MAXILLOFACIAL SURVEY

The following is a compilation of the maxillofacial cases which passed through the 12th General Hospital from 1943 to 1945, in Africa, in Rome and in Leghorn, Italy.

Such cases where the diagnosis was abrasion or contusion, or wound, penetrating, mild, where no treatment was indicated were arbitrarily excluded. This left a series of 436 maxillofacial surgical cases.

Africa ............ 154
Rome ............ 145
Leghorn ............ 137

436

INJURIES

Bony injury without soft tissue damage ............ 86
Soft tissue injury without bone damage ............ 152
Bone and soft tissue injury combined ............ 175
Diseases ............ 23

Bone Injury

<table>
<thead>
<tr>
<th>Area</th>
<th>Mandible</th>
<th>Maxilla</th>
<th>Zygoma</th>
<th>Nose</th>
<th>Orbit</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>97</td>
<td>24</td>
<td>25</td>
<td>6</td>
<td>13</td>
<td>170</td>
</tr>
<tr>
<td>Rome</td>
<td>38</td>
<td>18</td>
<td>15</td>
<td>12</td>
<td>8</td>
<td>92</td>
</tr>
<tr>
<td>Leghorn</td>
<td>31</td>
<td>18</td>
<td>15</td>
<td>13</td>
<td>13</td>
<td>91</td>
</tr>
<tr>
<td>Totals</td>
<td>166</td>
<td>65</td>
<td>55</td>
<td>42</td>
<td>42</td>
<td>352</td>
</tr>
</tbody>
</table>

Soft Tissue Injury

<table>
<thead>
<tr>
<th>Area</th>
<th>Face</th>
<th>Tongue</th>
<th>S. Palate</th>
<th>Eyelids</th>
<th>Nose</th>
<th>Lips</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>72</td>
<td>3</td>
<td>1</td>
<td>12</td>
<td>23</td>
<td>11</td>
<td>122</td>
</tr>
<tr>
<td>Rome</td>
<td>90</td>
<td>6</td>
<td>0</td>
<td>14</td>
<td>16</td>
<td>15</td>
<td>141</td>
</tr>
<tr>
<td>Leghorn</td>
<td>85</td>
<td>2</td>
<td>1</td>
<td>19</td>
<td>15</td>
<td>12</td>
<td>141</td>
</tr>
<tr>
<td>Totals</td>
<td>247</td>
<td>11</td>
<td>2</td>
<td>45</td>
<td>54</td>
<td>45</td>
<td>404</td>
</tr>
</tbody>
</table>

Diseases

Papilloma of tongue .................................. 1
Cyst of tongue ...................................... 1
Cyst, mucous, mouth ................................ 1
Papilloma of mucous membrane ....................... 1
Cyst of maxilla .................................... 2
Cyst of lip ......................................... 2
Abscess, submaxillary gland ........................ 1
Cyst, spideroid, cheek ............................. 1
Angioma of cheek .................................. 1
Lymphangiomata of cheek ............................ 1
Nevi of face ...................................... 1
Cyst of nose ....................................... 1
Epithelioma of nose and eyelid ..................... 1
Epithelioma of lip ................................ 2
Osteomyelitis of mandible ........................ 3
Radicular cyst of mandible ........................ 1
Cyst, branchiogenic ................................ 1
Tumor, face ........................................ 1

In the breakdowns that follow, it should be noted that the worksheets from which these figures were obtained were in many cases incomplete or inaccurate.

For example, it seems most unlikely that with 55 zygomatic fractures and 63 maxillary fractures there would be only 39 orbital fractures and only 33
In the same way, the figures on treatment are quite incomplete. In 95 cases (21.7%) either no treatment at all was indicated or the treatment recorded was entirely inadequate for the injuries described.

Fractures: There were 345 fractures.

<table>
<thead>
<tr>
<th>Type</th>
<th>Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fracture of one bone only</td>
<td>204</td>
<td>(79.0%)</td>
</tr>
<tr>
<td>Fracture of two or more</td>
<td>54</td>
<td>(21.0%)</td>
</tr>
<tr>
<td>Bones alone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mandibular Fractures</td>
<td>132</td>
<td>38.2% of all</td>
</tr>
<tr>
<td>With other bones</td>
<td>108</td>
<td>81.8%</td>
</tr>
<tr>
<td>Maxillary Fractures</td>
<td>63</td>
<td>18.7% of all</td>
</tr>
<tr>
<td>With other bones</td>
<td>25</td>
<td>39.5%</td>
</tr>
<tr>
<td>Nasal Fractures</td>
<td>56</td>
<td>16.2% of all</td>
</tr>
<tr>
<td>With other bones</td>
<td>36</td>
<td>64.3%</td>
</tr>
<tr>
<td>Zygomatic Fractures</td>
<td>55</td>
<td>15.9% of all</td>
</tr>
<tr>
<td>With other bones</td>
<td>24</td>
<td>43.6%</td>
</tr>
<tr>
<td>Orbital Fractures</td>
<td>39</td>
<td>11.3% of all</td>
</tr>
<tr>
<td>With other bones</td>
<td>11</td>
<td>28.2%</td>
</tr>
<tr>
<td>Fractures involving sinuses</td>
<td>33</td>
<td>(9.5%)</td>
</tr>
</tbody>
</table>

Nerve Injuries: 21 cases.

<table>
<thead>
<tr>
<th>Nerve</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Olfactory</td>
<td>1</td>
</tr>
<tr>
<td>Facial</td>
<td>10</td>
</tr>
<tr>
<td>Maxillary</td>
<td>1</td>
</tr>
<tr>
<td>Inferior Mental</td>
<td>1</td>
</tr>
<tr>
<td>Hypoglossal, Facial</td>
<td>1</td>
</tr>
<tr>
<td>Not indicated</td>
<td>7</td>
</tr>
</tbody>
</table>

How Incurred

<table>
<thead>
<tr>
<th>Manner</th>
<th>Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accidental</td>
<td>177</td>
<td>(40.6%)</td>
</tr>
<tr>
<td>Wounded in action</td>
<td>232</td>
<td>(53.2%)</td>
</tr>
<tr>
<td>Disease</td>
<td>23</td>
<td>(5.2%)</td>
</tr>
<tr>
<td>Manner not stated</td>
<td>4</td>
<td>(1.0%)</td>
</tr>
</tbody>
</table>

In 197 cases (48.3%) there were associated injuries.

Treatment

Treatment prior to admittance to 12th General Hospital:

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debridement</td>
<td>218</td>
</tr>
<tr>
<td>Primary suture</td>
<td>139</td>
</tr>
<tr>
<td>External fixation</td>
<td>62</td>
</tr>
<tr>
<td>Open reduction</td>
<td>7</td>
</tr>
<tr>
<td>Bandage, Barton</td>
<td>1</td>
</tr>
<tr>
<td>Tracheotomy</td>
<td>10</td>
</tr>
</tbody>
</table>

Treatment at 12th General Hospital:

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debridement</td>
<td>28</td>
</tr>
<tr>
<td>Primary suture</td>
<td>21</td>
</tr>
<tr>
<td>Secondary suture</td>
<td>13</td>
</tr>
<tr>
<td>External fixation</td>
<td>43</td>
</tr>
<tr>
<td>Tracheostomy</td>
<td>10</td>
</tr>
<tr>
<td>Bandage, Barton (?)</td>
<td>2</td>
</tr>
<tr>
<td>Open reduction</td>
<td>23</td>
</tr>
</tbody>
</table>
Caldwell Luc (alone) .................. 4
Caldwell Luc with wiring of zygoma ......... 5
Simple (?) elevation of zygoma .............. 3
Nasal plastic .................................. 2
Type not indicated ......................... 9

Dispositions

"A" duty ........................................ 205 (47.0%)
"B" duty: M.F causes ........................ 35 (8.0%)
Other causes .................. 11
"C" duty: M.F causes ......................... 155 (35.5%)
Other causes ............ 90
Evacuation without classification .......... 41 (9.5%)

Hospital Days

From date of injury to date of disposition from 12th General Hospital varied from 1 to 183 with an average of 38.4 days per patient.

Africa
(154 cases)

Bone injury without soft tissue damage .......... 44
Soft tissue injury without bone damage .......... 21
Bone and soft tissue injury combined .......... 77

Disease:
Abcess, submaxillary gland ........ 1
Epidermoid cyst of cheek .......... 1
Angioma of cheek ........ 1
Lymphangioma of cheek .......... 1
Nevi of face ................ 1
Cyst of nose ................ 1
Epithelioma of nose and eyelid .... 1
Epithelioma of lip ........ 1
Osteomyelitis of mandible ...... 3 (all after extractions)
Radicular cyst of mandible .......... 1

Fractures

One bone only ................................ 92 cases
Two or more bones .................... 26 cases

<table>
<thead>
<tr>
<th></th>
<th>Mandible</th>
<th>Maxilla</th>
<th>Zygoma</th>
<th>Nose</th>
<th>Orbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alone ......</td>
<td>51</td>
<td>9</td>
<td>9</td>
<td>19</td>
<td>4</td>
</tr>
<tr>
<td>With other bones ......</td>
<td>63</td>
<td>20</td>
<td>15</td>
<td>12</td>
<td>14</td>
</tr>
</tbody>
</table>

How Incurred

Accidental .................................. 85
Wounded in action ...................... 57
Disease ................................. 12

Maxillofacial injuries alone ............ 92
Maxillofacial injuries associated with others .... 62

Treatment prior to admittance to 12th General Hospital:
Debridement ................................ 45
Primary suture .......................... 30
External fixation ....................... 43
Open reduction .......................... 4
Tracheotomy ................................ 2
Treatment at 12th General Hospital:

Debridement ........................................ 10
Primary suture ........................................ 7
Secondary suture ................................. 2
External fixation ................................. 26 (8 reapplications)
Bandage .............................................. 2
Open reduction ....................................... 15
  Caldwell Luc, Gillies ...................... 2
  Caldwell Luc ........................................ 3
  Elevation of zygoma ......................... 2
  Nose plastic ....................................... 1
  Type not indicated .............................. 6
  (All except nasal case involved zygoma although one indicated orbit alone)

In 35 cases (22.7%) either no treatment was recorded or the treatment indicated was inadequate for the injuries described.

Disposition:

"A" duty ........................................ 66 (42.8%)
"B" duty ....... Maxillofacial .... 22 .... 25 (16.2%)
(10 temp) None M - F ........ 3
"C" duty ....... Maxillofacial .... 25 .... 63 (41.0%)
  Other causes ... 38

Hospital days varied from 1 to 183. Average stay in hospital from time of injury to disposition date, 12th General Hospital - 43.3

Bone injury without soft tissue damage .................. 19
Soft tissue injury without bone damage ................. 65
Bone and soft tissue injury combined .................... 53

Disease:
  Papilloma of tongue .................. 1
  Cyst of tongue ......................... 1
  Cyst of maxilla ....................... 2
  Cyst, mucous, of mouth ............. 1
  Papilloma of mucous membrane ...... 1
  Cyst of lip .................................. 2

          .................. 8

Fractures

One bone only .................................... 58 cases
Two or more bones ................................. 12 cases

<table>
<thead>
<tr>
<th>Bone Type</th>
<th>Mandible</th>
<th>Maxilla</th>
<th>Zygoma</th>
<th>Nose</th>
<th>Orbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alone ......</td>
<td>30</td>
<td>7</td>
<td>8</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>With other bones ......</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>38</td>
<td>16</td>
<td>15</td>
<td>12</td>
<td>8</td>
</tr>
</tbody>
</table>

How Incurred

  Accidental .................................. 49
  Wounded in action ........................... 67
  Disease ..................................... 8
  Not indicated ............................... 1

Maxillofacial injuries alone .......................... 88
Maxillofacial injuries associated with others ...... 57
POWs, in this series .................. 18

Treatment prior to admittance to 12th General Hospital:

Debridement ............................ 73
Primary suture .......................... 35
External fixation ......................... 21
Open reduction ........................... 2
Tracheotomy ............................. 3

Treatment at 12th General Hospital:

Debridement ............................ 13
Primary suture .......................... 9
Secondary suture ......................... 8
External fixation ......................... 5
Open reduction ........................... 2
Nose ................................. 1
Zygoma ............................. 1

In 39 cases (26.9%) either no treatment was recorded or the treatment indicated was inadequate for the injuries described.

Disposition:

"A" duty ................................ 80 (55.1%)
"B" duty ................................ 6 (4.1%)
"C" duty ................................. 4
Other .................................. 20
Evacuated without classification ........ 15 (10.5%)

Hospital days varied from 1 to 113. Average days - 37.3

Bone injury without soft tissue damage .......... 22
(Other than abrasions, contusion)
Soft tissue injury without bone damage .......... 66
Bone and soft tissue injury combined .......... 46

Disease:

Tumor of face ............................ 1
Epithelioma of lip ........................ 1
Bronchiogenetic cyst ........................ 1

............. 3

137

Fractures

One bone only ............................ 54 cases
Two or more bones ........................ 14 cases

<table>
<thead>
<tr>
<th>Fracture Site</th>
<th>Mandible</th>
<th>Maxilla</th>
<th>Zygoma</th>
<th>Nose</th>
<th>Orbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alone ..........</td>
<td>27</td>
<td>9</td>
<td>7</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>With other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bones ..........</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>31</td>
<td>18</td>
<td>16</td>
<td>13</td>
<td>13</td>
</tr>
</tbody>
</table>

How Incurred

Accidental ......................... 43
Wounded in action .......... 88
Disease .............................. 3
Not stated .......................... 3

- 5 -
Maxillofacial injuries solely ................................ 59
Maxillofacial injuries associated with other injury .... 79

Treatment:

It should be stated that in 21 cases (15.3%) either no treatment was recorded or treatment indicated was far from adequate for injuries described.

Treatment prior to admittance to 12th General Hospital:

Debridement ........................................... 100
Primary suture ....................................... 74
External fixation ................................. 18
Open reduction ....................................... 1
Bandage (Barton) ............................. 1
Tracheotomy ........................................ 5

Treatment at 12th General Hospital:

Debridement ........................................... 5
Primary suture ....................................... 5
Secondary suture ................................... 3
External fixation .................................... 12 (One reapplication of original fixation)
Open reduction ....................................... 7
Caldwell Luc, Gillies ......................... 3
Caldwell Luc, ................................. 1
Not indicated ...................................... 3

Disposition:

"A" duty ................................................. 59 (43.0%)
"B" duty (none due to M-F injury) .............. 4 (2.9%)
"C" duty ...... Maxillofacial 16 ............. 48 (35.0%)
Associated inj. 32 .............................. 1
Evacuated without classification .............. 26 (19.1%)

Hospital days, from date on injury to date on disposition sheet, 12th General Hospital, varied from 2 - 134 (134 days to "A" duty). The average stay indicated was 30.8 days.