

Momentousness of denture labeling using Aadhaar number in Indian population

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ABSTRACT

Personal identification is of prime importance for forensic and medicolegal purposes especially in case of natural calamities, accidents, state of unconsciousness, or loss of memory. The denture labeling is an important method which has been acknowledged by the field of dentistry. Various denture labeling techniques have been advocated but none of them is universal. Aadhaar is the instantly verifiable national identification number assigned to residents of India, which is currently being used vastly by the Government of India. The article describes a simple, economical, and permanent method for inclusion of Unique Identification Number and bar code in dentures.

Keywords: Aadhaar, denture labeling, surface marking

Introduction

Identity may be defined as the distinctive characteristic belonging to any given individual.^[1] Identity of an individual has always been of prime importance in the society and has been considered as an important part of forensics. Individuals can be identified from traces of their DNA extracted from skin, hair, blood, saliva, and semen using DNA fingerprinting, also from the finger prints and ear prints, from the teeth or bitemarks using forensic odontology.^[2,3] Other methods of identification which can also be used are facial recognition systems, gait analysis, voice analysis, handwriting analysis, and biometric techniques.^[2,3]

Biometrics is defined as a method of identifying individuals using physiological or behavioral traits.^[4] Due to the rise in international crime and terrorism, countries are using biometric technology as

a citizen identity solution for greater security and for fabricating a national database of citizen records.^[5]

The Aadhaar (UIN), a 12-digit unique identity number, is an attempt of Indian Government to uniquely and digitally identify Indian citizens for the primary purpose of tracking the social security of an individual.^[6] The uniqueness of individuals is determined on the basis of demographics and biometrics (fingerprints and retina scans). Any Indian citizen, irrespective of age (even kids as young as 1 year) and gender, satisfying the verification process laid down by the Unique Identification Authority of India (UIDAI) can enroll for free.^[5] It is inspired by the Social Security Number issued in the USA and China.^[4,5] The Aadhaar is conceptualized to benefit citizens on many development parameters (Education, Health, Employment). The Government of India has made it mandatory to link Aadhaar number to various Government and Non-Government services such as banking, digital lockers, mobile phone connections, attendance chart of government employees, and vehicle purchase making it the most viable citizen identification system in India. With effect from 1 July

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2017, the central government has made it mandatory to link existing Aadhaar numbers with Permanent Account Number of taxpayers.^[6-8] The leading government and private hospitals who maintain the medical records of the patients online are linking the data with the individual's Aadhaar number. Hence, Aadhaar card is flaunted as more than an identity card.

A wide range of approaches, including forensic dentistry utilizing, teeth, and orofacial tissues, has been traditionally used since decades with denture labeling being one among them.^[9,10] Labeling of dentures is useful in the identification of victims of fatal disasters, misplaced dentures in hospitals, patients in long-term care facilities such as nursing homes and old age homes, as well as in patients who suffer from unconsciousness or psychiatric problems and for forensic identification purposes.^[11-14] Although no standardized method is followed in denture labeling, they are classified as surface marking and inclusion methods.^[10] The surface marking methods include engraving the cast, scribbling on dentures/writing on the denture surface with spirit pens but were not very effective as they got rapidly removed by one or more abrasive, denture cleansers, or antiseptic/mouthwash agents. The inclusion methods involve incorporation of microchips, lenticular cards, and radio-based tagging transponders into the dentures, which is expensive and time consuming.^[10,12,13]

This article describes a simple, quick economical and a very effective method for identification of edentulous individuals that requires no additional armamentarium.

Technique

1. After the complete denture try in, follow the regular steps for the processing of dentures, such as wax up, flasking, and wax elimination.
2. Scan the patient's Aadhaar card issued by UIDAI, which contains a unique identification number and barcode [Figure 1a].
3. Edit the scanned image in adobe Photoshop version 7.0 (cropping to retain only the unique identification number and barcode) to obtain an optimum size, which can be incorporated in the denture.
4. High gloss photographic paper is recommended to take print outs of the modified images. Cut the printed images in appropriate size and apply cellotape on both sides of the printed paper in order to prevent smudging of ink on contact with acrylic monomer.
5. Mix heat cure clear acrylic and pink acrylic (DPI heat cure, DPI, India) simultaneously. Place small amount of clear acrylic in dough stage on the posterolateral area of palate (in maxilla) and lingual flange area (in mandible). Place the label over it [Figure 1b] and sandwich it with another layer of acrylic.
6. To prevent the shifting of the label during the trial closures, the layer of acrylic is lightly flamed two to three times with the alcohol blow torch. Care should be taken not to burn or overheat.



Figure 1: (a) Patient's Aadhaar card issued by Unique Identification Authority of India (UIDAI). (b) Denture labels secured with clear acrylic

7. Pack the pink acrylic into the mold, do trial closures till no flash appears followed by bench cure, and heat initiated polymerization of the dentures.
8. Finish and Polish the dentures obtained after deflasking [Figure 2].

Discussion

In forensic dentistry, denture labeling plays a key role in identification of the unknown. Although a wide array of techniques have been used in private and commercial laboratories to identify the dentures and no standardized method is followed. Regulatory bodies (American Dental Association, 1982) have encouraged the newly fabricated prosthesis to be marked with an identification system (Ling, 1998).^[14] Besides the existence of numerous identification systems (voter card, ration cards, Permanent Account Number/PAN cards, passports, and driving license) in Indian subcontinent, none of them covers the entire population of India. The Unique Identification Authority of India (UIDAI) is an agency that issues a 12-digit number, which is unique for every citizen. This Aadhaar number can be used to identify the residents anywhere in the country in order to access certain benefits and services.^[6]

Kruger-Monson suggested certain requirements for denture labeling: the strength of the prosthesis must not be jeopardized; the system should be efficient, simple and cost effective; the identification mark must be able to withstand fire and humidity apart from being durable and visible.^[15] The above-mentioned



Figure 2: Processed complete denture with UIN label

criteria are met in the denture marking system explained in this article. Inclusion methods can be divided into two broad categories: Prefabrication techniques and Postfabrication techniques. In the postfabrication technique, the strength of the denture may be compromised due to the slot prepared for inclusion of the identification label. In contrast, the prefabrication technique used by us has no effect on strength of denture. No self-cure monomer is used in this technique, as the residual monomer which leaches out is well known for its side effects. The labels are placed on cameo surface (posterolateral part of palate and lingual flange); thus, the markers are easily accessible for reading, do not interfere with esthetics, and are retained even after the routine adjustments or reline procedures. No special devices such as X-rays or radiofrequency identification devices are required for reading the data contained in the label.^[16,17] An interesting point to be noted is that the bar code can be read by the applications downloaded in android mobiles. This technique is easily executable, economical, and permanent. Thus, we suggest employing this technique as a universal denture marking system in India.

Summary and Conclusion

Denture labeling using the unique identification number (UIN) can serve as useful evidence in forensic dentistry and various medicolegal issues. This technique offers the patients an esthetically suitable denture marking system which is inexpensive and permanent. Also, the equipments required are easily available in any institution, dental laboratory, or dental clinic, thereby making it possible to incorporate the UIN number in every denture.

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Conflicts of interest

There are no conflicts of interest.

References

1. Identity (social science). [Wiki]. Available from: [https://en.wikipedia.org/wiki/Identity_\(social_science\)](https://en.wikipedia.org/wiki/Identity_(social_science)) [Last accessed on 2019 Jan 10].
2. Forensic identification. [Wiki]. Available from: https://en.wikipedia.org/wiki/Forensic_identification [Last accessed on 2019 Jan 10].
3. <https://www.nlm.nih.gov/visibleproofs/exhibition/views.html>. [Last accessed on 2019 Jan 11].
4. Cofta P. Towards a better citizen identification system. *Identity in the Information society* 2008;1:39-53.
5. https://en.wikipedia.org/wiki/List_of_national_identity_card_policies_by_country. [Last accessed on 2019 Jan 11].
6. <http://uidai.gov.in/>. [Last accessed on 2018 Dec 01].
7. <https://www.bankbazaar.com/aadhar-card/benefits-of-aadhar-card-govt.html>. [Last accessed on 2019 Jan 11].
8. Barde S. A Multimodal Biometric System-Aadhar Card. *i-manager's Journal on Image Processing* 2018;5:1-6.
9. Pretty IA, Sweet D. Teeth in the determination of human identity. *Br Dent J* 2001;190:359-66.
10. Borrman HI, DiZinno JA, Wasén J, René N. On denture marking. *J Forensic Odontostomatol* 1999;17:20-6.
11. Shimoyama K, Ogawa N, Umino M, Nagao M, Odagiri K. The need for a denture marking system in geriatric institutions. *J Gerodont* 1992;7:8-13.
12. Lamb DJ. A simple method for permanent identification of dentures. *J Prosthet Dent* 1992;67:894.
13. Coss P, Wolfaardt JF. Denture identification system. *J Prosthet Dent* 1995;74:551-2.
14. Stevenson RB. Marking dentures for identification. *J Prosthet Dent* 1987;58:255.
15. Ling BC. Computer-printer denture microlabeling system. *J Prosthet Dent* 1998;79:363-4.
16. Kumar S, Banerjee S, Dwivedi H, Gupta T, Banerjee A. Personal identification using complete dentures. *Intl J Prosthodontics Restorative Dentistry* 2011;1:132-5.
17. Rajan M, Julian R. A new method for marking dentures using microchips. *J Forensic Odontostomatol* 2002;20:1-5.