Case Report

Subscriber identity module: A new method for denture identification

Shreya Colvenkar1

1Department of Prosthodontics, MNR Dental College and Hospital, Sangareddy, Andhra Pradesh, India

Received: May 2012
Accepted: March 2013

Key Words: Denture, forensic, identification

INTRODUCTION

Denture marking plays an important social and forensic role. Over the years, several surface marking and inclusion techniques have been reported in the literature.[1-9] Although, surface marking and engraving techniques are most preferred in terms of cost and time, they create rough surfaces that can be annoying for the patient in terms of comfort and maintenance of hygiene.[1] In addition, surface markers (spirits, fiber tip pens) can be readily removed by denture cleansers, abrasives or antiseptic mouth wash and needs to be reapplied.[1]

Inclusion techniques using metallic and nonmetallic labels[2] are cheap but can carry very little information. Microchips,[5] (RFID) Radiofrequency identification-tags[6] and barcodes[7-9] permit rapid and reliable identification of the wearer through storage of a large amount of information, but these techniques are costly and need sophisticated equipments to read the information. In addition, microchip data could only be inscribed by the manufacturer and not by the dentist. The barcode[7-9] also has the disadvantage in terms of limited areas available for bar codes and difficulty in scanning opaque pigmented acrylic resin.

Hence an attempt is made to present a new simple denture marking system using subscriber identity modules (SIMs). SIM is a fundamental standardized component of most cell phones and provides a store for personal information, such as a phone book entries and text messages, as well as operational information, such as that involving location.

PROCEDURE FOR DENTURE MARKING

Stage 1
Store the patient’s information in the micro SIM card (Airtel, Bharti Airtel Ltd., New Delhi, India) [Figure 1].

Stage 2
Cut a depression slightly wider than the SIM card using a lecron wax carver on the posterior lingual flange of the trial mandibular denture. After dewaxing, process the denture together with a wax sheet measuring 16 mm × 13 mm × 0.5 mm in accordance to the manufacturer’s instructions.

Stage 3
Complete the acrylization after standard curing cycle. Finish and polish the denture.

Stage 4
Disinfect, clean, and dry the prosthesis. Adjust the removable acrylic flap over the depression such that it

Access this article online

Website: http://drj.mui.ac.ir
Stage 5
Process the acrylic flap in a pressurized container (Confident Dental Equipment’s Pvt. Ltd.; Bangalore, India) with warm water (100°F, 20 psi) for 15-20 min. Finish and polish the denture and acrylic flap [Figure 2].

Stage 6
Wrap the SIM card with cello tape and place in the denture [Figure 3]. Cover the SIM card and depression with removable acrylic flap that has autopolymerized acrylic resin extension so that it snugly fits into the empty space between SIM card and depression border [Figure 4].

DISCUSSION
In the present article, SIM card denture identification stood out from the previously published methods in terms of cost as well as storage of information.\(^{5-7}\) SIM card is the heart of a mobile phone that contains 16-256 KB of memory. This memory is sufficient to store sufficient amount of patient’s information in the form of messages or contacts.
The information stored can be viewed and modified using a cell phone, which is easily accessible to all and does not need sophisticated techniques like microchip and barcode. The SIM card can be inserted in the cameo surfaces of the posterior lingual flange of the mandibular denture or buccal flange of maxillary denture, both in new and existing dentures that have not been labeled previously. These areas are not removed during post insertion adjustments or routine relining procedures and are better resistant to fire since denture, which remains in the mouth during incineration is well protected by the tongue and surrounding soft tissues. The dentist can easily carry out the procedure without requiring special training or a dental technician.

The disadvantage of this technique is that the SIM needs to be cut to a size of 12 mm × 15 mm and changed to a micro SIM. Only with the help of micro SIM adaptor, micro SIM can be changed back to normal SIM. Secondly extra time is needed to laminate the SIM card since oral compatibility is not verified.

CONCLUSION

The article describes a simple, cheap, easy to use and cosmetically appealing technique for denture identification. The information stored in the SIM card can be viewed and modified using a cell phone, which is easily accessible to one and all. SIM card denture identification is a new method; hence further investigations are required to evaluate its feasibility and its ability to withstand postmortem assaults.

REFERENCES

1. Harrison A. A simple denture marking system. Br Dent J 1986;160:89-91.
2. Todo J, Lukens EM. A technique for placing names in dentures. J Prosthet Dent 1977;37:469-71.
3. Ibrahim WM. Denture microlabeling technique. J Prosthet Dent 1996;76:104.
4. Ling BC. Computer-printer denture microlabeling system. J Prosthet Dent 1998;79:363-4.
5. Rajan M, Julian R. A new method of marking dentures using microchips. J Forensic Odontostomatol 2002;20:1-5.
6. Millet C, Jeannin C. Incorporation of microchips to facilitate denture identification by radio frequency tagging. J Prosthet Dent 2004;92:588-90.
7. Milward PJ, Shepherd P, Brickley MR. Automatic identification of dental appliances. Br Dent J 1997;182:171-4.
8. Agüloğlu S, Zortuk M, Beydemir K. Denture barcoding: A new horizon. Br Dent J 2009;206:589-90.
9. Rajendran V, Karthigeyan S, Manoharan S. Denture marker using a two-dimensional bar code. J Prosthet Dent 2012;107:207-8.
10. Gustafson G. Forensic Odontology. London: Staples Press; 1966. p. 29.
11. Haines DH. Identification in mass disasters from dental prostheses. Int J Forensic Dent 1973;1:11-5.

How to cite this article: Colvenkar S. Subscriber identity module: A new method for denture identification. Dent Res J 2013;10:553-5.
Source of Support: Nil. Conflict of Interest: None declared.