Documentação de tortura - efeitos tardios
Assessment of torture survivors

**REHABILITATION**
- **Objective:**
  to identify targets for intervention that may produce maximum improvement

**DOCUMENTATION**
- **Objective:**
  to document findings consistent with allegation of torture
Manual on the Effective Investigation and Documentation of Torture and other Cruel, Inhuman or Degrading Treatment or Punishment (the Istanbul Protocol), drafted in 1999.

国际指南用于记录酷刑及其后果。伊斯坦布尔协议提供了一套用于评估声称遭受酷刑和虐待的人的指南，用于调查涉嫌酷刑的案件，并报告发现给司法机关和任何其他调查机构。
Medical documentation of alleged exposure to torture is based on the reporting of the degree of consistency between:

1) the torture history

2) symptoms as described by the victim and

3) possible findings at medical examination
## Physical torture methods

<table>
<thead>
<tr>
<th>Beatings</th>
<th>Positional torture</th>
<th>Asphyxiation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Random</td>
<td>Strapping</td>
<td>‘Dry’</td>
</tr>
<tr>
<td>Systematic</td>
<td>Suspension</td>
<td>‘Wet’</td>
</tr>
<tr>
<td>Falanga</td>
<td>Forced positions</td>
<td>‘Electrical torture’</td>
</tr>
<tr>
<td>Telephono</td>
<td></td>
<td>‘Sexual torture’</td>
</tr>
<tr>
<td>Beating of palms</td>
<td></td>
<td>‘Burning, corrosion’</td>
</tr>
<tr>
<td>Beating at kidney regions</td>
<td></td>
<td>‘Pharmacological torture’</td>
</tr>
<tr>
<td>Head trauma</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Beatings
- Positional torture
- Asphyxiation

- Falanga
- Telephono
- Beating of palms
- Beating at kidney regions
- Head trauma
- Electric torture
- Sexual torture
- Burning, corrosion
- Pharmacological torture
Physical complaints

![Bar graph showing physical complaints with RCT n=51 and E. Edston n=200.]

Läkartidningen 96, 628-631. 1999
Long-term consequences –
the musculoskeletal system

Pain in the musculoskeletal system is the
dominating physical symptom

- regional or widespread muscular pain
- joint pain and joint dysfunction
- pain related to the spine and pelvic girdle
- neurological symptoms (irradiating pain & sensory disturbances)
- headache
- reduced level of physical functioning

Few systematic studies

Aetiology & pathogenesis ???
Reported objective findings are unspecific and likewise related to the musculoskeletal system

- increased muscle tone in postural muscles
- tender and trigger points
- tendonitis
- reduced range of movement in the spine and peripheral joints
- soft tissue changes in feet and impaired gait
- sensory disturbances (rarely motor deficits)
- fractures (ribs and limbs - reported prevalence: 4-27%)
### Long-term consequences – the musculoskeletal system

<table>
<thead>
<tr>
<th>Pain location</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>48.4</td>
</tr>
<tr>
<td>Neck and shoulder girdle</td>
<td>35.5</td>
</tr>
<tr>
<td>Low back</td>
<td>74.2</td>
</tr>
<tr>
<td>Upper ext. incl. joints</td>
<td>51.6</td>
</tr>
<tr>
<td>Thorax and thoracic spine</td>
<td>12.9</td>
</tr>
<tr>
<td>Lower ext. incl. joints</td>
<td>67.3</td>
</tr>
<tr>
<td>Feet</td>
<td>32.2</td>
</tr>
<tr>
<td>3 or more regions</td>
<td>77.4</td>
</tr>
</tbody>
</table>

31 clients examined at RCT in 2000/2001
Long-term consequences – the musculoskeletal system

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Time in prison (days)</th>
<th>Time since torture (years)</th>
<th>Pain VAS (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>37.6</td>
<td>621.5</td>
<td>10.0</td>
<td>7.6</td>
</tr>
<tr>
<td>SD</td>
<td>5.64</td>
<td>917.73</td>
<td>5.49</td>
<td>1.58</td>
</tr>
<tr>
<td>Min.</td>
<td>27</td>
<td>1</td>
<td>1</td>
<td>4.1</td>
</tr>
<tr>
<td>Max.</td>
<td>52</td>
<td>4015</td>
<td>21</td>
<td>10</td>
</tr>
</tbody>
</table>

N = 31 clients; F = 6  M = 25
Pain mechanisms

Nociceptive pain

1. Lesions inflicted by the torture
2. Strain secondary to overload and disuse

Neuropathic pain

- Falanga – peripheral neuropathy
- Suspension – partial lesion of the brachial/lumbosacral nerve plexus
- Forced back loading positions - segmental radiating neuralgic pain
- Head trauma - Trigeminal neuralgia
- Strapping/shackling – peripheral neuropathy
- Electrical torture – CWP
Pain mechanisms

Central sensitization ???
Widespread pain
Widespread pain hypersensitivity
Somatosensory symptoms of neuropathic pain
Organ related symptoms indicating visceral hyperalgesia
Sleep disturbances
Cognitive dysfunction
Exercise intolerance

FMS
The prototype of centralised pain
Lesions inflicted by the torture

34 year, male from Iran seeking asylum in DK
Arrived in DK in 2009
Examined April 2011 for medico-legal purposes

Alleged exposure to torture during detention in 2007, illegal political activity

Unsystematic beatings with police batons
Beaten while suspended in the legs, strapped by the ankles, head down
Beaten while inserted in a care tire with maximum flexion in hip joints, including falanga
Forced position, “the cage”

Medical attention during torture, injections, possible morphine and corticosteroid
Lesions inflicted by the torture

Severe pain in lower back, hips and lower legs

Impaired walking, walking aids, wheel chair

X-ray of the hips at arrival to DK: bilateral avascular necrosis of the femoral head

Bilateral hip replacement
Avascular necrosis of the femoral head
Lesions inflicted by the torture

Femoral head necrosis - causes
Hip fracture and hip luxation
Excessive alcohol consume
Steroids
Metabolic diseases
Oncologic diseases
Infectious diseases

Casuistic in the literature
Work related long term suspension in the hips

Conclusion
Bilateral femoral head necrosis possibly caused by vascular trauma in relation to torture – supporting allegation of torture
The clinical picture

- Pain in the feet at rest
- Intensified pain in the feet during activity spreading up the lower legs
- Burning, stinging pain in the soles
- Sensory disturbances in the soles
- Impaired walking with short walking distance and abnormal gait pattern
- Poor balance
## Falanga – objective findings

<table>
<thead>
<tr>
<th>Objective finding</th>
<th>Right</th>
<th>Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced elasticity in heel pad</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>Thickened plantar fascia</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Soreness of fascia in sole</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Soreness of fascia at spring</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td>Reduced sensibility; light touch</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Reduced sensibility; blunt/sharp</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>Reduced thermal sensation</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Allodynia</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Dysaesthesia</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Scars</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

N = 27
closed compartment syndrome

nerve lesion and neuropathic pain

‘punctured’ heel pads

‘aponeurosisitis’
MRI of the plantare structures of the foot after falanga torture.
# Nerve lesion – clinical assessment

132 foot assessments, 66 torture survivors

<table>
<thead>
<tr>
<th>Sensory dysfunction</th>
<th>Stimulus independent pain n feet=50 (%)</th>
<th>Stimulus dependent pain n feet=61 (%)</th>
<th>No pain n feet=21 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reported sensory disturbances</td>
<td>39 (78)</td>
<td>50 (82)</td>
<td>7 (33)</td>
</tr>
<tr>
<td>Reduced light touch</td>
<td>27 (54)</td>
<td>33 (54)</td>
<td>9 (43)</td>
</tr>
<tr>
<td>Reduced thermal sensation</td>
<td>19 (38)</td>
<td>37 (61)</td>
<td>8 (38)</td>
</tr>
<tr>
<td>Tactile dysaesthesia</td>
<td>19 (38)</td>
<td>19 (31)</td>
<td>8 (38)</td>
</tr>
<tr>
<td>Allodynia</td>
<td>4 (8)</td>
<td>8 (13)</td>
<td>2 (10)</td>
</tr>
<tr>
<td>Tenderness</td>
<td>47 (94)</td>
<td>55 (90)</td>
<td>10 (48)</td>
</tr>
</tbody>
</table>

Prip K et al. Disability and Rehab. 2011; 33(7):569-578
Falanga

Validity of clinical examination
# Test parameters

Table 2. 5 persons with and 5 persons without reported falanga evaluated by 6 observers, by lesion: Test parameters, by number of observations.

<table>
<thead>
<tr>
<th>Test</th>
<th>Sensitivity %</th>
<th>Specificity %</th>
<th>Positive PV %</th>
<th>Negative PV %</th>
<th>Odds Ratio</th>
<th>[95% Confidence Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punctured heel pad</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right</td>
<td>73.3</td>
<td>56.7</td>
<td>62.1</td>
<td>68.0</td>
<td>3.60</td>
<td>[1.22 to 10.64]</td>
</tr>
<tr>
<td>Left</td>
<td>70.0</td>
<td>53.3</td>
<td>60.0</td>
<td>64.0</td>
<td>2.67</td>
<td>[0.92 to 7.70]</td>
</tr>
<tr>
<td>Punctured medial pad</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right</td>
<td>76.7</td>
<td>53.3</td>
<td>62.2</td>
<td>69.6</td>
<td>3.76</td>
<td>[1.24 to 11.39]</td>
</tr>
<tr>
<td>Left</td>
<td>83.3</td>
<td>50.0</td>
<td>62.2</td>
<td>75.0</td>
<td>5.00</td>
<td>[1.51 to 16.56]</td>
</tr>
<tr>
<td>Punctured lateral pad</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right</td>
<td>70.0</td>
<td>60.0</td>
<td>63.6</td>
<td>66.7</td>
<td>3.50</td>
<td>[1.20 to 10.20]</td>
</tr>
<tr>
<td>Left</td>
<td>73.3</td>
<td>56.7</td>
<td>62.8</td>
<td>68.0</td>
<td>3.60</td>
<td>[1.22 to 10.64]</td>
</tr>
<tr>
<td>Aponeurosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right</td>
<td>13.3</td>
<td>80.0</td>
<td>40.0</td>
<td>48.0</td>
<td>0.62</td>
<td>[0.15 to 2.45]</td>
</tr>
<tr>
<td>Left</td>
<td>10.0</td>
<td>80.0</td>
<td>33.3</td>
<td>47.1</td>
<td>0.44</td>
<td>[0.10 to 1.97]</td>
</tr>
</tbody>
</table>

1: 0.05 < p < 0.10
2: p < 0.05
3: p < 0.01
The Parker Institute, Frederiksberg Hospital & the Danish Technical University

Figure 1: Heel pad model.
Left: Mould for the heel pad model. Inside the cylinder (Cy), the plantar part of the plastic calcaneus (Ca) is mounted upside down on the pedestal (P). The pedestal is attached to the bottom plate. The double arrow indicates the skin-to-bone distance. The cylinder is closed by the top and bottom plates.
Right: The heel pad model has been taken out of the cylinder and is still attached to the bottom plate. It is opaque and the calcaneus cannot be seen.
Figure 2: Performance of the two investigators in the five trials.
Left: The bars show the percentage of correct answers for both investigators through trials one to five (with 95% CI). The bars marked total are the overall percent correct answers (with empirical 95% CI) for each assessor, based on the bootstrapped median and the 2.5th and 97.5th percentiles.
Right: The differences between trials were combined based on an empirical Bayes methodology and the amount of heterogeneity was evaluated on the basis of $I^2$. The data consistently show that the investigators perform better than chance only and that they agree.
Figure 3. Performance of the two investigators by elasticity.  
Left: The bars show the percentage of correct answers for both investigators by elasticities soft to hard (with 95% CI).  
Right: The differences between elasticities were combined based on an empirical Bayes methodology and the amount of heterogeneity was evaluated on the basis of $I^2$. The data consistently show that the investigators perform better with increasing hardness and that they agree.
Figure 4. Combined performance over elasticities and skin-to-bone distances. Left: The absolute number of correct answers for each elasticity is presented by skin-to-bone distance. Because of the agreement (figures 2 and 3), the results were pooled in order to evaluate this interaction. Right: The three coloured graphs present the three elasticities plotted against the skin-to-bone distance. Each elasticity has its own pattern as skin-to-bone distance varies. E.g. a superficial bone makes the model feel harder and vice versa for a deep bone. The horizontal line marked median is the overall percent correct answers (with empirical 95% CI) across assessors, based on the bootstrapped median and the 2.5\textsuperscript{th} and 97.5\textsuperscript{th} percentiles.
An accuracy of 66-67% correct answers classifying the elasticity of the heel pad model and a low inter-rater variability

An arbitrary cutoff for acceptable diagnostic accuracy is 70-80%, however very few clinical tests perform that well

A combination of tests would probably improve test results
Concluding remark

Medical documentation of torture is well established and should be based on the reporting of the degree of consistency between:

1) the torture history
2) acute and late symptoms and signs as described by the victim and
3) possible findings at medical examination

The degree of support should be indicated as:

1) Consistent with the alleged torture, high degree of support
2) Consistent with the alleged torture, moderate degree of support
3) Consistent with the alleged torture, slight degree of support
4) The changes cannot support the history of torture