

## DENTAL EQUIPMENT USE IN DERMATOLOGY

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Sir,

Due to a sharp increase in dental practitioners in most cities, there is a proportionate increase in number of dental material suppliers. Dermatologists have been using many instruments originally used by dentists in dermatology practice. They hesitate to buy from dental equipment suppliers and have to pay additional costs in purchasing from suppliers from metropolitan cities.

The following instruments can be used by dermatologists in their practice:

### 1. Dental micromotor

Before introduction of motorized punches in hair transplant, manual punches were used to harvest grafts which had high transections rate and low maximum harvest counts. (300 grafts per hour) However with the introduction of the motorized SAFE SCRIBE™<sup>[1]</sup> (Dr. James Harris, USA) transection rate and time was reduced and speed of graft harvest increased to 700 grafts per hour. Follicular unit extraction (FUE) has seen a revolution after the introduction of motorized punches. As a result, now most hair transplant surgeons employing FUE method of hair transplant use a motorised hand-piece. Hair transplant surgeons have been using motors supplied by dental equipment dealers for their efficacy and cost-effectiveness. In the authors' experience, dental instrument suppliers sell dental micro-motor which is effective as well as cheap as compared to those supplied by dermatology instrument dealers. Dental micromotor used by endodontists are more advanced for follicular graft harvesting as these machines additionally display torque and RPM of the motor.

### 2. Autoclave pouches

Single use plastic/ paper sterilisation pouches are widely used for small instruments in dermatology and dentistry. These



**Figure 1** : Autoclave pouch with indicator for steam and ethylene oxide.

instruments remain sterilised in pouches for a period of 6 months.<sup>[2]</sup> Most pouches come with indicators to check proper sterilisation. However, the authors prefer to pack all instruments in a single pouch making it not only accessible but also convenient. Autoclave pouches are available in various sizes based on requirement.

### 3. Steam Indicators

They can be pasted on the walls of the autoclave drum. On exposure to steam for 7 minutes at 135 °C/ 20 minutes at 121 °C, they change colour from light to dark and indicate adequate sterilisation. (Figure 2a and 2b)



**Figure 2a** : Autoclave pouch with indicator for steam and ethylene oxide.



**Figure 2b** : Indicator after autoclave

### 4. Strip rolls

These are similar to sterilisation pouches but they need to be sealed from both ends with a heat sealer.

### 5. Loupes

Magnification is required in many dermatological procedures like hair transplantation and dermatosurgery. In dental surgeries, it is used commonly in procedures involving endodontic surgery by dentists and hence, a wide range of loupes is usually available with dental suppliers<sup>[3]</sup>.

### 6. Keloid surgery (Dental putty)

During cryo-therapy, surrounding normal skin needs to be protected by cold injury and accidental blisters. In such scenarios, dental putty<sup>[4]</sup> can be used to cover the surrounding skin before cryotherapy to prevent the spread of liquid nitrogen and skin damage.

### 7. Carbide burrs

Dr Kurtin, a dermatologist practicing in New York, in collaboration with Dr Robbins<sup>[5]</sup>, modified powered dental equipment for use in dermabrasion<sup>[6]</sup>. Robbins also developed the diamond fraise, which is widely used even today for dermabrasion. Carbide burrs can be used for recipient site preparation for epidermal graft surgery in stable vitiligo which are available in dental stores in various shapes and sizes.<sup>[7]</sup> (Figure 3) These can be attached to a dental micromotor. The authors use a dental hand piece as it produces more torque and doesn't heat up easily in long procedures. Diamond fraises used in dentistry can be used for debulking of nail plate in cases of onychomycosis<sup>[8]</sup> and other dermatosurgical indications.



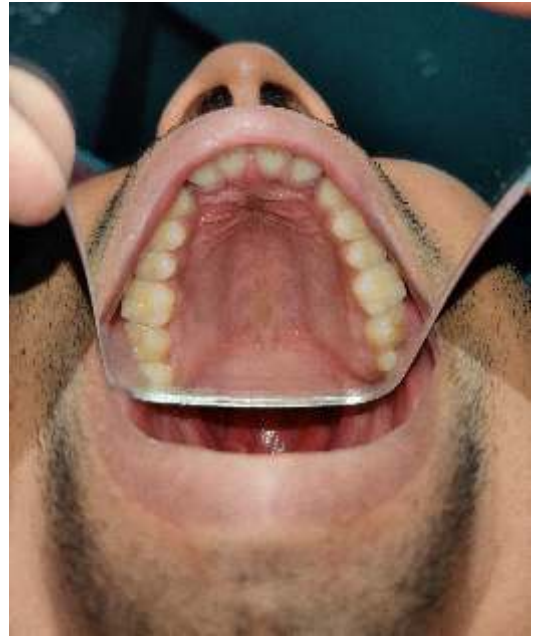
**Figure 3** : Carbide burr used for dermabrasion of recipient area in Vitiligo surgery.

### 8. Intra oral mirror

Photography for record maintenance, reporting and monitoring the treatment outcome is mandated by most clinicians. With the advancement of phone cameras, it has become easy for doctors to keep photography records. Intra oral photography is difficult task as lighting is low, focus doesn't work well with phone and DSLR camera. Herein, dental mirrors (Figure 4) help to visualize and capture intra oral areas like the hard palate. (Figure 5).



**Figure 4** : Intra oral photographic mirrors for palatal and buccal photography.



**Figure 5** : Photograph of hard palate by palatal mirror.

### 9. Autoclave

Sterilization is the most important aspect even in minor surgeries. A good sterilisation system in a clinic is very important for any procedure. Autoclaves are of various types, however most commonly used autoclaves are pressure-cooker type. They are (Figure 6) preferred in most clinics due to their low cost. They use steam under pressure (15 psi to 18psi at 121°C to 134°C) for 15-20 minutes which kills endospores<sup>[9]</sup>. The main disadvantage is the load is wet after the cycle and have very poor air displacement capabilities. The other types of autoclaves are Class B autoclaves which are miniature versions of larger hospital sterilizers.<sup>[10]</sup> Class B autoclaves have a wet and a dry cycle in which a vacuum pump is used for removing air and creating a vacuum. The second cycle dries the load by vacuum pump which sucks out the moisture from the load and are ideal for clinics but the cost is 10-15 times as compared to basic steam



**Figure 6** : Autoclave

autoclave. Main advantage of class B autoclave is the load is dry after the cycle and due to two cycles, sterilisation is superior. Pressure cooker type autoclaves are available with dental suppliers as size needed for dermatology clinic is similar to dental clinics. Class N auto clave Steam: Type of autoclave which displaces the air through air jets or by positive pulses by a process known as gravity displacement. They differ from class B as they do not have a dry cycle and their cost is less than class-B autoclaves<sup>[11]</sup>. In skin clinics, the size of instruments are similar to those used by dentists. Hence, autoclaves used by dental suppliers can be used.

### 10. Dental syringes

Dental syringe has a glass vial which has been used by Dashore S<sup>[12]</sup> to make biofillers as glass vial can be heated at 100 degree centigrade. The author heated coagulated platelet poor plasma (PPP) to act as a bio-filler and treated chicken pox scars. He reported that biofillers served as a temporary volumizer for a period of six month duration, which can be used as an alternate for hyaluronic acid which is expensive and out of reach for many patients.

### 11. UV chamber

Ultraviolet rays of 200-280nm (UV-C) is germicidal and can kill microbes without heat or chemicals. Once instruments are sterilised, they need to be maintained in the sterilized state till their use. After cleansing of instruments, they can be kept in the UV chamber for 10 minutes prior to usage. UV light is not very effective for organic materials as reflection is necessary for ultraviolet rays to work. UV chambers are small units which can be installed in the clinic and if switched on for 10 mins before procedure it sterilizes instruments to be used. (Figure 7)

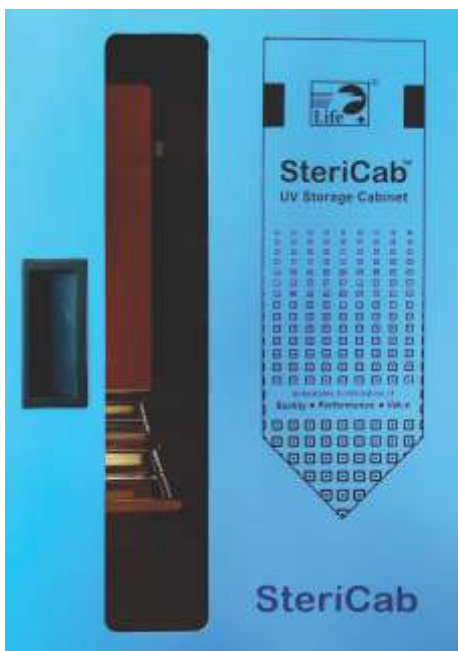


Figure 7 : UV Chamber



### Conclusion

Purchasing instruments from dental suppliers may, in fact, be better and cheaper than sourcing the same through dermatological suppliers. The authors have tried to narrate the same through this article.

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