Forensic dental identification of a burnt murder victim

I was requested by the Victim Identification Centre in Cape Town and Dr MW of the Forensic Pathology Services to examine the burnt remains of a murdered victim who was found in the boot of a motor vehicle that had been torched.

The deceased was an adult male and had severely burnt facial features making visual recognition impossible. The police suspected that the victim was the owner of the vehicle. The examination of the victim took place at the Salt River Forensic Pathology Services Laboratory.

An oral autopsy was performed to gain access to the jaws and teeth and to facilitate dental radiographic images of all the teeth in the upper and lower jaws (Figure 1). These radiographs together with the macroscopic examination of the teeth were used to compile a Post Mortem Dental Record (Figure 2).

During the oral examination, fractures of the left maxilla and zygoma were noted as well as the left mandibular condyle and ramus that were due to perimortem trauma.

Ante mortem dental data consisting of two dental radiographs were sent by e-mail by the father of DW and consisted of a periapical and bitewing images of the right posterior teeth (Figure 3).

These radiographs were used to compile an Ante Mortem Dental Record for a patient DW (Figure 4). No written data was obtained for this patient.

**Dental comparison**

The post mortem and ante mortem dental data were compared in a Comparison Chart with highlights of the concordant features (Yellow).

Table 1. Dental data comparison chart.

<table>
<thead>
<tr>
<th>Post mortem data</th>
<th>Ante mortem data of DW</th>
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<tbody>
<tr>
<td>13 Present</td>
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<td>46 DO composite restoration</td>
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<td>48 Occlusal composite restoration</td>
<td>48 Occlusal composite restoration</td>
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</table>

The comparison between the post mortem and ante mortem dental data showed ten (10) similar features.

The composite restorations in the upper right and lower right molars as well as the absent 47 tooth were deemed as five concordant features. The other comparative features were the teeth present in the right jaws as seen in the ante mortem dental radiographs.
CONCLUSION

The dental identification process requires 12 concordant features to make a positive identification of an individual. However, it has been shown that the radiographic images of dental restorations may be sufficient to facilitate identification and require less characteristics.

The ante mortem dental data revealed five significant concordant features i.e. the dental restorations and absent 47 tooth. This did not result in 100% identification, but there was a high degree of probability that the burnt victim was Mr DW. Subsequent DNA analysis confirmed the identification.

This case once more shows the essential role that forensic dentistry has in the identification of human remains. Despite the paucity of concordant features between the ante mortem and post mortem dental records the dental characteristics were sufficient to provide a possible identification.

The radiographic images were essential in providing comparable features and stresses the major role well documented dental records are in the forensic identification process.

Declaration

No conflict of interest declared.

References