http://dx.doi.org/10.17159/2519-0105/2019/v74no9a4

Forensic dental identification of a burnt murder victim

SADJ October 2019, Vol. 74 No. 9 p496 - p497

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CASE REPORT

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.

Post mortem data	Ante mortem data of DW
13 Present	13 Present
14 Present	14 Present
15 Present	15 Present
16 OP composite restoration	16 OP composite restoration
17 OP composite restoration	17 OP composite restoration
44 Present	44 Present
45 Present	45 Present
46 DO composite restoration	46 DO composite restoration
47 Absent	47 Absent
48 Occlusal composite restoration	48 Occlusal composite restoration

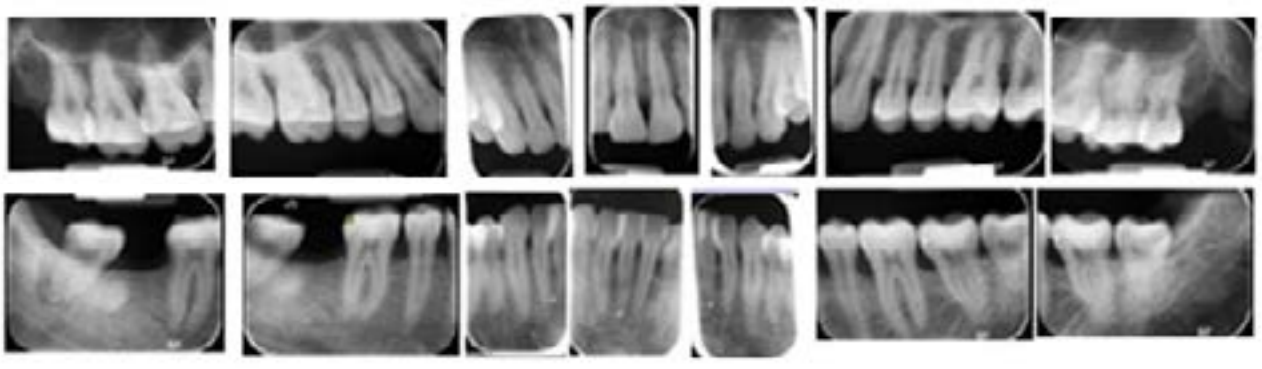

Figure 1. Post mortem dental radiographs of the teeth of the deceased showing dental restorations and a missing 47 tooth (lower right 2nd molar). Composite dental restorations are visible in the left and right maxillary and mandibular molar teeth.

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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.

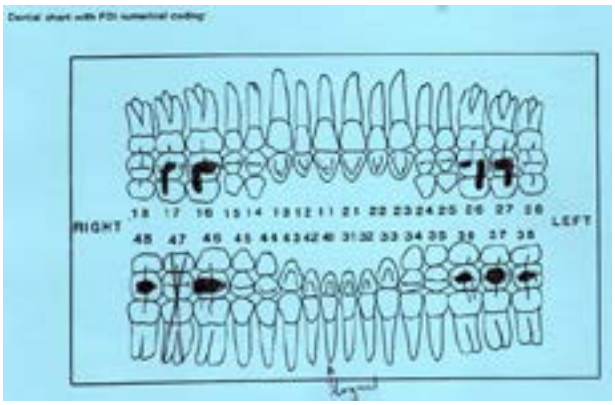

Figure 2. Post mortem dental record showing the dental restorations in the posterior teeth and the absent 47 tooth.

Figure 3. The ante mortem dental radiographs of DW consisting of a bite-wing and periapical images of the patient's (DW) right teeth. Composite restorations are present in the 16, 17, 46 and 48 teeth. The 47 is absent.

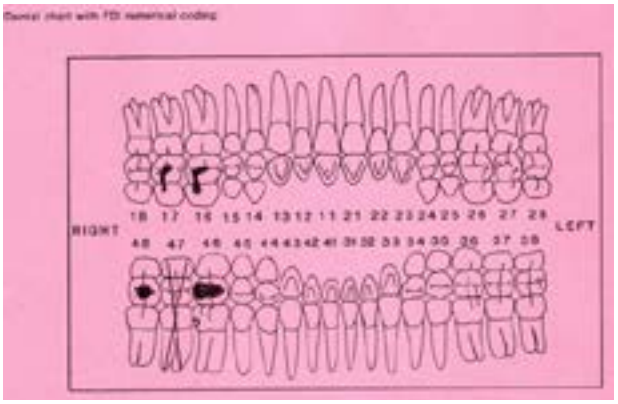

Figure 4. The Ante Mortem Dental Record of DW compiled from the ante mortem radiographic images showing the dental restorations in the 16, 17, 46 and 48 teeth. The 47 is absent.

Declaration

No conflict of interest declared.

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