

# DENTURE MARKING FOR THE MALAYSIAN POPULATION

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## ABSTRACT

In recent years, dental evidence has played an important role in the positive identification of unknown deceased victims of catastrophes. To improve further dental identification techniques, there is an urgent need to adopt a national policy on denture marking as a compulsory procedure in the fabrication of dentures. The favoured scheme of marking which provides the most information for the identity of the denture wearer is proposed here.

*Key Words:* Forensic Odontology, denture marking, identification.

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## INTRODUCTION

A forensic odontologist's work load usually involves the use of dental tissues and restorations to identify a deceased unknown individual. This is dependent upon the provision of adequate information, especially antemortem dental records. The protocol and management surrounding the dental identification procedures should be within the legal constraints of the country. This will help further improve the recognition of dental comparison as a credible method of identification by law enforcing authorities. The procedures of dental identification are acceptable because the human dentition has good postmortem preservation. It is the hardest mineralised tissue of the human skeleton. Even dental restorations and prostheses are extremely resistant to physical and chemical deterioration. In addition, the unique morphological characteristics of human teeth and dental restorations have great individuality, whereby the availability of routine dental treatment records (especially radiographs and models) provide exacting evidence for comparison.

In 1835, a gold denture helped identify the burnt body of Countess of Salisbury. After the second World War, 819 of the 3,000 of the unidentified dead soldiers were denture wearers. But unfortunately, only 9 persons of those who wore dentures could be identified.<sup>(1)</sup> Apart from identification of deceased victims, establishing ownership of dentures in geriatric and mental institutions is also important to prevent any mix-up during cleaning procedures by attendants of these institutions.<sup>(2,3)</sup> Realising this importance, marking of dentures with names or numbers is becoming a mandatory procedure in the the fabrication of dentures. This is followed very stringently in seven states in United States of America.<sup>(4,5)</sup> The authors are hopeful that mandatory denture marking by Malaysian dental surgeons will become a reality as a routine practice in denture fabrication. Although no legislation has been approved pertaining to this matter, it is a social and an ethical obligation on the part of the practising dental surgeon to do so. In the recent Highland Towers

Condominium disaster at Ulu Kelang, Selangor there were five edentulous victims wearing dentures. The investigating forensic odontologist did not find any of their dentures having any form of identifying markings, thereby frustrating the dental victim identification team from making any conclusive identification.<sup>(6)</sup>

## TECHNIQUE OF MARKING DENTURES

All adult Malaysians have national registration identification number written on their identity cards. This makes tracing of any adult Malaysian individual easy as all his latest particulars are stored by the National Registration Department. The army and police personnel have their own identity cards with similar numbers. Furthermore every country has a code (Malaysia is coded as no.60). This can be obtained from the telephone directory which list out the codes of various countries. The authors propose that the country code be prefixed before the identity card number. A hyphen could be inserted in between the country code and the identity card number to indicate the origin of the individual more distinctively (Fig. 1 & 2). As you are aware, rapid transport systems have made travelling overseas inexpensive for Malaysians. Denture marking will become a great help when Malaysians die under unfortunate circumstances, especially in a mass disaster in a foreign country.

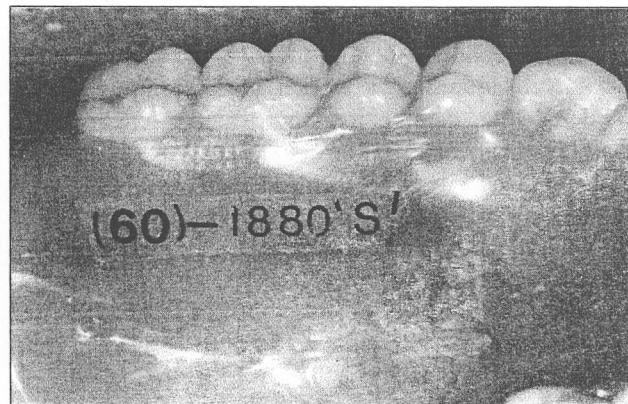


Figure 1: Upper Denture

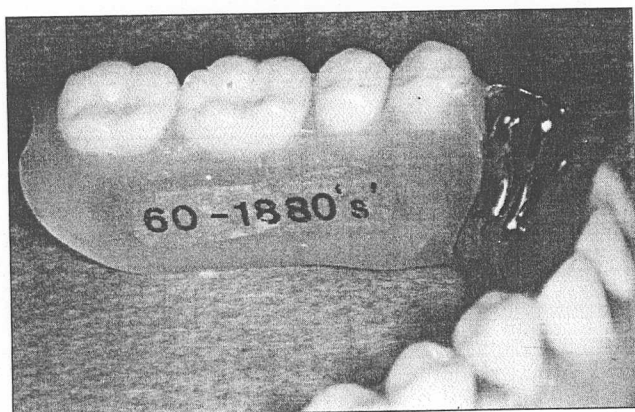


Figure 2: Lower Denture

The markings made in the denture should not affect the strength of the appliance. Furthermore it should not involve much laborious work and must be inexpensive to incorporate. It should be durable, able to resist heat and moisture and be aesthetically acceptable. It should be specific and be capable of yielding a rapid positive identification.<sup>(3,5)</sup> It has been observed in numerous incinerated bodies the lower lingual posterior, and the upper palatal posterior portion of the dentures are usually spared during a conflagration.<sup>(5,7)</sup> These sites become the choice areas for the marking. It must also be placed on the polished surface (not the fitting surface) of the dentures so that it becomes visible to an untrained investigator.

Traditionally, the marking is written on to a piece of non-blotching paper and then incorporated into the denture. However, there are others who inscribe it on to a thin metal strips or foils or even on orthodontic bands. These are preferred as they are fire resistant and are radio-opaque during X-ray examination. Suggestions have been made to inscribe on the foils in dental X-ray packets.<sup>(5)</sup> However these foils may be made from lead and its use must be discouraged as it can be poisonous when saliva permeates the acrylic resin.

There are two methods of incorporating marking in acrylic dentures. The first was to include the marking during the packing of the acrylic and the denture is subsequently heat-cured the conventional way.<sup>(8)</sup> Great care must be taken to prevent the paper becoming crumpled during packing.<sup>(9)</sup> Sometimes the marking may not display at the desired site-especially when placing on the slope of the lingual flange of the lower denture.

The second method is to have the denture made first. Subsequently, a trench about 1mm depth is created in the denture measuring to the length of the marking paper or metal strip. The marking component is then placed into the trench and then covered by clear self curing acrylic.<sup>(5,9)</sup> The acrylic is then allowed to cure on the bench or in a pressure pot. Curing in a pressure pot in 100°F and 20 psi pressure for 20 minutes will reduce porosity of the resin.<sup>(4)</sup> After curing, the excess is removed with an acrylic bur and polished and it is ready to be issued to the patient.

## DISCUSSION

The legal events consequent upon death are complex and have far reaching implications. These include succession of property, payment of pensions, settlement of life insurance and the possible remarriage of the surviving spouse.<sup>(5)</sup> There are also humanitarian and cultural factors, such as the performance of religious rites in association with the disposal of bodies. Any delay in the correct identification of a deceased person will only cause considerable hardship and distress for the relatives and dependents. Therefore, any procedure that can provide confirmatory information about an individual in his/her denture must be encouraged.

The proposed method of incorporating the country code and the identity card number in a denture is the recommended procedure recognised by international forensic experts. This view was expressed because of the great difficulty in the identification of badly incinerated, decomposed or even mutilated bodies in mass disasters involving citizens of various countries. The denture marking in Fig. 1 & 2 reads as follows:-

Code 60.....for Malaysia.

- (hyphen).....inserted to distinguish the country code and identity card number.

1880 (S)..... identity card number of the denture wearer who is a member of the security personnel.

In countries where no identity cards are issued to their citizens, then the driving licence number, social security number or the income tax file number are the recommended identifying number to be employed. As stated earlier, there is no legislation mandating denture marking in Malaysia. However, it is the professional and ethical duty of the dentist to do so. The reasons for positive identification are sufficient to support the necessity of doing it. Denture marking should also not be restricted to acrylic dentures only but also be extended to those made from cobalt-chromium. Identifying markings can also be incorporated in orthodontic appliances, maxillo-facial reconstructive prostheses, crowns and bridges. Any quality marking in a postmortem dental appliance will provide as an excellent avenue to decipher information on the identity of the decedent and this can amply promote dental comparison as a means of identification.

**REFERENCES**

1. MacEntee MI, Campbell T. Personal identification using dental prostheses. *J Prosthet Dent* 1979; 41: 377-80.
2. Harrison A. A simple denture marking system. *Br Dent J* 1986; 160: 89-91.
3. Turner CH, Fletcher AM, Ritchie GM. Denture marking and human identification. *Br Dent J* 1976; 141: 114-7.
4. Toolson LB, Taylor TD. Method for denture identification. *J Prosthet Dent* 1989; 61: 114-5.
5. McGivney J. Marking of removable dentures. In: Averill DC, ed. *Manual of Forensic Odontology*. 2nd. edn. American Society of Forensic Science, 1991; 62-66.
6. Alhabshi SF, Nambiar P. The contribution of forensic odontology in the Highland Towers condominium disaster. *Annals Dent Univ Malaya* 1995; 2: 25-8.
7. Harvey W. Identity by teeth and the marking of dentures. *Br Dent J* 1966; 121: 334-40.
8. Ling BC. A white character denture labeling technique. *J Prosthet Dent* 1993; 69: 545.
9. Lee LKC, Lim BY. Simply marking dentures in the SAF. *Sing Dent J* 1993; 18: 26-7