Complications of Ear Rings

Gregory O’Toole MBChB MD
Jennifer C Lane BA BMBCh

Department of Plastic and Reconstructive Surgery
The Royal Free Hospital, Pond Street, London, NW3 2QG, United Kingdom.

Corresponding author: Mr Gregory O’Toole MBChB MD

Department of Plastic and Reconstructive Surgery
The Royal Free Hospital, Pond Street, London, NW3 2QG, United Kingdom.

Telephone: +44 (0) 20 7794 0500 ext. 31302
Fax: +44 (0) 20 7830 2195
Email: gregotoole@nhs.net

Summary
In this paper the complications of ear piercing are considered and the treatment of resultant deformities is described.

Keywords: earring; deformity; reconstruction; morbidity
Introduction

Ear piercing has throughout history and across many cultures had varied purposes, from a demonstration of religious devotion to an expression of sexuality linked to certain rites of passage.\textsuperscript{1} In addition to the ears, the piercing of other body parts has gained popularity in western culture with 46\% of women in the UK aged 16-24 having a piercing in a site other than the earlobe.\textsuperscript{2} Inevitably there are complications to piercing which impact on health care providers. In this paper we discuss complications of ear piercing from a surgical perspective and the methods of their reconstruction.

Split Earlobes

Perhaps the most commonly known complication is the “split earlobe” torn either through a single episode of trauma or through repetitive wearing of heavy earrings.

Various techniques have been described to repair split earlobes ranging from incorporating a z-plasty to the use of curved lines to produce a more natural closure.\textsuperscript{3,4} The use of a free conchal cartilage sandwich graft to reconstruct earlobes after traumatic tears has also been described.\textsuperscript{5} This study was not alone in emphasising the social and cultural importance of ear piercing, to the extent that re-piercing is performed at the time of repair even after painful trauma. Most studies, however, suggest waiting several months before re-piercing or avoiding the use of earrings made of the same metal as the previous offending earring in an attempt to prevent recurrence.\textsuperscript{6,7}

The authors’ preference is a straightforward excision of the healed edges of the split in the lobe and a simple repair with interrupted sutures (figures 1 and 2). Since a split earlobe does
not involve the loss of any tissue, there seems no logic in doing otherwise. While scars may contract in the short term, eventual softening and relaxation leads to no worse a result and perhaps fewer complications than with more complicated approaches. Ideally the ear should never be re-pierced in the same location, but can be pierced nearby around six months after repair.

**Air Holes**

The practice of African tribes people to insert expanders of ever-increasing diameter within an ear lobe piercing over a period of months has influenced a generation of young westerners. Once these “air holes” or “flesh tunnels” have reached the desired size and the hole therein is suitably large, rings can be placed within the piercing. The decision to employ the principles of tissue expansion in this way often leads to a degree of regret especially due to the perceived prejudice surrounding the trend.8

By the time patients seek surgical remedy, the earlobe can be severely deformed and may even have split (figure 3). While an ‘L’ shaped flap has been described, others advocate simple de-epithelialisation of the piercing border and removal of excess tissue.9,8 This latter approach was employed in the case illustrated with a satisfactory result three weeks following surgery (figure 4).

**Keloids**

The predilection for keloid scarring of the ear and the increased incidence of its occurrence in puberty confers a higher risk to ear piercing in adolescence.10

The treatment of keloids such as the bilateral examples shown (Figure 5) inevitably begins with surgical excision. No non-surgical treatment could attain similar results (Figure 6). This,
as an absolute minimum, gives the patient a keloid free interval, even if in the long term there is a recurrence.

The authors’ preference is to use steroid injections on wound closure and at intervals of around 6 weeks for 6 months thereafter, although there is a high degree of patient non-compliance following surgery.

Surgery without adjunctive treatment is highly likely to result in a recurrence.11,12 Steroid injections, pressure therapy and silicone gel sheets are all used in the management of keloids, sometimes in combination, without strong evidence for their efficacy13-16. Fluorouracil has recently shown promise.17,18

While radiotherapy is the most effective means of preventing recurrence the risks of neoplastic change in normal tissue associated with such treatment has not been fully evaluated.19 In the most aggressive cases it is perhaps the best, last resort.

**Cartilage infection**

The western fashion of piercing auricular cartilage in the upper pole or ‘high ear piercing’ inevitably risks cartilage infection and subsequent collapse (figure 7). Cartilage is particularly at risk as a result of its avascular nature. Evidence suggests that pseudomonas is a common pathogen involved in cartilage infection and subsequent auricular abscesses after high ear piercings.20

Piercing methods have been implicated in the pathogenesis of peri-chondritis, especially the use of ear piercing guns.21
The severe deformities seen after such infections require a robust cartilage framework to reconstruct the destroyed contours of the ear. Conchal cartilage is too soft to resist the post-operative contraction imparted by the skin pocket. Prosthetic materials are at too high a risk of further infection, with the consequence of a significant worsening of the ear’s predicament. To date the only effective material for reliable, safe and stable results is costal cartilage, as was used in the case shown (figure 8). In such a reconstruction the defect is defined by assessing the deformed part of the ear and sculpting costal cartilage as a replacement. An appropriate incision is made and having removed the damaged cartilage the costal cartilage framework is inserted and sutured to the remaining, undamaged auricular cartilage. The result of this surgery is a robust, lifelong reconstruction.

Discussion

Piercing is a time honoured method of expressing individuality, of growth from child to adult and conformity with peers. It has been used in recent years to express opposition to authority within the punk movement through the piercing of areas of the body other than the ears. The removable nature piercings allows adolescents to express a personal narrative without the permanence of tattoo.¹

While the decision to pierce the ear may be taken lightly, the standard of hygiene in piercing establishments is variable and the piston gun used by many for piercing earlobes can result in embedded ear ring backs especially in piercing sites other than the lobe.²² Piercing guns are highly likely to crush auricular cartilage when used in sites other than the lobe, increasing the likelihood of infection complicating cartilage necrosis.²⁰
An acceptable criticism of the photos shown in this review would be the lack of evidence of long-term results in the cases shown as each of them represents early results. However, these patients once treated successfully, rarely return to clinic for long term follow up. And while loss to follow up cannot be assumed to be due to durable results, all the patients shown had indicated that they would return to clinic should they develop any concerns.

The practice of ear piercing while generally safe, nevertheless has complications ranging from a minor tear to severe infection with ear collapse. This paper defines the major types of complication and the current approaches to their correction.

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Conflict of Interest

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