Methods for Identification of Complete Dentures
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Abstract:
A simple method of placing a computer generated identification label on complete dentures has been described in the article. The equipments required are a computer printer and a film of transparency sheet. The denture labeling can be done with prefabrication or postfabrication technique.

Key Words: Cyanoacrylate adhesive, Denture label, Denture identification marking.

Introduction:
Denture identification systems are important for hospitalized patients, patients in long-term care facilities, for forensic identification purposes and other social reasons (Ling, 1998; Lamb, 1992; Coss & Wolfardt, 1995). After major disasters such as earthquakes, fires or floods, accurate & early identification of the dead & injured becomes of utmost importance. At times the only identifiable remains are a victim’s partial or complete dentures (Berry et al, 1995).

Our aging society, with the resultant growth in nursing home & hospital populations has increased the need for the easy identification of the prosthetic devices to be permanently labeled (Berry et al, 1995). Denture labeling is becoming more important each day as air travel and tourism are increasing. Regulatory bodies have recommended that all the prosthesis to be marked with an identification system, several techniques have been used in private & commercial laboratories to identify dentures (Ling, 1998).

Some procedures involve placement of a prepared label in the denture during fabrication. These involve an engraved, stamped metal or acrylic resin strip, disk, chip or printed paper, which is incorporated into the denture base during the flasking and/or packing process (Ling, 1998). These ‘prefabrication techniques’ are more permanent, but act as points of weakness, unless they are bonded to the acrylic resin (Lamb, 1992).

Under post-fabrication techniques, the less sophisticated postfabrication techniques differ only in the material & methods used to seal the labels after they have been placed in the prepared recess. The use of clear autopolymerizing resin to overlay the label is the most popular technique. A quicker & easier procedure that uses light-cured resin instead of autopolymerizing resin eliminates the need for a pressured curing unit (Berry et al, 1995).

The importance of denture identification was brought into focus by Dr. Robert H. Griffiths during his tenure as a President of American Dental Association (Stevenson, 1987).

Stevenson in 1987 suggested the use of tape wrapped disposable blade to cut the patient’s name or social security number in straight lines on buccal surface of the distobuccal flange & then rubbing lead pencil or ink pen over fine grooves to make them more evident. He also suggested an alternate procedure, wherein a sharp lead pencil could be used for writing name or numbers on the dry tissue surface of the denture. His opinion for the method was that it would require frequent remarking, possibly every 3 to 4 weeks & would be method of choice for short-term hospitalized patients.

Heath et al (1988) mentioned a technique in which the roughened surface of a finished denture could be temporarily marked with a fiber-tip pen & these marks could be protected against abrasion with layers of sealant.

Oliver (1989) advised the use of partly polymerized denture resin strips that unite to the base after curing. For protection of marks against abrasion he suggested a further resin layer placement over the label before final polishing.

Fiske et al (1986) mentioned a permanent method, which involved cutting a channel in the denture & either marking the base or inserting a marked strip. The channel was then refilled with autopolymerising...
acrylic resin. He had an opinion that the legibility detoriates as a result of interaction between acrylic resin monomer & some inks.

Lamb (1992) published a simple method for permanent identification of dentures. In this technique he mentioned the use of 4 to 5 mm wide clear autopolymerising acrylic resin sheets roughened on one side. The patient’s name & postal code or other identification marks were written backwards on the roughened side using a fine fiber-tipped pen. After trial closure, the marked label was placed with ink-side down in the chosen place before closing the flask & processing normally.

Berry et al (1995) suggested a post-fabrication technique for identification of prosthetic devices. They designed a special bur to prepare an ideal preparation site in the denture base. The identification label bearing the patient’s name, initials, driving license or social security number was computer generated in an easy to read font style of 4 or 5-point font size. The label was placed in 4 mm wide & 1 mm deep slot in the denture. One drop of monomer was placed onto preparation site before final placement of the label. A small brush was used to place small increments of saturated clear resin polymer. The prosthesis with label facing upwards was then placed in the plaster bowl filled with warm water & cured in a pressurized unit (20 psi) for 15 to 20 minutes.

They also suggested an alternatative procedure in which a special light polymerized Triad gel (Triad VLC system, Dentsply International) could be used in place of orthodontic resin.

Coss & Wolfaardt (1995) mentioned a denture identification system where a labeling machine was used to print a label on 9 mm or 12 mm tape. The label was inserted in the lingual flange of mandibular denture & posterolaterally in the palate or buccal to the tuberosity of maxillary denture. Autopolymerising acrylic resin was placed over the label & cured in a pressure-curing unit.

Ling (1998) suggested a computer-printer denture microlabelling system. Patient’s personal identification information such as name, sex, national identification card number & country of origin was computer printed using a character of 8-point font size. The label was then photocopied onto a transparency in 50% reduced size & chemically treated with cyanoacrylate acid esters adhesive solution. The microlabel was then incorporated into denture during the packing stage or alternatively the microlabel could be incorporated after the denture fabrication.

This article describes a simple method for identification of dentures, which could either be used as a prefabrication or postfabrication technique.

### Technique:

1. Type the patient’s name, age, sex, and date of denture insertion in a computer in 8-point font style.
2. Type the doctor’s initials & college/clinic name for easy identification at the recall visits in the same college/clinic.
3. This information is to be printed on an overhead transparency sheet. The sheet is cut into adequate size (Fig. I). Cyanoacrylate adhesive (Fevi Kwik, India) is placed over the printed matter (Fig. II). Care is taken not to rub the adhesive over the marked portion & a same size blank transparency sheet is placed over it. By doing this the printer toner is placed away from the monomer of denture base resin. Thus the deteroration of legibility is reduced. The two joined sheets are cut with sharp scissors for restricting the size of label (Fig. III).

   Now the printed identification label is ready for prefabrication or the postfabrication denture identification technique.

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**Fig. I: Adequate size of printed transparency sheet is cut**

**Fig. II: Cyanoacrylate resin Adhesive is placed to cover the label with second layer of transparency sheet.**

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4) In a prefabrication technique, the label is placed over the denture base resin after trial closure (Fig. IV). The denture is processed in a normal way (Fig. V).

5) In postfabrication technique, a slot of 1 mm deep is prepared on the finished surface of denture base, which is in approximate size of the label (Fig. VI). One drop of cyanoacrylate is placed in slot to properly position the label. Over the label, clear autopolymerising acrylic resin is mixed & placed in small increments. After the initial set, the denture is placed in warm water for about 10 minutes. The denture is removed & polished (Fig. VII).

6) The denture is then inserted in the patient’s mouth.

Discussion:
One of the important criteria for any denture identification system is the protection of the label-ink or toner. It has to be protected from the monomer of the denture base resin, the high temperatures of denture processing, finishing & polishing of dentures & wear of the dentures (Ling, 1998). The Prefabrication techniques are more permanent, but act as points of weakness unless they are bonded to the acrylic resin (Lamb, 1992). Lamb’s technique of 4 to 5 mm wide clear autopolymerising acrylic resin sheets can cause problem while closure of flask, as it is not flexible as compared to transparency sheet & so it cannot be packed with even layering of acrylic resin during final closure (Lamb, 1992). Thus it is a technique sensitive procedure.

On the other hand Postfabrication techniques are quicker & easier as compared to the prefabrication methods. Stevenson’s technique of rubbing lead pencil or ink pen over fine grooves to make them more evident is not a permanent method & may fade after subsequent use of denture. It would require frequent remarking, possibly every 3 to 4 weeks. Advantage of this method is that, it can be used for short-term hospitalized patients (Stevenson, 1987).

The technique described by Heath et al (1988) is a temporary method & the denture has to be remarked & layers of sealant have to be reapplied on a regular basis which may depend on patient’s use.

Fiske’s technique showed that the legibility of written material deteriorates as a result of interaction between acrylic resin monomer & some inks (Fiske et al, 1986).

Ling (1998) technique does not mention about protection of toner in the microlabel prompting usage of two sheets of transparency sheet in the described technique.
The technique reported by Berry et al (1995) for identification of prosthetic devices with an alternate procedure using Triad gel (Triad VLC system, Dentsply International) is the best regarding polymerization shrinkage but requires expensive investment of material & curing chamber which may be not possible in every clinic (Berry et al, 1995).

In the suggested technique the toner is properly covered in two sheets of transparency using cyanoacrylate adhesive. Thus the longevity of the denture label is obtained. The procedure is easy to use & is very cost effective, as it uses equipment that are available in any institution or office. The transparency sheet can be used again until it is fully used up (Ling, 1998).

The label, besides carrying information about the patient, also has the date of insertion, name of the doctor who has worked over it & the name of college/clinic. This would give a clear indication of the age of denture through which it is easy to identify the wear of denture, & oral hygiene procedures & maintenance of the dentures. Secondly the name of the doctor also helps for easy search for patient’s data from records that would be helpful in an institution/clinic.

The prepared label can be inserted into denture by prefabrication & postfabrication technique. In prefabrication technique the label is inserted on the intaglio surface after trial closure of denture flasks. The intaglio surface is the area where least adjustment is done during denture insertion. The background of the label is clear & only the black markings of the label can be clearly seen even after relining of dentures, if required, at further appointments (Ling, 1998).

In postfabrication technique the label is inserted in a preparation site, which is located in the flattest portion on the cameo surfaces of the lingual flange of the mandibular denture and/or palate of the maxillary denture. These sites do not interfere with esthetics of the denture. Generally these sites are acceptable for the patient. These areas are also not removed during postinsertion adjustments or routine relining procedures (Berry et al, 1995). Added advantage of this technique is that the identification label appears on the denture tissue surface covered by a layer of clear acrylic resin thick enough to resist normal cleansing & even some surface loss if adjustment is required (Lamb, 1992).

Summary & Conclusion:
This article describes easy to use & very cost effective way of denture labeling. The added information about the date of denture insertion, name of doctor & the institution/clinic is helpful at the recall visits. The equipments required are easily available in any institution, dental laboratory or dental clinic.

By this method denture labeling could be done in existing prosthetic devices which were not labeled previously or it could be incorporated in newly constructed prosthesis.

The procedure could be easily performed by dental auxiliary personnel thereby reducing workload for the dentist.

Bibliography: