Strangulation Injuries

Dan Batsie
4.4 pounds
4.4 pounds closing pressure

11 pounds
11 pounds closing pressure

Loss of consciousness (10-20 seconds)
• Identifiable brain infarction each time a strangulation occurs.

• Repeated strangulation linked to stroke and Parkinson’s disease.

Continuum of Intimate Partner Violence

- Slap
- Punch
- Kicks
- Weapon Strangle
7x more likely to die

10% of all violent deaths in the US
25% of women killed by an intimate partner

Prevalence

We don’t really know...
− 39% report it to police
− 3% seek medical attention
35% had “injury too minor to photograph”
You’ve missed them
Acute and/or chronic MS change
Hyper or hypoactive delirium
Often confounded by substance abuse
Why do I care?
Arterial bleeding
Airway edema
Pneumonia
Pulmonary edema
Stroke
<table>
<thead>
<tr>
<th>Clinical Scenario</th>
<th>Recommended Imaging Modality</th>
<th>Alternative Imaging Modality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual strangulation with no loss of consciousness and no physical evidence of force to the neck</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Manual strangulation with no loss of consciousness but with voice changes</td>
<td>MRI with contrast</td>
<td>Fiberoptic laryngoscopy</td>
</tr>
<tr>
<td>Manual strangulation with loss of consciousness and/or physical evidence of force to the neck</td>
<td>MRI without contrast</td>
<td>CT with intravenous contrast</td>
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<tr>
<td>Incomplete near-hanging with intact consciousness and bilateral neurologic function</td>
<td>MRI without contrast</td>
<td>CT with intravenous contrast</td>
</tr>
<tr>
<td>Accidental strangulation with ligature caught in moving machinery but with intact consciousness and bilateral neurologic function</td>
<td>MRI without contrast</td>
<td>CT with intravenous contrast</td>
</tr>
<tr>
<td>Any form of strangulation with persistent unconsciousness</td>
<td>4-vessel cranial-cervical CT angiogram</td>
<td>MRI without contrast</td>
</tr>
<tr>
<td>Any form of strangulation with intact consciousness but with unilateral neurologic findings</td>
<td>4-vessel cranial-cervical CT angiogram</td>
<td>Doppler ultrasound of the carotid arteries or 4-vessel selective angiography</td>
</tr>
</tbody>
</table>

Strangulation indicators are rarely found during the primary assessment.
But there is a pattern.
What does the victim tell you?
50% exhibit voice changes
85% report dyspnea
Coughing

• Loss of consciousness
• Unexplained injuries
• Gaps in time line
Petechiae

Occurs with jugular venous occlusion
Can occur within 20-30 seconds

What can I do?
50% of officers were killed by a criminal with a history of strangulation assault.
Law Enforcement
Be a good EMT...
Be a good neighbor
National Domestic Violence Hotline:
- 1-800-799-7233
Rape, Abuse and Incest National Network (RAINN):
- 1-800-656-HOPE
Referrals

• Be yourself and know your limitations
• Use resources

There are organizations in the community that can help you?
• Free and confidential.
• 24-hour toll-free hotlines staffed by people who care.
Be a Good Witness
Thank You!
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4 of 42 women who had been strangled experienced miscarriage within 2 weeks of the event.
