

Diode Laser Ear Piercing: A Novel Technique

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ABSTRACT

Earlobe piercing is a common office room procedure done by a plastic surgeon. Various methods of ear piercing have been described. In this article, we describe a novel method of laser ear piercing using the diode laser. An 18-year-old female patient underwent an ear piercing using a diode laser with a power of 2.0 W in continuous mode after topical local anaesthetic and pre-cooling. The diode laser was fast, safe, easy to use and highly effective way of ear piercing. The advantages we noticed while using the diode laser over conventional methods were more precision, minimal trauma with less chances of hypertrophy and keloids, no bleeding with coagulation effect of laser, less time taken compared to conventional method and less chance of infection due to thermal heat effect of laser.

KEYWORDS: Diode, ear piercing, laser

INTRODUCTION

The art of body piercing is an age old process for the people in the developed countries. However, nowadays, it has evolved as a part of their fashion process and the ear being the most common body part pierced.^[1,2] Although it is a routinely performed procedure, it is not without complications such as oedema, haematoma, infection and keloid formation. Lasers have found widespread use in medicine. Most commonly used in dental surgery, the laser scalpel is nowadays used almost in all procedures due to its safety, precision, ease of use, haemostasis, less post-operative pain and oedema and lesser scarring. In this article, we would like to describe a novel method of laser ear piercing using the diode laser.

CASE REPORT

An 18-year-old female patient visited the plastic surgery outpatient department, with a desire to get an ear piercing. The patient already had pierced ear lobule and wanted a second piercing above the first one. After routine blood investigations had been done, the procedure was carried out in the department laser

operation theatre. Topical local anaesthetic EMLA was applied 1 h before the procedure. Adequate safety precautions were taken. The chosen site for piercing was marked, and non-contact cooling was applied. After ensuring adequate cooling and local anaesthesia, DOC MEDICA Diode laser™ (DOC MEDICA SRL, Corso Casale, Torino, Italy) with a power of 2.0 W in continuous mode was used to make a tract from the anterior to posterior direction [Figure 1]. Once the tract was made, a gold stud was introduced through the tract [Figures 2-4]. The same procedure was repeated on the opposite side.

Intraoperatively, it was noticed that there was very minimal bleeding. The probe was almost the same size as the earring stud, and the long tip was comfortably tunnelled to the other side. There was no need for any traction to the ear lobule and the anatomy was maintained, so the direction of the tunnel was made in the desired way. The patient did not experience any pain

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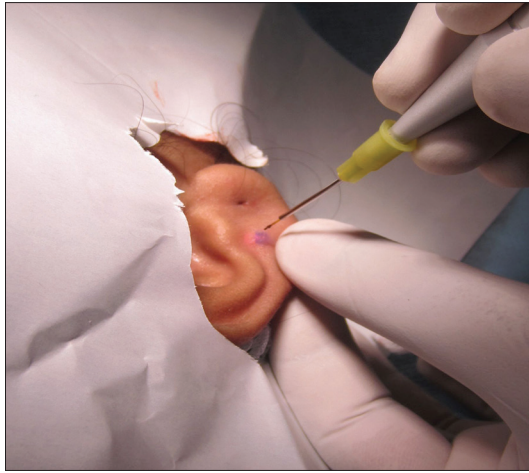


Figure 1: Applying diode laser and making the tract from anterior to posterior direction



Figure 2: Golden ear studs being inserted through the tract with accuracy and hemostasis

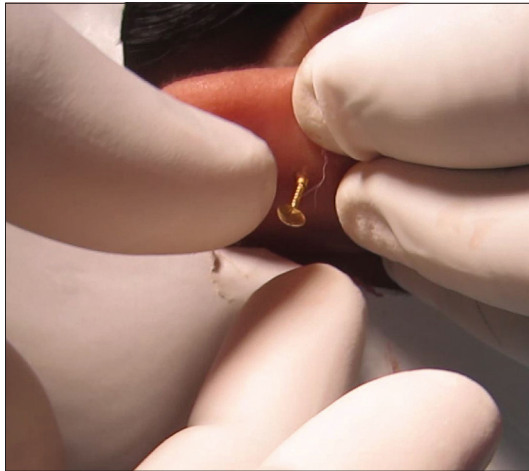


Figure 3: Screw is tightened to the stud with proper visibility



Figure 4: Ear stud in place, at the exact place marked pre-operatively

during the procedure. The procedure was completed on both sides within 5 min [Video 1].

The patient was advised to apply an antibiotic ointment at the site of piercing every day for 1 week. She was also advised not to remove the studs for at least 4 weeks. The patient was followed up for 2 weeks. No post-operative complications were noted.

DISCUSSION

Various methods of ear lobe piercing have been described. The wire technique which necessitates serial dilatation of the tract until the suitably sized ear stud can be placed is a painful process. Piercing guns used very commonly among jewellers did not gain much acceptance among doctors due to the higher incidence of infection.^[3] The most common technique used is the railroading method, wherein an 18-gauge needle is railroaded over a 26-gauge needle over which the tip of the earring is guided through. A newer method of ear

lobe piercing was described by Lamba and Gupta, in which an 18-gauge BD Insyte-W intravenous catheter was used for piercing. The CO₂ laser has been used for ear piercing by Chang *et al.* in 2010.^[3,4]

Diode laser was first used in dental practice. The electric current is the pump source which produces photons which are conducted through a laser active medium. It works on three wavelengths, 810, 940 and 980 nm.^[5] It is cheap, small in size and has a long flexible fibre cable which makes the diode laser scalpel easy to use.^[6] The use of diode laser for ear piercing has many significant advantages over the conventional techniques.

The procedure can be carried out with topical local anaesthesia combined with various pre-cooling methods used in conventional laser therapy such as cold gel application and cryospray application. This avoids the need for an injection before the procedure and can be useful in children. The laser scalpel instantly ablates

the tissues it cuts causing excellent haemostasis.^[7] In the ear, where there is rich blood supply and bleeding is a common problem, the use of laser scalpel for piercing holds this excellent advantage. There is instant sterilisation of the wound and reduced bacteraemia.^[8-10] This causes very minimal chances of post-operative perichondritis or wound infection reducing the chance for keloid formation.

The diode laser causes very minimal tissue damage. Hence, there is reduced oedema, minimal wound contraction and scarring. Studies have shown that the use of piercing gun or 16-gauge cannula for piercing cause stripping of the perichondrium from the cartilage which is more at the exit site.^[11] This damage to the relatively avascular cartilage makes the ear more prone to infection. As the diode laser probe is precise, causing less tissue injury the chance of damage to cartilage is reduced greatly and hence the chance of post-procedure keloid formation is also reduced.

Chang *et al.* conducted a study in 2010, comparing CO₂ laser and spring loaded gun for ear piercing. The study concluded that though there was pain intraoperatively when the laser was used for piercing, the post-operative pain was significantly lesser than when spring loaded gun was used.^[1,2] We have noticed that tip of the diode laser is almost of the same size of the earring studs and its penetrating property with minimal coagulation will be more ideal for the purpose. After the procedure, it was found to have numerous advantages compared to the conventional methods and the CO₂ laser method.

CONCLUSION

The diode laser is a fast, safe, easy to use and highly effective way of ear piercing. The advantages we noticed while using the diode laser over conventional

methods were more precision, minimal trauma with less chances of hypertrophy and keloids, no bleeding with coagulation effect of laser, less time taken compared to conventional method and less chance of infection due to thermal heat effect of laser. No need for local anaesthetic injection as it can be done under skin coolants. Thus, we recommend its use for all ear piercings.

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Conflicts of interest

There are no conflicts of interest.

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