

Mesiodens: an Identification Aid in Skeletal Remains Examination: a Case Report

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ABSTRACT

Background: Forensic Odontology is that branch of dentistry which plays a vital role with regard to anthropological studies and human identification. In the cases of mass disasters or cases where only the skeletal remains are found, bones and teeth will be the only source of information for the identification of the dead. Any aberrations or any variations from the normality become a distinctive feature in the identification of the deceased.

Case Report: Unknown skeletal remains were received by the forensic department for the purpose of identification. It was estimated to be a male of 50-60 years old with a stature of 164±2 cm and the skull had a mesiodens. Due to this particular feature, the identity of the individual was traced out.

Conclusion: This; like always, again proves that a meticulous odontological examination, and the anthropological findings followed by confirmation by DNA finger printing can successfully result in positive identification.

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► *Implication for health policy/practice/research/medical education:* Mesiodens: an Identification Aid in Skeletal Remains Examination

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1. Introduction:

Identification is of paramount importance in medico-legal investigation and is a prerequisite for the certification of death and for various medicolegal issues (1). The unique and rare features of the human dentition play a significant role in identification of the individuals. Despite the modern advances in DNA and other methodologies, dental identification plays a very important role in

identifying the victims of mass disasters. Anything that distinguishes one person from another such as gender, stature, birthmarks, scars, tattoos, anthropometrical measurements, and dactylography or any anatomical variations become very important for the forensic team to establish the identity of the deceased. The studies have shown that the cases of asymmetry, abnormality and anomaly, help in narrowing the search within the missing persons files (2). Few case studies demonstrate that dental anomalies have been instrumental in positive identification (3). A well maintained antemortem dental record as plays a very important role for the positive identification.

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The postmortem odontological evidence can be compared with the antemortem dental record and identification can be established (4).

This particular case report illustrates how a positive identification of an adult was done based on the tooth anomaly, and the identification was later confirmed with DNA fingerprinting. This case substantiates the importance of odontological analysis and anthropological evaluation, without which conclusive identification could not have been drawn.

2. Case Report:

Skeletal remains were found in a forest of south-western coastal town of India (Figure 1). Following the preliminary investigation, the skeletal remains were subjected to examination for identification and determination of the cause of death.

After cleaning, the skeletal remains were placed in the anatomical position. During the examination, the analysis of the cranium and pelvis indicated that the victim was male. The victim was aged between 50-60 years old. Following the application of the Karl Pearson, Nat, PAN and Shah and Siddique formulae on the long bones, it was noted that the approximate height of the victim was 164 ± 2 cms. As the detailed examination of the skull was being done, the skull showed that the upper jaw, had 17 sockets instead of the normal 16 sockets for the teeth. An extra socket was present between and behind the central incisors for 'Mesiodens', which is a type of supernumerary tooth (Figure 2).

The skeletal remains matched with the profile of a missing person, who was a 58 year old man, missing since 130 days and were 167 cm in height. On further enquiry with his relatives and his treating dentists, it was revealed that he had a supernumerary tooth. But, the dentist did not have any form of ante mortem dental record to back the claim. Thus, a positive identification was made based on the result of the skeletal examination and the observation of the Mesiodens which was a supernumerary tooth. However, the police proceeded with the DNA analysis, which matched with the profile of the missing person.



Fig. 1. It shows skeletal remains found in the forest.



Fig. 2. It shows an extra socket between the two central incisors.

3. Discussion:

Supernumerary teeth may be defined as any teeth/tooth substance in excess than the usual configuration of twenty deciduous and thirty two permanent teeth (5). Cases involving one or two supernumerary teeth most commonly involve the anterior maxilla, followed by the mandibular premolar region (5).

The most common type of supernumerary tooth as indicated by Alberti *et al* is Mesiodens (6) which can appear as single, multiple, unilateral or bilateral. It can present as a part of symptoms in some syndromes as well as can be seen in normal individuals (6). Several studies have shown that Mesiodens is more common in males as compared to the females (7). The prevalence of Mesiodens ranges between 0.15% to 3.9% while few other sources reported that the incidence was in between 0.09% to 2.05% in the general population (8). The prevalence of Mesiodens was Iranian population is 1.6% (9).

Until recently, the most primitive evidence of Mesiodens goes back to 13000 years,

when it was found among the remains of Australian aboriginal (10) (Sutton). Etiology of Mesiodens remains unclear though genetic basis for supernumerary teeth was suggested considering observation of a higher rate of supernumerary teeth among the related families (11). It was also mentioned that environmental factors might play a role in occurrence of Mesiodens as well as splitting of the tooth bud (7). Morphologically, Mesiodens have heterogeneous forms. Mainly they are eumorphic and dysmorphic. Eumorphic type resembles exactly to that of the central incisors in size and shape unlike the dysmorphic type. According to several studies the Dysmorphic type is further classified into conical (peg) shaped, tuberculate type (has more than one cusp or tubercle), molariform type (multilobed) and supplemental type (tooth like) of which, the conical type is the most commonest(12). Delay in the eruption of permanent teeth, displacements, crowding, dentigerous cysts, dilaceration of the permanent teeth are the most commonest complications of this particular condition.

4. Conclusion:

In the present case, Skeletal remains examination, meticulous odontological examination, and the anthropological findings followed by confirmation by DNA finger printing resulted in positive identification. Thus Mesiodens, a dental anomaly played an important role in the identification. This case report emphasizes the importance of careful skeletal remains examination as well as the importance of maintaining antemortem dental records.

5. References:

1. Shetty M, Premalatha K. Study of palatal rugae pattern among the student population in Mangalore. *Journal of Indian Academy of Forensic Medicine*. 2011;33(2):112–5.
2. Kanchan T, Shetty M, Nagesh KR, Menezes RG. Lumbosacral transitional vertebra: clinical and forensic implications. *Singapore Med J*. 2009;50(2):85-7.
3. Brkić H, Keros J, Kaić Z, Cadez J. Hereditary and environmental dental findings in identification of human remains. *Coll Antropol*. 2000;24 Suppl 1:79–83.
4. Sweet D. Why a dentist for identification? *Dent Clin North Am*. 2001;45(2):237–51.
5. Mitchell L, Bennett TG. Supernumerary teeth causing delayed eruption--a retrospective study. *Br J Orthod*. 1992;19(1):41–6.
6. Alberti G, Mondani PM, Parodi V. Eruption of supernumerary permanent teeth in a sample of urban primary school population in Genoa, Italy. *Eur J Paediatr Dent Off J Eur Acad Paediatr Dent*. 2006;7(2):89–92.
7. Rajab LD, Hamdan M a. M. Supernumerary teeth: review of the literature and a survey of 152 cases. *Int J Paediatr Dent Br Paedodontic Soc Int Assoc Dent Child*. 2002;12(4):244–54.
8. Brook AH. Dental anomalies of number, form and size: their prevalence in British schoolchildren. *J Int Assoc Dent Child*. 1974;5(2):37–53.
9. Meighani G, Pakdaman A. Diagnosis and Management of Supernumerary (Mesiodens): A Review of the Literature. *J Dent Tehran Iran*. 2010;7(1):41–9.
10. Sutton PR. Tooth eruption and migration theories: can they account for the presence of a 13,000-year-old mesiodens in the vault of the palate? *Oral Surg Oral Med Oral Pathol*. 1985;59(3):252–5.
11. Stellzig A, Basdra EK, Komposch G. Mesiodentes: incidence, morphology, etiology. *J Orofac Orthop Fortschritte Kieferorthopädie Organ Official J Dtsch Ges Für Kieferorthopädie*. 1997;58(3):144–53.
12. Gallas MM, García A. Retention of permanent incisors by mesiodens: a family affair. *Br Dent J*. 2000;188(2):63–4.