of 1 year. With the help from friends he escaped from prison and succeeded in getting away to another country.

The subjective examination

- Constant headache and pain in the neck and shoulder region with projection to both arms. A feeling of heaviness, and reduced muscle power. Prinkling paraestesia in all fingers.
- Occasional pain in both wrists and forearms which causes lack of function. Is unable to do easy physical work of lifts. The pain in the wrists has been treated with injections by General Practitioner with no relief.
- Low back pain, localized in the thoraco lumbar and low lumbar re-

gion. There is pain projection to both the lower limbs and a feeling of heaviness in both lower legs with diffuse prinkling paraestesia. The pain and paraestesia get worse in prolonged sitting, standing and walking. The back pain causes inability to do even easy physical activities.

- Pain in both soles of the feet, which gets worse when walking or standing. Walking is difficult and painful. Must stop at intervals. There is an uncomfortable burning sensation in both soles of the feet. This sensation has diminished the last few months.
- The respiration is fast, high costal and superficial. Psychological stress or a feeling of anxiety elicits pain in the chest.

The objective examination
(see appendix 2)

Treatment
Building up of mutual confidence, adaptation to be touched and have body contact was the first step and the entrance to begin actual treatment.

A variety of physiotherapy methods was applied to relieve pain and improve function, all in accordance with the findings on the physiotherapy assessment.

As a preliminary treatment gentle effleurage was given to painful areas. The purpose was to help the client to accept being touched, to reduce pain and to relax the muscles. Soft tissue treatment played a major role in the overall treatment since there were large amounts of adhesive connective tissue within and between the musculoskeletal structures. The scar tissue gave rise to dysfunction due to tightness and pain. Other methods were introduced such as pain relieving massage, softening of tight fibrous tissues, stretching of tight muscles and connective tissue, proprioceptive stimulation and mobilization of stiff joints. As the client had developed a stooping posture, re-education of posture in sitting and standing was introduced later in the course.

Special attention was directed to his respiratory pattern which was sensitive to his psychological state of mind. Respiratory relaxation and re-education techniques were applied combined with other physiotherapy methods.

The treatment of falanga symptoms consisted of softening massage to the maltreated tissues of the soles of the feet, mobilisation of fixated

joints, loosening of the fascia and stabilisation of the unstable joints in the feet and the calves. Parallel to this training of muscle balance and proprieception exercises was introduced.

His condition improved by training on a bicycle. When supplied with shoes with shock absorbing soles, he was able to walk longer distances with less pain.

In one of the last treatment sessions he said:
"When I came to Denmark I did not believe in anyone. I did not dare to go out and felt like being in prison in my room. I did not sense the world around me – I was closed up in myself. I was very afraid of being touched and could not see any future for myself. I felt so weak."

Nine months later after having received treatment by the multidisciplinary team at RCT:
"I sense now that the winter is over and the spring is coming. I notice that the flowers are beginning to come out. I hear the birds singing, just like in my own country. I know now what I want."

Declarations (exerpts)

United Nations Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment

Resolution 39/46 adopted by the General Assembly on 10 December 1984, entering into force in 1987.

Article 1:

1. For the purposes of this Convention, the term "torture" means any act by which severe pain or suffering, whether physical or mental is intentionally inflicted on a person for such purposes as obtaining from him or a third person information or a confession, punishing him for an act he or a third person has committed or is suspected of having committed, or intimidating or coercing him or a third person, or for any reason based on discrimination of any kind, when such pain or suffering is inflicted by or at the instigation of or with the consent or acquiescence of a public official or other person acting in an official capacity. It does not include pain or suffering arising only from, inherent in or incidental to lawful sanctions.

Article 2:

2. No exceptional circumstances whatsoever, whether a state of war or a threat of war, internal political instability or any other public emergency, may be invoked as a justification of torture.

Article 10:

1. Each State Party shall ensure that education and information regarding the prohibition against torture are fully included in the training of law enforcement personnel, civil or military, medical personnel, public officials and other persons who may be involved in the custody, interrogation or treatment of any individual subjected to any form of arrest, detention or imprisonment.

Article 14:

1. Each State Party shall ensure in its legal system that the victim of an act of torture obtains redress and has an enforceable right to fair and adequate compensation, including the means for as full rehabilitation as possible. In the event of the death of the victim as a result of an act of torture, his dependants shall be entitled to compensation.

Council of Europe:

European Convention for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment

Adopted November 1987, entering into force February 1989.

Article 1:

There shall be established a European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (hereinafter referred to as the Committee). The Committee shall, by means of visits, examine the treatment of persons deprived of their liberty with a view to strengthening, if necessary, the protection of such persons from torture and from inhuman or degrading treatment or punishment.

Declaration for Physiotherapists:

Guidelines concerning Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment

Adopted by the World Confederation for Physical Therapy at the 11th International WCPT Congress in London, July 27-28 1991.

1. The physiotherapist shall not countenance, condone or participate in the practice of torture or cruel, inhuman or degrading procedures, whatever the offence of which the victim of such procedures is suspected, accused or guilty and whatever the victim's beliefs or motives, and in all situations, including armed conflict and civil strife.

2. The physiotherapist shall not provide any premises, instruments, substances or knowledge to facilitate the practice of torture or other forms of cruel, inhuman or degrading treatment or to diminish the ability of the victim to resist such treatment.

3. The physiotherapist shall not be present during any procedure during which torture or other forms of cruel, inhuman or degrading treatment are used or threatened.

4. The physiotherapist's fundamental role is alleviating distress of his or her fellow men, and no motive whether personal, collective or political shall prevail against this higher purpose.

5. The World Confederation for Physical Therapy will support and should encourage the international community, the national physiotherapists' associations and fellow physiotherapists to support the physiotherapist and the physiotherapist's family in the face of threats or reprisals resulting from a refusal to condone the use of torture or other forms of cruel, inhuman or degrading treatment.

6. It is appropriate that education and information regarding the prevention and prohibition of torture and other cruel, inhuman or degrading treatment or punishment should be included in the undergraduate and postgraduate training of physiotherapists.

Assessment by the Physiotherapist

Borgergade 13
DK-1300 Copenhagen K
Denmark

Date:

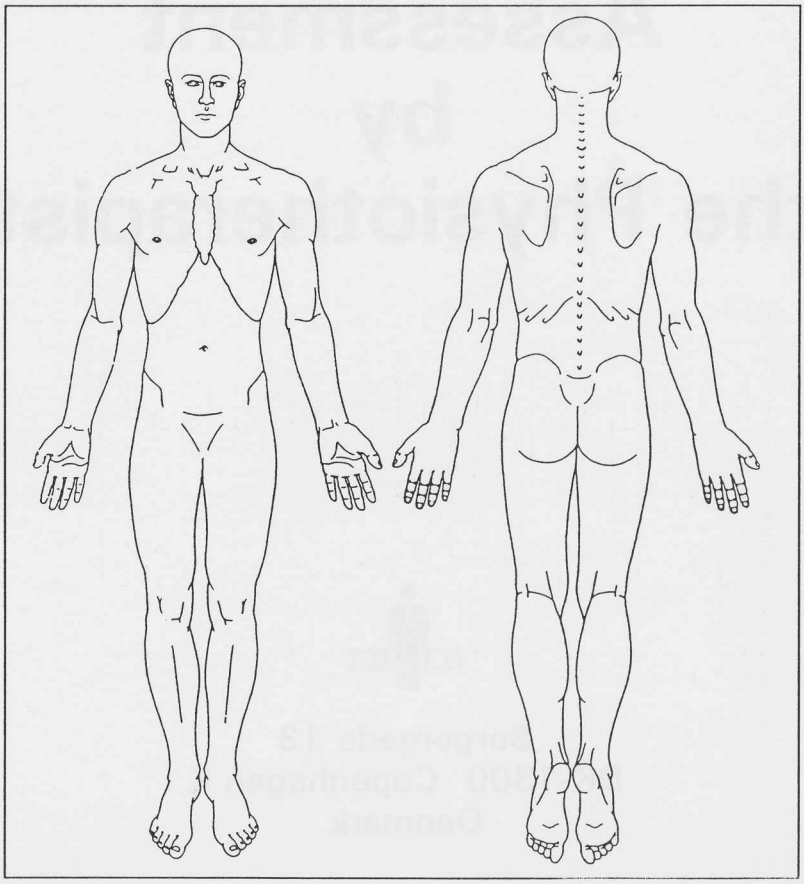
Name:
Nationality:
Date of Birth:

SITES OF PAIN AND PARAESTHESIAE

SUBJECTIVE EXAMINATION

In cooperation with the client the physiotherapist plots pain and paraesthesiae.

Pain Pattern



Pain: /// Paraesthesiae: :::

Date:

Description of Low Back Pain

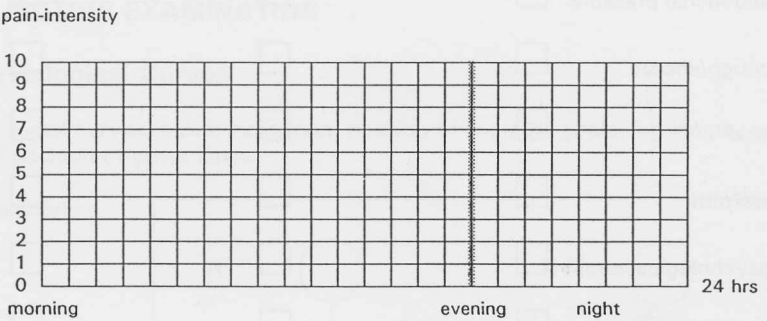
This part is filled in by the physiotherapist in order to describe the client's low back pain.

1. Is the pain:

constant ☐	periodic ☐	occasional ☐
No painless periods	*One or more days with pain during the week*	*Pain less frequent than once a week*

2. Is there variation in the pain intensity:

worse morning ☐	worse afternoon ☐
worse evening ☐	worse night ☐
no variation ☐	sleep disturbances due to pain ☐



Variation of pain during 24 hours. Pain intensity is plotted as a function of time to visualize the pain variation during 24 hours.

Date:

3. Influence of the following activities on low back pain

	less pain	no influence	worse pain
rest	☐	☐	☐
movement	☐	☐	☐
lying down	☐	☐	☐
sitting	☐	☐	☐
standing	☐	☐	☐
sustained flexion	☐	☐	☐
lifting	☐	☐	☐
walking	☐	☐	☐
abdominal pressure	☐	☐	☐
cough/sneeze	☐	☐	☐
cold	☐	☐	☐
warmth	☐	☐	☐
psychological stress	☐	☐	☐
other	☐	☐	☐

Influence of daily living on the pain intensity.

Date:

4. Visual Analog Scale

no pain	1	2	3	4	5	6	7	8	9	10	unbearable pain

The Visual Analog Scale indicates the pain intensity on examination.

Methods of Torture

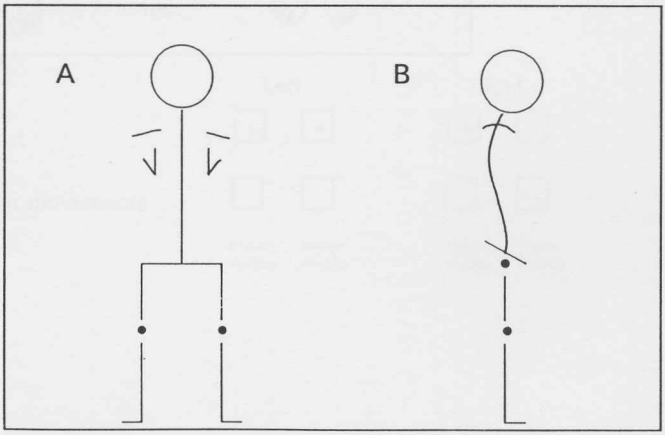
List here the methods of torture applied, physical as well as psychological.

OBJECTIVE EXAMINATION

Physiological Curves

Plot spinal curves, pelvic inclination, position of shoulder girdle, leg length, and joint position of lower limbs.

Inspection



Date:

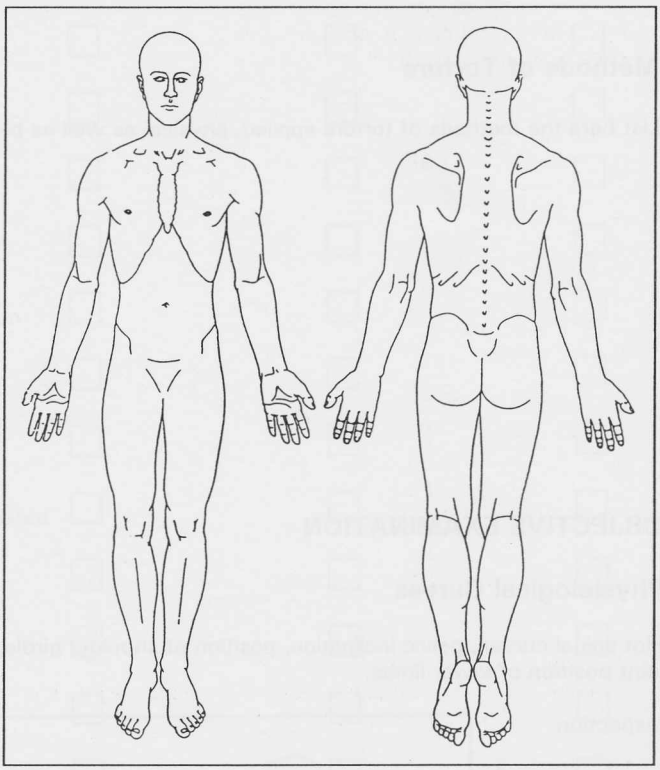
Muscular Pattern

Plot areas of muscle hyper- and hypotony and mark whether there is or is not a Layer Syndrome (cf article on The Layer Syndrome by V. Janda).

Inspection/palpation

Hypertony: ///
Hypotony: ≡

Layer Syndrome: + / ÷

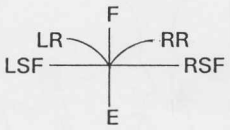


Date:

THE VERTEBRAL COLUMN AND SACROILIAC JOINTS

Active/Passive Movement

A. Here you plot range of movement in the cervical, thoracic and lumbar spine. Indicate if normal, decreased, very decreased or hyper-mobile with the shown symbols on the figures.



F = Flexion
E = Extension
LR = Left Rotation
RR = Right Rotation
LSF = Left Side Flexion
RSF = Right Side Flexion

Symbols:
✓ normal
– decreased
= very decreased
~ hypermobile

cervical spine: 

thoracic spine: 

lumbar spine: 

B. Piedallus test is performed. Indicate positive or negative. Hyper- or hypomobility is noted.

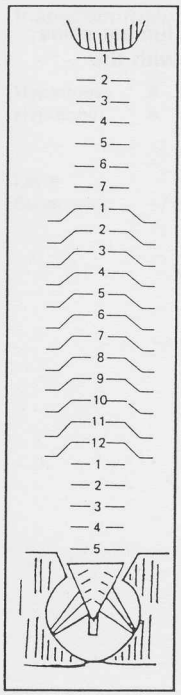
Sacroiliac joints

	Left		Right	
piedallus test	+	÷	+	÷
specific joint movements	☐	☐	☐	☐
	Hyper-mobile	Hypo-mobile	Hyper-mobile	Hypo-mobile

Date:

Specific Passive Movement Test

Here you perform a springing test of each movement segment and register if there is hypo- og hypermobility and pain. Use symbols as indicated.



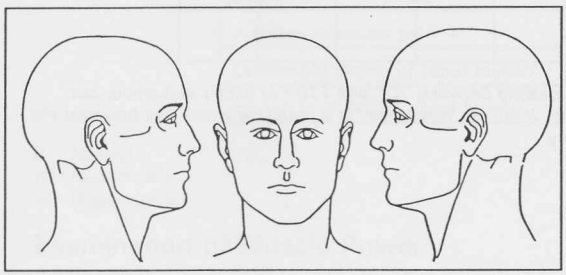
Palpation Findings	
Hypomobile segment	X
Hypermobile segment	~
Pain	●

Date:

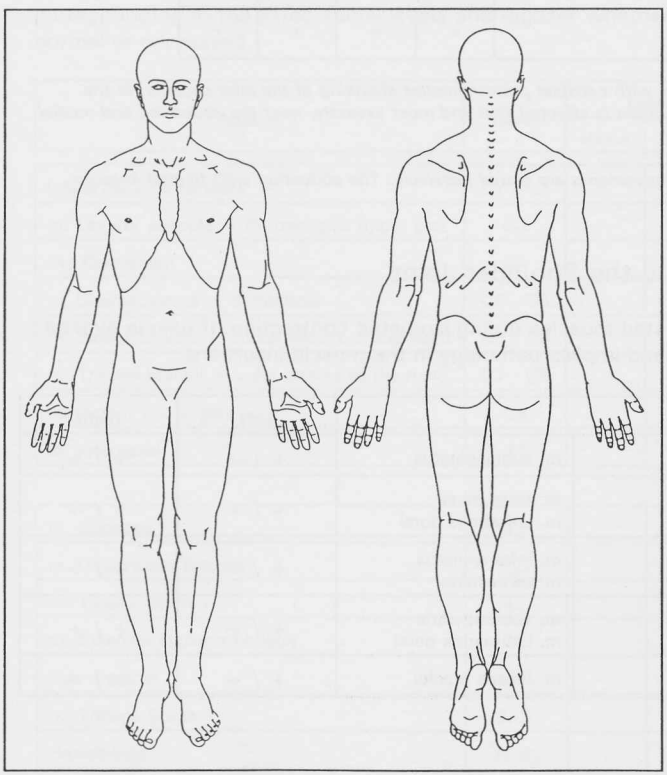
MUSCLE PALPATION AND REGISTRATION OF TENDER POINTS

Here you palpate the muscles listed and plot the tender points on the figures.

Tender point: ●



1) m. temporalis
2) m. masseter
3) m. sternocleidomastoideus



1) m. splenius capitis
2) mm. scalenii
3) m. levator scapula
4) m. trapezius
5) m. rhomboideus
6) m. supraspinatus
7) m. infraspinatus
8) m. erector spinae
9) m. quadratus lumborum
10) m. gluteus medius
11) m. gluteus maximus
12) m. piriformis
13) m. pectoralis major

Date:

The Shoulder

Here you examine the function of the shoulder and accessory joints.

Active Movement

	Left		Right	
Painful arch	+	÷	+	÷

Painful arch is described as pain appearing between 70° and 110° of active abduction, but must cease on each side of the arch. It implies tenderness in a structure which lies between the acromion and the humeral tuberosity.

Passive Movement

	Left		Right	
Capsular pattern	+	÷	+	÷

Limitation of movement with capsular pattern implies shrinking of the joint capsule. In the shoulder joint lateral rotation is affected first and most severely, next the abduction and medial rotation.

The above-mentioned movements are tested passively. The abduction with fixated scapular.

Tendinitis around the Shoulder Joint

Here you test the listed muscles during isometric contraction. If pain is evoked the test is positive and implies pathology in the muscle insertions.

		Left	Right
Abduction	m. supraspinatus	+ / ÷	+ / ÷
Adduction	m. teres minor m. latissimus dorsi	+ / ÷	+ / ÷
Lateral rotation	m. infra spinatus m. teres minor	+ / ÷	+ / ÷
Medial rotation	m. subscapularis m. Latissimus dorsi	+ / ÷	+ / ÷
Flexion	m. Biceps brachii	+ / ÷	+ / ÷

Date:

Joint test

Here you test the passive gliding movement of the listed joints and note whether they are normal, hypomobile or hypermobile.

	Left	Right
Sterno clavicular joint		
Acromio clavicular joint		
Downward gliding of caput humeri		
Posteri or gliding of caput humeri		

✓ Normal
X Hypomobile
~ Hypermobile

Examination of Muscle Power

Here you test the muscle power of the listed identification muscles corresponding to the listed spinal levels and register whether muscle power is normal or decreased.

Muscle	Level	Left		Right	
		Normal	Decr.	Normal	Decr.
Upper cervical rotators	C1 - C2				
m. Levator scapula + m. trapezius upper part	C3				
the Diaphragm	C4				
m. Supraspinatus + deltoideus	C5 - C6				
m. Biceps brachii + dorsal flexors of the hand	C5 - C6				
m. Triceps brachii + volar flexors of the hand	C7 - C8				
Flexors of the fingers	C8				
m. Interossei	T1				
m. Iliopsoas	L_2				
m. Quadriceps femoris	L_{3-4}				
m. Tibialis anterior	L_4				
m. Extensor Hallucis Longus	L_6				
mm. Peronei	L_6-S_1				
m. Triceps Surae	S_1-S_2				
Hamstrings	S_1-S_2				

Date:

Respiration

Here you register the quality of respiration by inspection and measure the excursion of the thorax.

	High costal	Abdominal	Reciprocal	Normal
Standing				
Lying				
Excursion of thorax:	cm (measured round the 4th intercostal space)			
Rhythm:	Fast / Slow Even / Uneven			

Examination
Falanga

Here you examine the feet for pathological changes after falanga torture. The examination technique is described in details by Grethe Skylv in the article "Falanga - diagnosis and treatment of late sequelae".

	Left		Right	
	Yes	No	Yes	No
Punctured heel pads				
Punctured med. forefoot pad				
Punctured lat. forefoot pad				
Tenderness of fascia plantaris				
Detachment of the skin of the soles				

Date:

Condition

_____

_____

_____

_____

Aid devices

_____

_____

_____

_____

Other

_____

_____

_____

_____

Assessment by the Physiotherapist

Borgergade 13
DK-1300 Copenhagen K
Denmark

Date: ✗

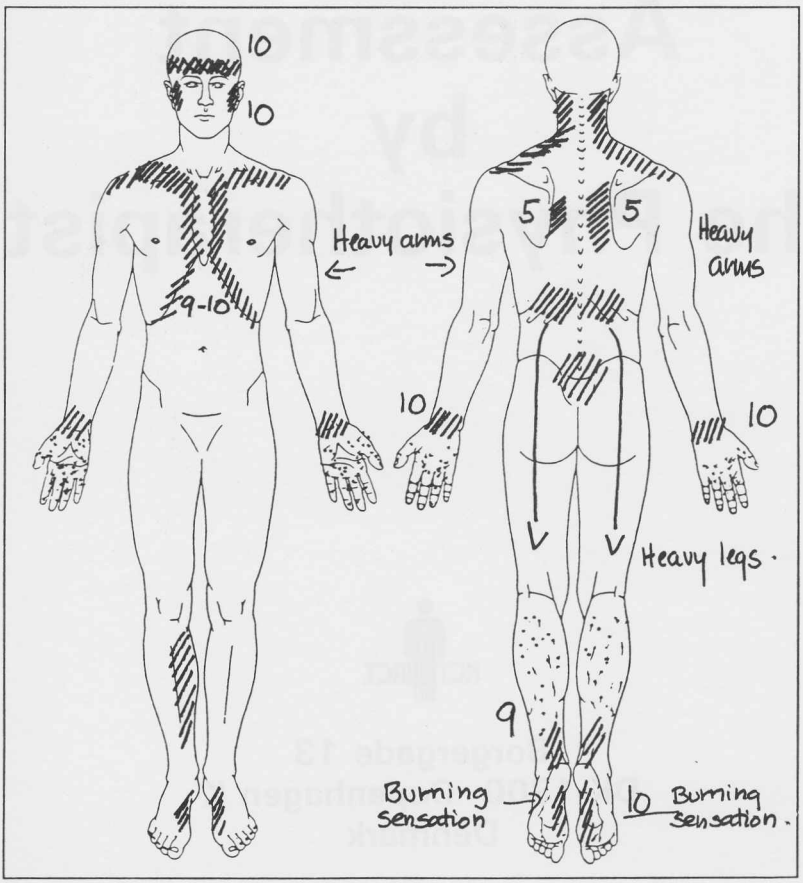
Name: ✗
Nationality: ✗
Date of Birth: ✗

SITES OF PAIN AND PARAESTHESIAE

SUBJECTIVE EXAMINATION

In cooperation with the client the physiotherapist plots pain and paraesthesiae.

Pain Pattern



Pain: /// Paraesthesiae: ⁞⁞⁞

Appendix 2-II

Date:

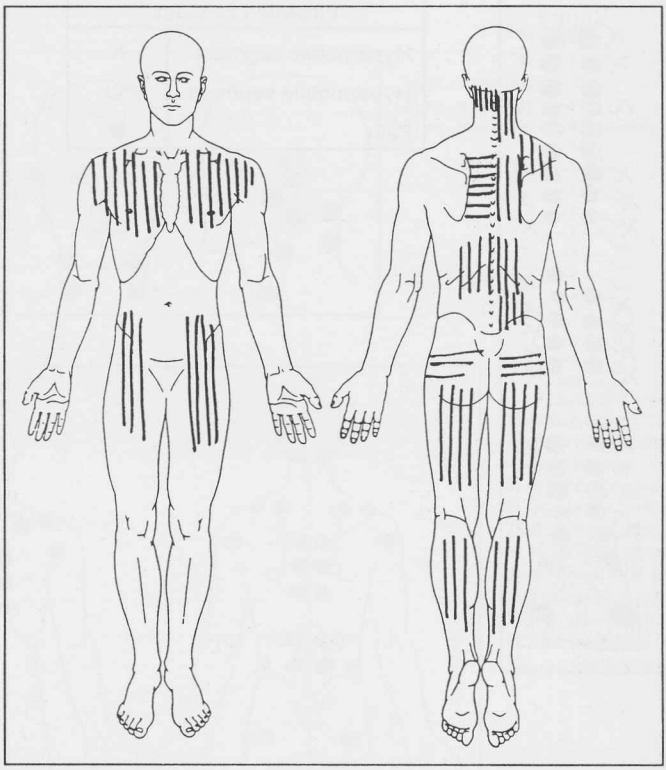
Muscular Pattern

Plot areas of muscle hyper- and hypotony and mark whether there is or is not a Layer Syndrome (cf article on The Layer Syndrome by V. Janda).

Inspection/palpation

Hypertony: ///
Hypotony: ≡

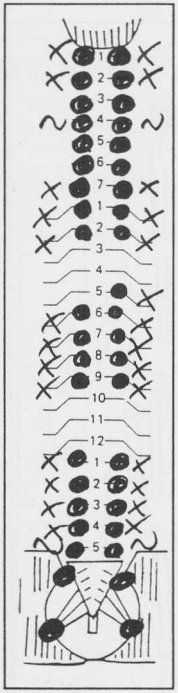
Layer Syndrome: + (+)



Date:

Specific Passive Movement Test

Here you perform a springing test of each movement segment and register if there is hypo- og hypermobility and pain. Use symbols as indicated.



Palpation Findings	
Hypomobile segment	X
Hypermobile segment	~
Pain	●

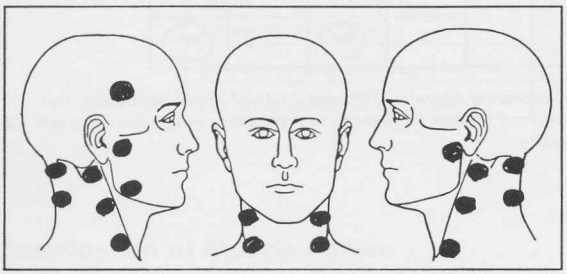
Date:

RCT IRCT

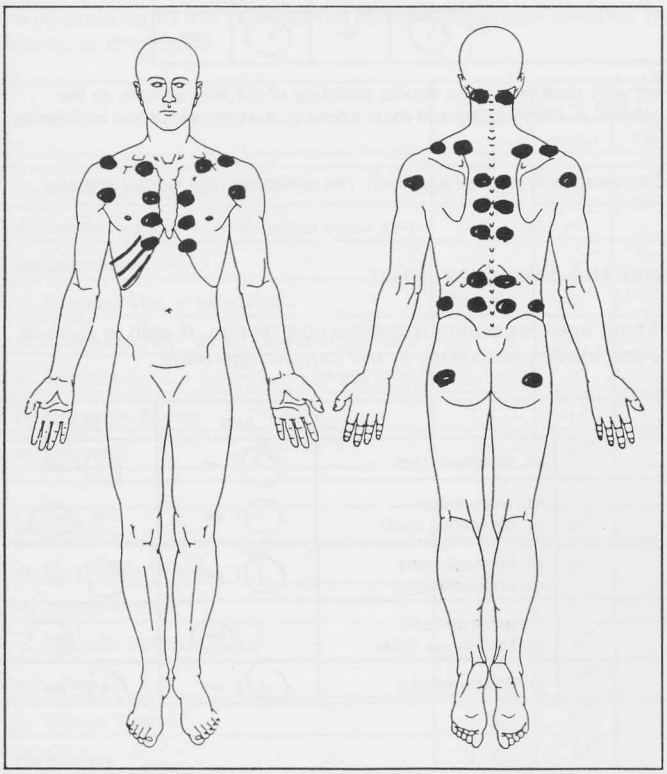
MUSCLE PALPATION AND REGISTRATION OF TENDER POINTS

Here you palpate the muscles listed and plot the tender points on the figures.

Tender point: ●



1) m. temporalis ✓
2) m. masseter ✓
3) m. sternocleidomastoideus ✓



1) m. splenius capitis ✓
2) mm. scalenii ✓
3) m. levator scapula ✓
4) m. trapezius ✓
5) m. rhomboideus ✓
6) m. supraspinatus ✓
7) m. infraspinatus ✓
8) m. erector spinae ✓
9) m. quadratus lumborum
10) m. gluteus medius ✓
11) m. gluteus maximus
12) m. piriformis ✓
13) m. pectoralis major ✓

Date:

The Shoulder

Here you examine the function of the shoulder and accessory joints.

Active Movement

	Left		Right	
Painful arch	+	(−)	+	(−)

Painful arch is described as pain appearing between 70° and 110° of active abduction, but must cease on each side of the arch. It implies tenderness in a structure which lies between the acromion and the humeral tuberosity.

Passive Movement

	Left		Right	
Capsular pattern	(+)	−	(+)	−

Limitation of movement with capsular pattern implies shrinking of the joint capsule. In the shoulder joint lateral rotation is affected first and most severely, next the abduction and medial rotation.

The above-mentioned movements are tested passively. The abduction with fixated scapular.

Tendinitis around the Shoulder Joint

Here you test the listed muscles during isometric contraction. If pain is evoked the test is positive and implies pathology in the muscle insertions.

		Left	Right
Abduction	m. supraspinatus	(+) / −	(+) / −
Adduction	m. teres minor m. latissimus dorsi	(+) / −	+ / (−)
Lateral rotation	m. infra spinatus m. teres minor	(+) / −	(+) / −
Medial rotation	m. subscapularis m. Latissimus dorsi	+ / (−)	+ / (−)
Flexion	m. Biceps brachii	(+) / −	(+) / −

Date:

Joint test

Here you test the passive gliding movement of the listed joints and note whether they are normal, hypomobile or hypermobile.

✓ Normal
X Hypomobile
~ Hypermobile

	Left	Right
Sterno clavicular joint	✓	✓
Acromio clavicular joint	~	~
Downward gliding of caput humeri	~	~
Posteri or gliding of caput humeri	✓	✓

Examination of Muscle Power

Here you test the muscle power of the listed identification muscles corresponding to the listed spinal levels and register whether muscle power is normal or decreased.

Muscle	Level	Left		Right	
		Normal	Decr.	Normal	Decr.
Upper cervical rotators	C1 - C2	✓		✓	
m. Levator scapula + m. trapezius upper part	C3	✓		✓	
the Diaphragm	C4	✓		✓	
m. Supraspinatus + deltoideus	C5 - C6	✓		✓	
m. Biceps brachii + dorsal flexors of the hand	C5 - C6	✓		✓	
m. Triceps brachii + volar flexors of the hand	C7 - C8	✓		✓	
Flexors of the fingers	C8	✓		✓	
m. Interossei	T1	✓		✓	
m. Iliopsoas	L_2	✓		✓	
m. Quadriceps femoris	L_{3-4}	✓		✓	
m. Tibialis anterior	L_4	✓		✓	
m. Extensor Hallucis Longus	L_5	✓		✓	
mm. Peronei	L_5-S_1	✓		✓	
m. Triceps Surae	S_1-S_2	✓		✓	
Hamstrings	S_1-S_2	✓		✓	

Date:

Respiration

Here you register the quality of respiration by inspection and measure the excursion of the thorax.

	High costal	Abdominal	Reciprocal	Normal
Standing	X			
Lying	X			
Excursion of thorax:	2 cm (measured round the 4th intercostal space)			
Rhythm:	Fast / Slow Even / (Uneven) - Superficial			

Examination
Falanga

Here you examine the feet for pathological changes after falanga torture. The examination technique is described in details by Grethe Skylv in the article "Falanga - diagnosis and treatment of late sequelae".

	Left		Right	
	Yes	No	Yes	No
Punctured heel pads	X		X	
Punctured med. forefoot pad	X		X	
Punctured lat. forefoot pad	X		X	
Tenderness of fascia plantaris	X		X	
Detachment of the skin of the soles	X		X	