Piercing of the Ear Using Carbon Dioxide Laser

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Piercing involves puncturing or cutting a part of the human body to create an opening for placement of jewelry. Various forms and lesions of body piercing have been documented throughout human history, and its popularity has led to increasing concerns about beauty and fashion. Piercing can be performed by various methods including use of piercing guns, needles, safety pins, catheters, and magnetic earrings. However, each method has some disadvantages including contamination or aseptic conditions. Although piercing is gaining in popularity, information about the evaluation of associated medical complications is lacking and exact statistics for these procedures are also unavailable. Thereafter, the carbon dioxide laser has been introduced as a better alternative for piercing, but reports are still rare. We report on a female patient who had her ear pierced on the scapha using a carbon dioxide laser. No major complications including infection, bleeding or scarring was observed. We suggest that the carbon dioxide laser is a safe, precise, and aseptic technique for ear piercing and it can also be applied in body piercing of other parts.

Key words

Carbon dioxide laser; Piercing

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INTRODUCTION

Piercing, which is puncturing a part of the human body to create an opening for a jewelry has been documented in both males and females throughout human history all over the world, and nowadays it is gaining even more popularity as concerns about beauty and fashion is growing. The most popular site for body piercing is known as the ear,¹ but there are many other sites which can be pierced in the body including the nose, tongue, lips, eyebrow, navel, nipple, and genital area.² Even on the ear, there are many different lesions which can be pierced including the ear lobe and cartilage areas such as the helix, scapha, and tragus. Although most kinds of body piercing is mostly performed in teenagers and young adults, there are

increasing demands even in middle-aged populations, regardless of social classes. However, despite interest about body piercing for cosmetic purposes is growing, exact statistics of these procedures and information about its safety and associated medical complications is insufficient.³ Piercing practices are mostly performed in a non-standardized way in beauty shops or accessory shops rather than in clinics. Reports of complications or side effects after piercing are also increasing as the frequency of these procedures increase. Therefore, necessity is arising for a safer and better, standardized method which can be used in piercing.

In this report, we present a female patient who had her scapha pierced using carbon dioxide (CO₂) laser. We recommend it as a safe and precise, sterilized piercing

Fig. 1. Clinical photographs showing the right ear of a 32 year-old female patient before the piercing procedure (A), and after marking the site to be pierced on the scapha area (B).

Fig. 2. For local anesthesia, 1% lidocaine injection was done (A) and a chalazion clamp was applied. A small wood stick was placed behind the chalazion clamp to prevent any damage or injury on the post-auricular lesion (B).

method which can be simply performed in a dermatology clinic without any major complications.

CASE REPORT

Ear piercing on the scapha was performed on a 32 year-old female patient with a CO₂ laser (Lutronic Corp., Goyang, Korea). She already had her earlobes pierced several years ago, and this time she wanted to pierce her cartilages on the scapha area. Her ears were cleansed with alcohol and dried, and markings were done with a sterile surgical marking pen to perform piercing on the exact site the patient wanted (Fig. 1). The marked sites were shown

Fig. 3. Clinical photograph of the CO₂ laser being performed in a continuous mode on the marked scapha.

to the patient with a mirror for her confirmation. After 1% lidocaine injection for local anesthesia, a chalazion clamp was used to firmly hold the ear and to unfold the curved cartilages. A small wood stick was placed behind the chalazion clamp to prevent any damage or injury on the post-auricular lesion (Fig. 2). Then, CO₂ laser was performed in a continuous mode with 6W power (Fig. 3). The aiming beam provided guiding on the accurate site without direct contact on the ear. Still with the chalazion clamp placed, alcohol cleansed earrings were inserted on the pierced sites and thereafter the clamp was removed (Fig. 4). The patient was instructed to wear the earrings for 4 weeks. No major complications including infection, bleeding or scarring was observed after the procedure.

DISCUSSION

Although piercing is nowadays a very popular cosmetic procedure, exact statistics about its prevalence or related complications is inadequate. Lack of information may be due to its easiness and as it is a simple procedure, it is commonly performed by non-medical personnels in beauty shops or accessory shops even more frequently than by medical personnels in specialized, properly equipped clinics. The procedure is not standardized and therefore subjects are easily exposed to various complications including pain, bleeding, infection, contact dermatitis, keloids, traumatic tear, elongation of the piercing site, cyst formation, and granulomas.³⁻⁶ A survey which was performed against 115 Korean female college students reported that 96.5% of them were at least once pierced in the ear throughout their life,⁵ and results from

Fig. 4. After penetration of the scapha cartilage with CO₂ laser, alcohol cleansed earrings were inserted on the pierced sites with the chalazion clamp placed (A), and thereafter the clamp was removed (B).

a survey performed among 481 college students in the United States reported that 42% of male and 60% of female students had body piercings,⁶ showing how much it is a wide-spread practice. In another survey including 236 Korean college students, the prevalence of ear piercing was 56%, and among them 60.6% experienced at least one complication.⁴

A piercing gun or a needle or the jewelry itself is most commonly used to penetrate the ear or even other parts of the body when the procedure is performed by non-medical personnels. It is generally performed under suboptimal hygiene conditions. There are no regulations or medical guidelines and therefore potential risks of bacterial or viral infections even including hepatitis or HIV always exists.^{3,7} Furthermore, these procedures done by non-medical personnels can be inaccurate with asymmetry and can cause tears of tissues resulting in many medical and cosmetic complications.

Accordingly, demands for a safer, standardized method which can be used in piercing has been growing, and CO₂ laser has been introduced as an alternative method for ear piercing.³ It was shown that the severity and duration of pain after ear piercing was less in the CO₂ laser pierced group compared to the spring-loaded gun pierced group.³ Wound healing was also better in CO₂ laser treated sites with less scar contraction compared to scalpel wounds.³ 10,600 nm CO₂ laser is absorbed by water resulting in vaporization of intra/extracellular fluid and disintegration of cells. It can cleanly incise the target tissue with minimal surrounding tissue damage as it is also known as a laser scalpel.^{3,8} Thermocoagulation occurs in the CO₂ laser ablated zone, and small blood vessels are cauterized providing hemostasis and a clean, dry field.⁸ Clinicians can use the aiming beam to precisely position the CO₂ laser beam on the wanted site, and the time of exposure and power, shooting angle can be easily controlled by the operator. Another advantage of CO₂ laser in piercing is that it can be done in an aseptic condition.

In this report we presented a female patient who had her ear pierced on the scapha with CO₂ laser. It is known that some minor complications can be noted after CO₂

laser piercing such as erythema and itching, but no major complications were observed. Despite piercing is thought to be an easy and safe procedure, it is actually a procedure which has to be done in caution because it can cause various degrees of complications and therefore is recommended to be performed in a well-equipped clinic by medical personnels. Therefore, dermatologists can easily play a major role in performing piercing and also preventing its complications. Although more experiences should be collected for it to be safely applied in other sites of body piercing, CO₂ laser can be a good and simple, safe tool for dermatologists to perform piercing particularly on the ear.

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