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An assessment of attitudes to, and extent of, the practice of denture marking in South Australia

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Abstract

Denture marking or labelling is not a new concept in either prosthetic or forensic dentistry and its routine practice has been urged by forensic odontologists internationally for many years. In the general community it is often recommended for institutionalized persons to prevent confusion of ownership of dentures. In Australia, the Nursing Home Standards require that dentures of residents be 'discreetly labelled' and marking of all dentures is recommended by the Australian Dental Association. In some countries the marking of dentures is regulated by legislation, but elsewhere there seems to be a reluctance to effect this practice.

Various methods which have been proposed include the insertion of an identifying label during the fabrication of the dentures with the utilization of a number of materials and coding systems. This study reports the results of a survey undertaken to determine the extent of the practice of denture marking in South Australia, the methods in use, and the attitudes of dentists, dental technicians and institutions to it.

The results indicated that 24.5 per cent of all practitioners providing removable prostheses to their patients include an identifying label as part of the service on some occasions. This included 19.9 per cent of general dental practitioners, 25 per cent of specialist prosthodontists, 57.1 per cent of practitioners with training in forensic odontology, and 43.5 per cent of clinical dental technicians.

No practitioner labelled dentures routinely. Reasons cited for not labelling dentures included cost, lack of awareness of standards and recommendations and a belief that it was of little importance.

Key words: Dentures, denture marking, denture labelling.

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Introduction

Successful completion of a dental identification is dependent on the availability of treatment records maintained by dental practitioners. The keeping of adequate dental records is part of the ethical and professional responsibility of a practitioner to a patient. One aspect of this responsibility concerns the identification of dentures.

In a forensic context, positive identification of a person wearing full dentures can be either immediate and straightforward or difficult and time-consuming or even impossible to achieve. This has particular significance in coronial cases where release of the body of a deceased person cannot be achieved until identification is satisfactorily accomplished. Any delays are often accompanied by very considerable financial costs to the investigating authorities and ultimately the community and an exacerbation of the emotional stress suffered by bereaved families.

Corroborating evidence may be found by means of comparison of rugae patterns on a denture with those in the mouth of the deceased, but this alone may not constitute a positive identification of the denture. Immediate identification is usually possible if a small, discreet identification code is embedded in the denture base.

Denture marking is not a new concept in either prosthetic or forensic dentistry. In the general community it is often advised for institutionalized persons to prevent confusion of ownership of dentures. Australian Nursing Home Standards require that dentures of residents be 'discreetly labelled',[1] and labelling of all dentures is recommended by the Australian Dental Association (ADA)[2] and by forensic odontologists internationally.[3-6] In Scandinavia and in some states of the USA the labelling of dentures is regulated by legislation.[3] In Sweden the legislation requires that the service must

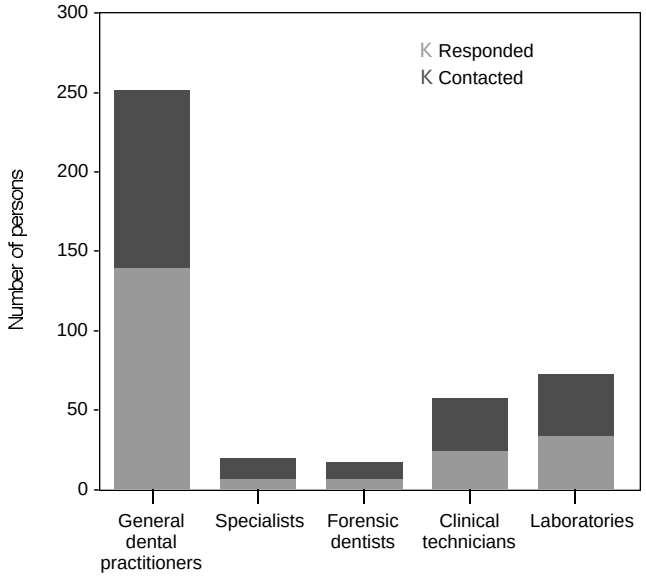

Fig. 1. – The survey sample of groups involved in the supply of dentures.

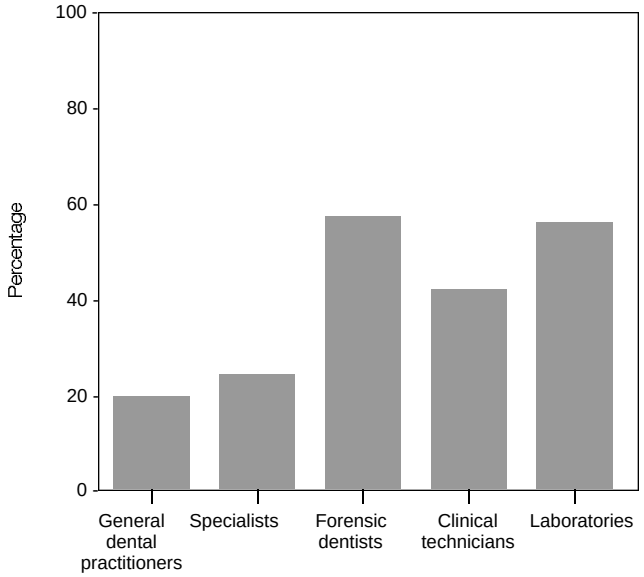

Fig. 2. – Proportion of respondents labelling dentures.

be offered to the patient who has the right to refuse it, and although laboratories have reported that all dentures they produced were marked, a recent survey of nursing homes in that country revealed that only 50 per cent of dentures of residents were in fact marked.[3]

Various methods have been proposed for the marking of dentures, mostly involving the embedding of a fire resistant material (for example, the ID-Band§ titanium foil and Ho Matrix Band,) containing an identifiable coding system representing patient details.[2-8] A less expensive alternative utilizes a narrow tissue-paper strip inscribed with the patient's identification details instead of the metal strip. A disadvantage of this system is that the information on the paper strip may not survive a fire.

In South Australia, denture marking is not universally practised and numerous attempts to promote it have been made with little success. A recent survey was conducted by the Forensic Odontology Unit at The University of Adelaide in order to establish the extent to which dentures were marked, and the attitudes of various groups within the dental profession in South Australia to the procedure.

Method

The survey consisted of a written questionnaire sent to a selected sample of each group involved in the supply of dentures to the public. The survey sample (Fig. 1) consisted of a total of 350 persons representing the following categories:

1) A simple random sample of registered general dental practitioners currently working in South Australia. This group excluded dentists who worked predominantly in the public sector as it was assumed that they would follow South Australian Dental Service policy on this issue.

2) All registered specialist prosthodontists in practice in South Australia.

3) Dentists who had completed some formal training in forensic odontology.

4) All registered clinical dental technicians in South Australia.

5) All dental laboratories listed in the business telephone directory excluding those specializing in ceramic work.

The survey was conducted by first posting the questionnaire together with a covering letter, according to the method recommended by Dillman.[9] The participants were offered the option of returning the completed questionnaire by post or answering the questions in a telephone interview approximately one week after receiving the questionnaire.

The questions were designed to seek details of the average number of dentures constructed in a twelve-month period, whether the dentures were labelled, what fees, if any, were charged, and attitudes to the marking of dentures. The survey also asked if the practitioners had ever been requested to provide records for the identification of a former patient, whether they were aware of the Australian Nursing Home Standard requiring the marking of residents' dentures, and that the ADA recommended that dentures be marked. Data analysis was conducted using the statistics package SPSS for Windows.[10]

§SDI, Sweden.
,Corvic Corp, USA.

Results (Fig. 2)

General dental practitioners

Twenty-eight dentists of a total of 141 respondents indicated that they marked full dentures only in certain circumstances, and only five of these also marked partial dentures. One-third of these charged an extra fee, the most common being $10. Just under half of these dentists reported that their technicians charged them a fee to place the label.

The most common method of labelling in this group (89 per cent) was for patient details to be typed on paper which was then embedded in the denture. The other method of choice was to engrave the patient's initials into the fitting surface of the denture.

It was noted that those who marked dentures at all did not do so as a routine, the majority (89 per cent) only marking them for patients resident in nursing homes, while the remaining 11 per cent said that they did so for forensic purposes.

Most of those who did not mark dentures were unaware of the Nursing Home Standards or the ADA recommendation. There was a significant relationship between those who marked dentures and those who were aware of the Nursing Home Standards ($p<0.05$). A similar relationship was shown between the number of dentures produced annually and the number labelled.

Of the 80 per cent of general dental practitioners who did not label their dentures, half believed it was unimportant, a quarter could not be bothered and a quarter thought it too expensive. Twelve per cent said they did not know how to mark dentures and five per cent indicated that their technician complained about having to carry out this procedure.

A third of all general dental practitioners surveyed agreed that it should be mandatory to label dentures and just over half of these thought that technicians should be trained to do so routinely.

Specialist prosthodontists

Twenty-five per cent of specialist prosthodontists indicated that they marked the dentures they produced and there was a fee charged in all cases. The majority of dentures were marked for patients living in nursing homes and the method of preference was an inscribed paper strip embedded in the denture base.

Of the 75 per cent in this group who did not mark dentures, two-thirds believed it was too expensive, 16 per cent felt it unimportant and 16 per cent did not know how to do so.

Thirty-five per cent of the specialists knew of the Nursing Home Standards and 42 per cent were aware of the ADA recommendation.

Forensic dentists

Just over half (57.1 per cent) of the dentists who had received some postgraduate training in forensic odontology labelled the dentures that they produced and all said that their technicians charged an extra fee for it. All used a paper label embedded in the denture base, and three-quarters of these indicated that they did so predominantly for patients living in nursing homes; the other 25 per cent indicated that they sometimes marked dentures for forensic purposes.

Cost and technician's complaints were the major reasons cited by those in this group who did not label dentures.

Eighty-five per cent of dentists with forensic training believed marking dentures should be mandatory. Seventy-one per cent were aware of the Nursing Home Standards, and 57 per cent knew of the ADA recommendation.

Clinical dental technicians

Less than half (43.5 per cent) of the clinical technicians surveyed routinely marked the dentures that they produced. Of these, 90 per cent used a paper label embedded in the denture base and the other 10 per cent engraved the patient's initials into the fitting surface. They all indicated that they marked the dentures for patients living in nursing homes and 70 per cent of them charged an extra fee for doing so.

Of the clinical dental technicians who did not label dentures, 53.8 per cent believed it was unimportant and too expensive, and 61.5 per cent claimed it was too time-consuming.

Mandatory marking of dentures was supported by nearly half (47.8 per cent) of the clinical dental technicians surveyed and the majority (87 per cent) of them agreed that technicians should be trained to routinely label all dentures. Only one-fifth of the respondents in this category were aware of the Nursing Home Standards and the ADA recommendation.

Dental laboratories

Over half (55.8 per cent) of the dental laboratories surveyed labelled dentures, but only on the specific instruction of the prescribing dentist. Most of these (85 per cent) used a paper label embedded in the denture base. Only 5 per cent of them used an embossed metal strip as is widely recommended by forensic odontologists. Eighty per cent of laboratories charged an extra fee.

Discussion

This survey revealed that very few (19.9 per cent) general dental practitioners ever marked even some of the dentures that they produced, and mainly only

those dentures constructed for residents of nursing homes. A slightly higher number (25 per cent) of specialist prosthodontists labelled some of their dentures, again, mainly for the same representative patients. As might be expected, the level of denture marking practised was greater among forensic odontologists and those with some training in this field (57.1 per cent). This could be expected in view of their greater awareness of the standards and appreciation of the importance of denture marking in forensic situations, although unfortunately, not even all in this group carried out the procedure routinely. Although dental laboratories were generally willing to place labels they emphasized that the instruction to do so must come from the prescribing dentist.

A greater proportion (43.5 per cent) of clinical dental technicians labelled dentures, but not routinely and predominantly for nursing home residents. The higher level registered in this group may reflect the specific nature of their work and the large volume of dentures they produce. Indeed, the major reason for marking dentures given by both registered dentists and clinical dental technicians was to benefit residents of nursing homes. It is not surprising, therefore, that there was also some correlation between an awareness of the Nursing Home Standard and the practice of it. Clearly the high level of admitted ignorance of the Nursing Home Standard and the ADA recommendation is a contributing factor to the overall low level of denture marking in South Australia.

Twenty-seven per cent of the dentists contacted had been requested to provide records to assist in the identification of a patient at some time in the past. However, there was no correlation between this experience and their practice of labelling dentures.

Perhaps the most disturbing factor revealed by this survey was the relatively high proportion of dentists (51.5 per cent) who were not convinced of the importance of labelling dentures. In the best interests of society this situation should be addressed and strategies to change it should be explored without further delay. The importance of denture marking has long been recognized by the profession and allied forensic experts. More obvious solutions are education and compulsion through legislation. Education should begin at university level, instilling the practice and methods into the minds of students throughout their entire undergraduate training. Strategies more likely to succeed with existing practitioners are perhaps those offering strong (financial) incentives rather than penalties for non-compliance. Legislation should be considered as a means of last resort. Perhaps the strongest motivation might be of the risk of enormous financial claims for negligence by failing to label dentures.

Dentures are expensive items for most people and this factor suggests the feasibility of insuring them against loss. This would require suitable identification of each denture, and routine denture marking would achieve this. The small cost incurred would be well justified and would become integrated with the total cost of the dentures.

A higher proportion of specialist prosthodontists were aware of the Nursing Home Standard and the ADA recommendation (62.5 per cent, and 75 per cent, respectively), yet only 25 per cent of this group marked dentures either routinely or at all. Fifty per cent of the specialists, and 53.8 per cent of the clinical dental technicians cited the expense of marking dentures as their reason for not doing so.

In Australia, denture marking is recognized as a legitimate procedure for an essential service, and is accorded the item number 777 for which a fee is reasonable, yet no rebate is offered by the medical funds for this service. Perhaps as an incentive the health funds should be encouraged to cover this item as part of dental health insurance. Meanwhile, the advantages of denture marking and its ready availability should be discreetly presented to patients by all practitioners, emphasizing the justification of such a small extra cost. Quite apart from post mortem identification, in cases when denture wearers may be rendered unconscious through illness or injury, those with psychiatric problems, and those suffering loss of memory, their marked dentures would permit rapid confirmation of identity.

Despite the low rate of denture marking in South Australia, a high proportion of denture providers who did not label their dentures said they would comply if an easy, inexpensive method of doing so was demonstrated.

Conclusions

The purpose of denture marking is twofold: 1) it assists in the recovery and return of a lost or inadvertently transferred denture;[2] and 2) it facilitates the identification of edentulous persons[5] both living and deceased.

The results of this survey indicate that denture marking in South Australia is carried out by a small percentage of dentists. Some training in forensic odontology motivated a number to mark dentures more regularly, but still not in all circumstances. A greater, but still small, number of clinical dental technicians marked dentures.

The marking of dentures was not carried out routinely by any of the practitioners surveyed, and was done predominantly for residents of nursing homes. Awareness of the Nursing Home Standards and the ADA recommendation was not high.

Dental laboratories and technicians marked dentures only when specifically prescribed, and cost was seen as a major deterrent by all groups of respondents.

Recommendations

In consideration of the recognized social and practical value of denture marking, and the results of this survey, it is apparent that there is an urgent need for action to achieve the highest level of denture marking compliance by those members of the dental team involved in the provision of dentures to the public. The following recommendations to achieve this are offered as follows:

1) Education emphasizing the social and forensic value of marking dentures, the Nursing Home Standards, and the ADA recommendation is urgently needed at both graduate and undergraduate levels.

2) The practice of denture marking in all teaching and training institutions should be initiated immediately.

3) Negotiations with health funds should be undertaken to provide a rebate for the currently available item number.

4) Consultation with Ministers of Health and the ADA should be arranged to consider seriously the need for legislation covering the mandatory labelling of dentures.

5) Further research should be carried out into a) improving and simplifying methods of labelling dentures; and b) more effective ways of promoting the practice within the dental profession and the community.

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