Common complications after auricular piercing in Korea: case reviews and treatment

Sangmin Hyun, MD, PhD

Shimmian Rhinoplasty Clinic, Seoul, Rep. of Korea

Auricular piercing, including earlobe piercing, is the most popular procedure for penetration of jewelry into the body. As the number of preferred auricular piercings is increasing, the number of related complications is also increasing. Complications following piercing procedures are variable and various treatments have been introduced. I aimed to introduce the various complications that arise after auricular piercing and suggest appropriate treatments based on my clinical experience. I conducted article reviews and reflected on clinical experience to discuss the appropriate treatments for complications after piercing. There have been advancements in understanding of complications after auricular piercing and its treatments. The sharing of this knowledge has led to improved treatments and management. Auricular piercing is a simple procedure, but the treatment of complications is often difficult and troublesome. As the number of preferred piercings is increasing, research on the treatment of complications should be continued.

Keywords: auricular piercing; granuloma; keloid; perichondritis; contact dermatitis; split ear

Introduction

Body piercing is defined as “a penetration of jewelry into openings made in body areas like the eyebrows, helix of the ear, lips, tongue, nose, navel, nipples, and genitals” [1]. Piercing has been a well-known practice of body ornamentation for centuries and has been connected with religious and cultural purposes. The modern trend of piercing was born in the 1970s in the United States of America and quickly spread to many other countries [2]. The estimated prevalence of earlobe piercing for women in England, aged 16–24 years, is approximately 46% [3]. A recent definition of body piercing did not include earlobe piercing, but this piercing is the most popular procedure for penetration of jewelry into the body [4]. The number of complications after piercing may rise as the number of auricular piercings, including earlobe, increase. The complications after auricular piercing can be described as general or local complications.

General complications include viral infections (hepatitis B virus, hepatitis C virus, and Human Immunodeficiency Virus (HIV)) [5] and bacterial infections (endocarditis and sepsis) [6]. Local complications occur in about 20% of cases with ear piercing, and may include granuloma, contact dermatitis, perichondritis, and keloids [4]. Saraf estimates that minor local complications of auricular piercing appear in approximately 20% of patients, whereas serious complications are observed in only approximately 3% [7]. Complications following procedures are variable and many treatments have been introduced. As the number of complications increases after auricular piercing, the clinician should be aware of the various treatment methods.
This paper is designed to introduce various local complications after ear piercing and suggest proper treatments based on the clinical experience.

Materials and methods

A case study and literature review were conducted to determine the common complications of auricular piercing in Korean clinics. Personal cases and clinical experiences were reviewed with a focus on the appropriate treatments for complications after auricular piercing.

Results

Local infection (granuloma)

Local infection (granuloma) is the most common complication of the auricular area after piercing. A small granuloma can be observed on the piercing hole and pain and exudate may be present in more severe cases. These can be caused by physical irritation by short piercing or infection by hair. A previous study reported repetitively growing granulomas due to palladium-induced allergic reaction [8]. In the case of a small granuloma, the greatest improvement is achieved by replacing the piercing with a medical silicone piercer and applying antibiotic ointment (Fig. 1). However large granulomas can be treated with surgical excision or intra-lesional steroid injection (Fig. 2). If granulomas occur repeatedly, removal of the piercer or replacement of the piercing material with titanium or gold is recommended.

Contact dermatitis

Contact dermatitis is one of the most frequent reasons for medical visits because of complications caused by piercing. Metal allergies from piercing may cause edema, pruritus, and exudate on the periphery of the piercing hole (Fig. 3). It is important to distinguish contact dermatitis from local infection or acute perichondritis. The presence of an itching sensation and tenderness are the important differentiating points. Local infection and perichondritis are accompanied by tenderness and pain, but contact dermatitis can be diagnosed when there is no tenderness or pain, but only an itching sensation. Treatment of contact dermatitis can be managed by removing the causative
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Piercer and applying topical steroid ointment to the affected area. If itching or edema is severe, oral antihistamines and steroids may be helpful. In addition, if there is a large amount of exudate or bullae, wet dressings can reduce sequela, such as scarring.

Perichondritis

Auricular piercing of cartilage sites, such as the helix or concha, may lead to perichondritis and permanent deformities may occur if treatment is delayed. Cartilage is particularly at risk because of its avascular nature. Evidence suggests that 95% of perichondritis cases are due to *Pseudomonas* infection, followed by *Staphylococcus aureus*, and group A *Streptococcus* [9]. If perichondritis is strongly suspected and presents with tenderness, edema, and heating sensation in the auricular area, preferred treatment is to immediately prescribe fluoro-

![Fig. 3. Contact dermatitis after high ear piercings. Result one week after wet dressing, steroid ointment, prescription for anti-histamine, and methylprednisolone.](image)

quinolone to treat the suspected *Pseudomonas* infection. If an abscess is already formed, incision and drainage with vigorous irrigation, is a way to prevent subsequent cartilage collapse (Fig. 4). The severe deformities seen after perichondritis require a strong framework to reconstruct the collapsed contours of the ear. Conchal cartilage, prosthetic materials, and costal cartilage are used to reconstruct the ears. Conchal cartilage is too soft to produce a robust framework and prosthetic materials create too high a risk for further infection. To date, the most effective and safe material is the costal cartilage [10]. Nasal septal cartilage also can be used to assist with partial reconstruction of the ear, such as the ear lobule [11].

![Fig. 4. Perichondritis after high ear piercing. Result one week after incision and drainage along with a prescription for ciprofloxacin.](image)

Keloid

A keloid can appear months, or even years, after auricular piercing. They tend not to regress and often require surgical treatment. If the size is small, a steroid injection can be used when treated within six months of appearance. However, if the size of the keloid is not reduced significantly after the steroid injection, surgical treatment is inevitable if removal is desired (Fig. 5). For intra-lesional steroid injection, triamcinolone acetonide solution is diluted to a 1:3 or 1:5 ratio, and injections are generally injected 0.3–0.5 ml/cm², until the lesion becomes pale at three to four-week intervals. Steroids should be injected into the lesion to prevent side effects, such as atrophy of normal tissues and discoloration. If the lesion is flattened and pain or itching is improved, the injection can be stopped, but if symptoms recur, the injection is resumed.

If keloid has not been more than six months, a steroid injection can be given once more even though there is no response to the first steroid injection. However, if there is no response to the first injection and keloid has been present for more than
six months, surgical treatment should be considered. The principles of surgical treatment are complete resection of the keloid, no deformation of the ear after surgery, and no tension on the suture site to reduce keloid recurrence. Keloid recurrence is reported to be 45%–100%, therefore surgery without adjunctive treatment makes recurrence more likely [12]. Postoperative steroid injection, compression therapy, silicone gel sheet, and radiation therapy as adjunctive treatment are used to reduce recurrence after keloid surgery [12,13]. My preference is to use steroid injections on the suture site after a keloid resection and at intervals of every four weeks for six months thereafter. This has resulted in excellent outcomes, with a non-recurrence rate of approximately 90% after a follow-up period of six months (Fig. 6).

### Split ear

Split ear occurs when the ear is either torn through a single episode of trauma or through repetitive wearing of heavy earrings or piercings. Various techniques have been described to repair split ear, including z-plasty, the three-flap method, and tongue-in groove technique [14,15]. My preference is a straightforward excision of the healed edge of the cleft ear and simple repair with interrupted sutures (Fig. 7). As the split ear does not have loss of skin and soft tissue, there is no need for additional incisions or removal of the skin. Scarring is rarely seen if delicate suture techniques are used for repair. However, if there is asymmetry of auricular shape or the split length is greater than 1 cm, z-plasty should be performed to adjust the symmetry and to make the scar less visible. Ideally, it is best not to re-pierce the surgical site after surgery, but a light piercing or earring may be worn after six months.

### Discussion

Piercing is a long-standing procedure for religious or cultural purposes, but in recent years it has been widely practiced as a means of personal expression by both adolescents and adults. Piercing of the ear is especially common in women and many women undergo more than one piercing. However, multiple piercings increase the risk of transmission of viral infections, such as the hepatitis B virus, hepatitis C virus, and HIV. It can also have severe consequences, such as endocarditis. In the case of cartilage piercing, bacterial spread of *Pseudomonas aeruginosa* may cause acute perichondritis and permanently deform the ear.

Although the piercing procedure itself is not difficult, it can
lead to sometimes fatal consequences. Therefore, piercing should be performed using hygienic practices and it is necessary to use only disinfected, disposable devices to prevent infectious diseases. Proper treatment of complications is also important to prevent fatal consequences caused by piercing. In conclusion, auricular piercing is simple, but the treatment of complications is often difficult and bothersome. In this paper, complications that may occur after ear piercing and the treatment methods for each complication have been discussed, but the quest for improved treatments should be continued.

Conflicts of interest

The author has nothing to disclose.

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