Elder Abuse: Forensic Pathology Perspective

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VIFM
Medico-legal death investigation

Integration of:
Circumstantial information: police reports
Scene attendance/photographs
Medical history
Information provided by family
PM CT imaging
External examination
+/- Autopsy data
Results of ancillary testing

Information driven process:
Quality of outcome depends on quality of information provision
MLDI in Victoria: Preliminary examination

- Deceased admitted to mortuary
- Photographed, CT, blood sample
- Identification
- Pathologist review of information
- Meeting with Coroner
- Outcome (autopsy, inspection only)
External examination

- Documenting medical intervention
- Documenting injury
- Trace evidence sampling
- Clothing and property documentation
Internal examination

- Examination in situ (in the body) + microbiology samples
- Dissection of the organs on the bench in further detail
- Histology, toxicology samples taken
Ancillary investigations

Histology
Microbiology
Toxicology
Biochemistry
Radiology
Cytogenetics
Metabolic studies
Anthropology
Odontology
Entomology
Toxicology

Analysis of body tissues and fluids for drugs and poisons

- PRESENCE or ABSENCE of substances having physiological and or psychological effects
- Causing or contributing to death
- Drug interactions
Physical manifestations of elder abuse @ MLDI

1. Physical abuse
   - Bruises
   - Abrasions
   - Lacerations
   - Fractures
   - Restraint marks
   - Burns
   - Decubitus ulcers
   - Weight loss
   - Dehydration
   - Anogenital injuries

2. (Sexual abuse)

3. Neglect
   - Self neglect
   - Neglect by care giver
     - With holding treatment/access to treatment/medications
     - Hygiene
     - Malnutrition and dehydration
       - Active neglect
       - Passive neglect
Table 1. Physical Findings Worrisome for Inflicted Trauma

<table>
<thead>
<tr>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contusions</td>
</tr>
<tr>
<td>Inner arms, inner thighs</td>
</tr>
<tr>
<td>Palms, soles</td>
</tr>
<tr>
<td>Scalp</td>
</tr>
<tr>
<td>Ear (pinna)</td>
</tr>
<tr>
<td>Mastoid area</td>
</tr>
<tr>
<td>Buttocks</td>
</tr>
<tr>
<td>Multiple and clustered</td>
</tr>
<tr>
<td>On various planes of the body</td>
</tr>
<tr>
<td>Abrasions</td>
</tr>
<tr>
<td>Axillary (restraints)</td>
</tr>
<tr>
<td>Wrist and ankles (ligatures)</td>
</tr>
<tr>
<td>Nasal bridge and temple injury (eyeglasses)</td>
</tr>
<tr>
<td>Periorbital ecchymoses</td>
</tr>
<tr>
<td>Oral injury</td>
</tr>
<tr>
<td>Unusual alopecia pattern</td>
</tr>
<tr>
<td>Untreated decubitus ulcers</td>
</tr>
<tr>
<td>Decubitus ulcers in non-lumbar/sacral areas</td>
</tr>
<tr>
<td>Untreated fracture</td>
</tr>
<tr>
<td>Fracture not hip/humerus/vertebra</td>
</tr>
</tbody>
</table>
MLDI in cases of suspected elder abuse: challenges

False positives: medical co-morbidities, changes of aging, propensity to accidental injury

False negatives: unconditionally accepting injuries as a part of "normal aging"
Challenges: false positives
- appreciation of potentially numerous differential diagnoses

Frailty: culmination of a lifetime of assaults on the body by medical problems or lifestyle
- sarcopenia
- osteoporosis
- medication side effects
- depression
- dementia
- anorexia
- environmental impacts
Fractures

Osteoporosis
Low energy falls, minimal force
Multiplicity of falls
Other pathological fractures
Malnutrition and dehydration

Decreased appetite in elderly
Depression
Dementia
Swallowing difficulties
Medication side effects
B12 def
Chronic wasting conditions
Dementia

• Lower levels cognitive function, low MMSE scores, episodic memory, perceptual speed – all assoc with increased risk EA

• Challenging behaviours for caregivers

• Paranoid/delusional thinking: likelihood of being believed?

• Inability to recognise, recall or report

• Post mortem: Neurodegenerative disease workup of limited utility in absence of clinical data

Decubitus ulcers

Even deep ulcers don’t indicate neglect however

• dirty/contaminated
• delay/no attempt at treatment
• no documentation

Atypical areas: restraint, unusual positioning
• Context is key
• Integrated, multidisciplinary input
False negatives – consequences of ageism

- Unquestioningly accepting injuries as a part of “normal aging”
- Under recognition and under reporting of abuse
- Elderly: vulnerable but death not an unexpected event

Michigan study: EA reports
- 41% community based
- 26% non-doctor health care provider
- 5% law enforcement
- 2% physician
Cases reported to CCoV and examined by VIFM 2017

<table>
<thead>
<tr>
<th>Age Grp</th>
<th>Numbers</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 yrs +</td>
<td>17</td>
<td>&lt;1</td>
</tr>
<tr>
<td>90-99</td>
<td>567</td>
<td>9</td>
</tr>
<tr>
<td>80-89</td>
<td>1186</td>
<td>19</td>
</tr>
<tr>
<td>70-79</td>
<td>1050</td>
<td>17</td>
</tr>
<tr>
<td>0- 69</td>
<td>3451</td>
<td>55</td>
</tr>
<tr>
<td>Total</td>
<td>6273</td>
<td>100</td>
</tr>
</tbody>
</table>

2017 Percentage of Cases by Age
<table>
<thead>
<tr>
<th>Age group</th>
<th>Autopsy</th>
<th>No autopsy</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Y+</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>90-99 Y</td>
<td>54</td>
<td>513</td>
</tr>
<tr>
<td>80-89 Y</td>
<td>266</td>
<td>920</td>
</tr>
<tr>
<td>70-79 Y</td>
<td>555</td>
<td>495</td>
</tr>
<tr>
<td>0-69 Y</td>
<td>2052</td>
<td>1399</td>
</tr>
</tbody>
</table>

**Autopsy v Non-Autopsy by Age Group 2017**
False negatives – consequences of ageism

US:
55 to 64 years: 11% autopsied
65 to 74 years: 4.2%
75 to 84 years: 2%
85+ years: 0.8%
cf SUDI: vulnerable but death unexpected
Deaths in the elderly: scope for a screening tool?
Eg. Vulnerable and Elderly Assessment tool

Role of forensic pathologist in Ix of elder abuse

Part of a multi-disciplinary team
Give best advice possible to coroner re: need for autopsy
Comprehensive documentation and examination of cases that go to autopsy with appropriate ancillary investigations
Cases that aren’t reported……..