The role of dentistry in the determination of human identity

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DENTISTRY

Branch of the medicine whose objective is the diagnostic, treatment and prevention of stomatognathic system diseases (teeth, gums, tongue, palate, oral mucosa, salivary glands, tonsils, lips, oropharynx and temporomandibular joint)

IDENTIFICATION

The use of a system or group of scientific knowledge, technical procedures or practical operations to find the existence, know, recognize and with certainty link indubitably acts, conduct and behavior of a person.
There are a few structures of the stomatognathic system to determine human identity
The hardest tissues of the human body.

Protected from mechanical, physical and chemical aggressions.

They have a great degree of individuality and precision.
USING DENTAL COMPARATIVE

Tooth Erosion
Anthropologic study of the superior and inferior maxillary, together with teeth they allow us, through measurements and a series of formulas and indexes, to determine species race, gender, age and even individuality.
PALATE: Rugae pattern
**Cheiloscopy (Lip print)**

- Term derived from Greek “cheilos” (lips) and “skopein” (examine) and is referred to the study, record and classification of lips configuration.

- Based on the disposition that is adopted by the folds, fissures and furrows of the face, superior and inferior lips mucosa.
These structures are:

- Unique
- Immutable and Invariable
- Perennial
Dental pulp: DNA source
Human Bite marks

- The human bite marks are the impressions of the teeth on different kind of substrate capable of being deformed.
- Through this deformation, characteristics of the teeth are transferred to the surface.
Bite marks identification case
Argentinian Proposal to dental records

- **Type 12-dental record:**
  12.001: Record Header
  12.002: Information designation Character
  12.003: Record Origin
  \(0=\text{Antemortem record} \quad 1=\text{Postmortem record}\)
  \(0=\text{Male} \quad 1=\text{Female} \quad 2=\text{Unknown}\)

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12.006: Study models

Dental arch shape
- 0 = ovoid
- 1 = square
- 2 = triangular

Palatine rugae shape
- 0 = straight
- 1 = wavy
- 2 = curves
- 3 = circular
- 4 = nonspecific

Palatine rugae ramifications
- 0 = uniques
- 1 = branches
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12.007: intermaxilar record
  0=centric relation
  1=intercondylar distance
  2=maximum intercuspal
  3=bite record
    0=complete arch
    1=anterior pieces
    2=posterior pieces
## Argentinian Proposal to dental records

- **12.008 Human bite marks**

<table>
<thead>
<tr>
<th>Anatomic localization</th>
<th>Affected surface</th>
<th>Type of skin</th>
</tr>
</thead>
<tbody>
<tr>
<td>0=shoulder</td>
<td>0=curve</td>
<td>0=fixed</td>
</tr>
<tr>
<td>1=neck</td>
<td>1=plane</td>
<td>1=mobile</td>
</tr>
<tr>
<td>2=chest</td>
<td>2=irregular</td>
<td></td>
</tr>
<tr>
<td>3=thigh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4=forearm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5=cheek</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6=crotch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8=other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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Subjacent structure to the injured tissue
0 = bone
1 = cartilage
2 = muscle
3 = adipose tissue
4 = other

Shape of the lesion
0 = round
1 = ovoid
2 = semilunar
3 = irregular

Quantity
0 = unique
1 = multiple
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Include in **Field 18.010: Sample Type / STY** if the origin of the sample is a dental piece: cellular code 9: dental, 10: other, 11: unknown

<table>
<thead>
<tr>
<th>Cellular code</th>
<th>Cellular type</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Blood</td>
</tr>
<tr>
<td>1</td>
<td>Bone</td>
</tr>
<tr>
<td>2</td>
<td>Co-mingled Biological Material</td>
</tr>
<tr>
<td>3</td>
<td>Hair</td>
</tr>
<tr>
<td>4</td>
<td>Saliva</td>
</tr>
<tr>
<td>5</td>
<td>Semen</td>
</tr>
<tr>
<td>6</td>
<td>Skin</td>
</tr>
<tr>
<td>7</td>
<td>Sweat or Fingerprint</td>
</tr>
<tr>
<td>8</td>
<td>Tissue</td>
</tr>
<tr>
<td>9</td>
<td>Other</td>
</tr>
<tr>
<td>10</td>
<td>Unknown</td>
</tr>
</tbody>
</table>
Thank you

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