Forensic medicine means, “relating to, used in, or connected with a court of law, i.e. the applied use of medical knowledge, especially pathology, to the purpose of the law”.
• 1. Identification of the animal/subject

• 2. External observations

• 3. A complete and correct necropsy

• 4. Registration and objective description of all observations (intra vitally or post-mortem)

• 5. Supplementary examinations

• 6. Interpretation of all information and observations => conclusion (diagnosis, cause and timing)
Forensic pathology
2004-2016

- Pig: 79%
- Dog, cat and rabbit: 6%
- Other species: 3%
- Horse: 4%
- Ruminants: 8%
Forensic pathology 2004-2016: number of animals

![Bar chart showing the number of animals examined over the years. The chart includes categories such as Horse, Pig, Ruminant, Dog, cat and rabbit, and Other species. The Pig category has the highest number of animals.]
Bruises 47%
Ulcerations 13%
Eczema 12%
Joint lesions 9%
Excessive use of tattoo hammer 6%
Emaciation (cachexia) 1%
Umbilical outpouchings 5%
Bone fractures 2%
Inflammation in other organs 3%
Overgrowth of hoof and teeth <1%
Other conditions 2%
Forensic porcine pathology: 2004-2016
Indføj "Sted og dato" i
<table>
<thead>
<tr>
<th>Pattern</th>
<th>Number of pigs (n=101)</th>
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<tbody>
<tr>
<td>Tramline</td>
<td>51 (50%)</td>
</tr>
<tr>
<td>Tattoo-hammer</td>
<td>21 (21%)</td>
</tr>
<tr>
<td>Paddle</td>
<td>8 (8%)</td>
</tr>
<tr>
<td>Double U profile</td>
<td>6 (6%)</td>
</tr>
<tr>
<td>Circle</td>
<td>3 (3%)</td>
</tr>
<tr>
<td>Chain</td>
<td>2 (2%)</td>
</tr>
<tr>
<td>Other</td>
<td>10 (10%)</td>
</tr>
</tbody>
</table>
Experimental bruises

Man

Mechanical device
Experimental bruises in pigs

References

Histology
Neutrophils in the subcutaneous tissue

![Graph showing the subcutaneous neutrophil score over time. The x-axis represents age (h), and the y-axis represents subcutaneous neutrophil score. The graph shows a peak around the 3rd hour, followed by fluctuations.]
Histology
PCA: mRNA expression in the subcutaneous fat

- High force
- 10 pigs with bruises aged from 1 to 10 h
- All genes
Forensic porcine pathology: 2004-2016

- Bruises: 47%
- Ulcerations: 13%
- Eczema: 12%
- Joint lesions: 9%
- Excessive use of tattoo hammer: 6%
- Emaciation (cachexia): 1%
- Umbilical outpouchings: 5%
- Bone fractures: 2%
- Inflammation in other organs: 3%
- Overgrowth of hoof and teeth: <1%
- Other conditions: 2%
Results

• Anatomical localization of ulcerations
Experimental wound, 12 h
Migration of epithelial cells
Experimental wound, 3 days
Proliferation of fibroblasts
Experimental wound, 4 days
Immature granulation tissue
Experimental wound, 8 days
Hemosiderophages
Experimental wound, 18 days
Complete epithelialization
Neutrophils and macrophages in experimental porcine wounds
<table>
<thead>
<tr>
<th>Wound age</th>
<th>Histological manifestations relevant for age determination</th>
<th>N : M ratio</th>
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<tbody>
<tr>
<td>1h</td>
<td>Clot</td>
<td>4:1</td>
</tr>
<tr>
<td>3h</td>
<td></td>
<td>4:1</td>
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<tr>
<td>6h</td>
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<td>3:1</td>
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<tr>
<td>12h</td>
<td>Migration of epithelial cells</td>
<td>3:1</td>
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<tr>
<td>1d</td>
<td></td>
<td>2:1</td>
</tr>
<tr>
<td>2d</td>
<td>Angiogenesis</td>
<td>2:1</td>
</tr>
<tr>
<td>3d</td>
<td>Plumb shaped fibroblasts</td>
<td>1:1</td>
</tr>
<tr>
<td>4d</td>
<td>Granulation tissue</td>
<td>1:1</td>
</tr>
<tr>
<td>5d</td>
<td></td>
<td>1:2</td>
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<tr>
<td>6d</td>
<td></td>
<td>1:1</td>
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<tr>
<td>7d</td>
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<tr>
<td>8d</td>
<td>Hemosiderophages</td>
<td>1:1</td>
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<tr>
<td>10d</td>
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<td>1:1</td>
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<tr>
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<tr>
<td>18d</td>
<td>Complete epithelialization</td>
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</tr>
<tr>
<td>27d</td>
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<td>-</td>
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<tr>
<td>35d</td>
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Thank you for your attention.