

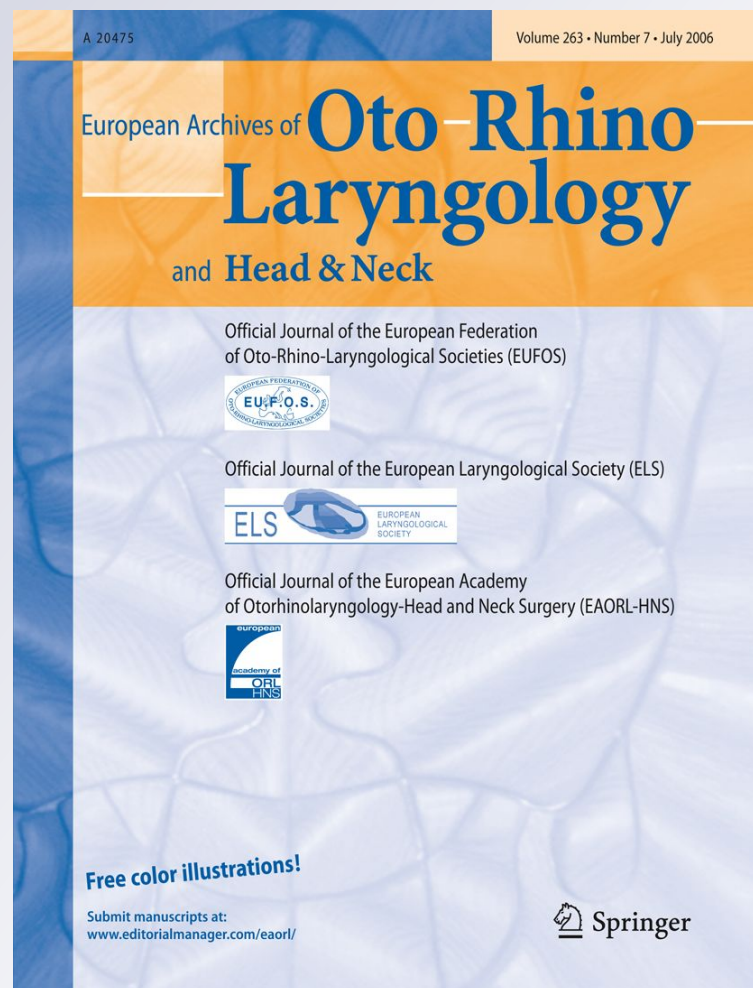
*High ear-piercing: an increasingly popular procedure with serious complications. Is good clinical practice exercised?*

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# High ear-piercing: an increasingly popular procedure with serious complications. Is good clinical practice exercised?

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**Abstract** This study aimed to explore the current practice of performing high ear-piercing regarding consent protocols, and methods of practice using questionnaire-based survey in Hertfordshire and North London. Recommendations for good clinical practice are also made. 100 establishments performing ear piercing were identified. A 16-item questionnaire on techniques used, methods of high-ear piercing, methods of sterilization, consent issues and aftercare was completed. Seventy-six establishments agreed to participate. All practitioners prepared the skin before piercing, 58 (76%) used a needle for piercing, 11 (15%) used a spring-loaded gun and seven (9%) used both. 97% of the practitioners obtained written consent before proceeding. 9 (12%) had a lower age limit of 16 years and three (4%) of 18 years. 27 piercers (36%) provided an aftercare leaflet, 41 (54%) warned the patients about risks of infection, 16 (21%) warned about cosmetic deformity and 1 (1%) specifically mentioned cauliflower ear. Results indicated that high ear piercing is an invasive procedure with a significant risk of

complications leading to cosmetic deformity. Establishments should be required to counsel patients properly about the risks and potential complications of the procedure. A code of practice should be drawn up with a minimum age for piercing, requirement for proper consent, excellent hygiene and good information for postoperative care.

**Keywords** Ear · Cartilage · Piercing · Complication · Consent

## Introduction

Ear piercing is documented in the oldest mummy ever found (estimated at 5,300 years old) [1] and in the Bible [2]. Multiple ear piercings became popular in America in the 1970s, followed by a trend for “high” or cartilage ear piercing [1].

High ear-piercing is an invasive procedure and has a significant complication rate [3, 4]. It can result in damage to the pinna cartilage and, as the latter is relatively avascular, may also lead to poor healing, infection and even abscess formation [5]. Once infection occurs, it can progress rapidly, despite prompt medical management. Abscess formation can leave the ear permanently disfigured [5], as the cartilage forms the skeleton of the ear and its loss leads to “cauliflower ear” [3] (Fig. 1).

All surgical procedures within the British healthcare system require the patient to give some form of consent, which is usually written. Consent must be “informed” (i.e. the patient must be informed of the risks and benefits of the procedure). Ear piercing is usually carried out in jewellery stores, beauty parlours and tattoo studios. It is, however, an invasive procedure and should require the same level of consent.

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This article is dedicated for Daisy.

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**Fig. 1** Cauliflower ear 6 weeks after developing an infection at a high piercing site. The patient was treated with prompt antibiotics and surgery but still had cartilage loss

The aim of the study was to explore the current practice of performing high ear-piercing, especially with regard to consent protocols and methods of practice. Recommendations for good clinical practice are also made.

## Materials and methods

A 16-item questionnaire was designed. The questionnaire focused on consent protocols, methods of skin preparation and sterilization, methods of performing high ear-piercing, aftercare protocols and training undertaken by practitioners. The completion time was 5 min or less.

Establishments undertaking body/ear piercing in Hertfordshire and North London were identified via the internet (yellow pages.com). Each author contacted 20 premises. Each premise was assured of anonymity and was allowed to opt out of answering questions at any time. The practitioner was also allowed to add extra comments, if desired. The results were tabulated by a code representing each premise known only to the author concerned.

## Ethical considerations

Advice was sought from the Ethics Committee of the East and North Hertfordshire NHS Trust. As the proposed questionnaire was anonymous and no contact was made with patients, formal ethical approval was not required.

## Results

One hundred establishments were initially identified in the Hertfordshire and North London areas. 76 firms answered the questionnaire (76%), 20 firms declined to participate, and 4 had stopped performing high ear-piercing.

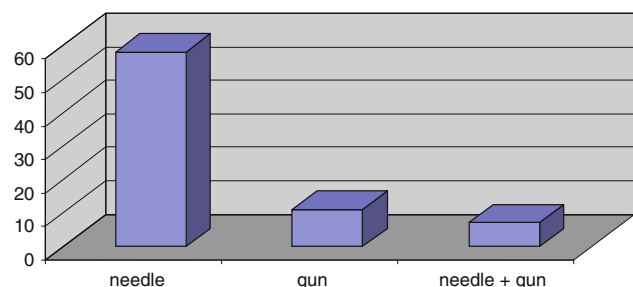
The piercers had between 2 months and 30 years experience (mean 8.82 years). One piercer was self taught, 23 (30%) went on a course, seven (9%) went through an apprenticeship scheme, and 45 (59%) were trained in house by a more experienced practitioner.

All piercers prepared the skin using an alcohol wipe or chlorhexidine solution prior to piercing. 56 (74%) had an autoclave to sterilize instruments. Of this 56, 9 had an autoclave and used ultrasound to sterilize the instruments, and 11 used disposable instruments and the autoclave. Of the remaining 20, 17 (22%) used single-use equipment, and 3 (4%) wiped the guns down with an alcohol wipe or soaked them in cleaning solution.

58 (76%) used only a needle for high ear-piercing, 11 (14%) used a spring-loaded gun, while seven (9%) used a combination of the two (Fig. 2). When a choice of methods was used the gun method was cheaper.

74 out of 76 establishments (97%) required the client to sign a written disclaimer before proceeding. The other two (3%) took verbal consent. In addition, ten establishments (13%) required photo identification before proceeding.

One establishment had a minimum age of 14, 9 had a minimum age of 16 and three had a minimum age of 18. Four practitioners required a parent to attend if the client was under 16. Risks and complications were discussed by 61 (80%) practitioners. 9 (12%) said complications do not happen as no one had come back with problems. 4 (5%) did



**Fig. 2** Methods of high ear-piercing

not mention complications specifically, and two mentioned them only if asked. Only one mentioned “cauliflower ear” specifically. The others mentioned combinations of scarring, bleeding, infection, and long healing time.

34 practitioners (45%) provided an aftercare leaflet to clients with a contact number if there were problems. All stressed the need to keep the piercing clean, and 50 (66%) provided saline, or some other cleaning solution.

## Discussion

Ear piercing has been performed for millennia. However, it is only since about the 1970s that cartilage ear piercing has become more popular in Western countries.

Complications of ear piercing range from minor skin infection and metal hypersensitivity reactions, to endocarditis and significant cosmetic deformity (Fig. 1).

The ear cartilage is relatively avascular, and infection or haematoma can have severe cosmetic consequences if not treated promptly. The rate of infection of ear piercing has increased since high ear-piercing has become more popular [6]. Indeed, it was shown that when hospital episodes are analysed, the incidence of perichondritis more than doubled between 1990/1991 and 1997/1998 [6]. Overall complications have been reported in the literature at between 17 and 70% [7–9]. Ear piercing breaks the integrity of the skin. As the skin has commensal bacterial flora on it, ear piercing should probably be considered “clean surgery”. The minimum expected infection rate for clean surgery in an operating theatre is of the order of 1%, which will be a significant number of clients per year.

Medical practitioners in the British healthcare system are required to obtain consent for every procedure performed. The consent does not have to be written, but for most patients undergoing a surgical procedure a consent form is signed. The consent should not merely be sought, but more importantly it should be informed (i.e. the risks and benefits explained to the patient in language that they can understand [10]).

As ear piercing, and especially high ear-piercing, is an invasive procedure the same standard of consent is appropriate [11]. It was encouraging that all the establishments in the present study obtained some form of consent before performing ear piercing. In the vast majority written consent was obtained. However, it is necessary to point out that this consent was not always informed. Indeed, nine piercers claimed that complications do not happen, as no client had ever come back with problems. Four did not mention complications specifically and two mentioned them only if asked. Only one mentioned “cauliflower ear” specifically. The majority of complications

mentioned were scarring, bleeding, infection and long healing time. However, asking people to give consent, but claiming that complications do not occur is not only inaccurate, but also could be considered unethical.

In this context, and taking the widespread popularity of high ear-piercing into account, ENT societies can draft and propose standardized forms of appropriate informed consent to the respective Ministries of Health, with the aim of being uniformly applied nationwide. The legal base for these actions has already been established in various European countries [11–13]. Such actions can also be centrally implemented within the European Union, following respective legislations of the European Parliament. The Commissioner for Health and Consumer Policy, who is the member of the European Commission responsible for public health and welfare, could certainly propel such matters through central European mechanisms.

Tattoo studios are tightly regulated by the local health authority which inspects the premises. Regulation of body piercing is not as stringent and varies by location (i.e. London being more tightly regulated than Hertfordshire). Since 1982 Hertfordshire council used Part VIII of the Local Government Act (Miscellaneous Provisions) to regulate premises that undertake body piercing. It required premises to register with the council and allowed inspections to ensure good hygiene. In London any premises performing ear piercing must be licensed and can be inspected at any time. The 1982 Act was amended by means of the Local Government Act 2003 (Section 120), giving Local Authorities specific powers to regulate businesses that provide cosmetic piercing (ear or body piercing). This change in the law had extended the powers that Local Authorities already had in relation to ear piercing and was brought into force on the 1st April 2004. The Local Authorities in London typically use the London Local Authorities Act of 1991, which already gave them powers to regulate special treatment businesses, including cosmetic piercing (<http://www.hse.gov.uk/lau/lacs/76-2.htm>).

There is no statutory lower age limit for piercing in the UK as long as proper consent is taken. Children can consent to procedures, if they are deemed to be competent to understand the procedure and its risks and benefits. This so-called “Gillick” competence is considered legally binding in England and Wales and applies until the age of 16. However, children under the age of 16 cannot legally consent to genital, or nipple piercing (in the case of girls), as these are considered to be indecent assaults. Medical practitioners prefer to have parental consent under 18 although patients aged 16–18 can sign the consent form on their own, if they wish. According to the results of the present study, only 17 piercing practitioners (22%) had a minimum age limit. Only four practitioners required the presence of a parent, if the client was under 16. Taking into

account that high ear-piercing can lead to significant lasting cosmetic deformity, a minimum age or at least parental presence should be required under the age of at least 16, if not 18. Admittedly, the broader implication of legislations like the “Gillick” competence is that the right to make a decision on any particular matter concerning the child shifts from the parent to the child, when the child reaches sufficient maturity to be capable of making up his/her own mind on the matter requiring decision, except in situations that are regulated otherwise by statute. Hence, efforts to achieve a minimum age for high ear-piercing may face significant difficulties in actually being implemented. However, piercing establishments, tattoo studios and beauty parlours can be legally made responsible for not performing high ear-piercing in minors [14], in the same manner that it is considered illegal to sell tobacco products to people under 18. In addition, campaigns regarding the potential complications of high ear-piercing can be launched in schools nationwide, again similarly to the respective anti-smoking campaigns.

In the piercing community it is recommended that cartilage ear piercing be carried out with a needle rather than a spring-loaded gun. It is thought that a spring-loaded gun is more likely to fracture the pinna cartilage [5], leading to haematoma and infection. In addition, the shear forces which are exercised from the piercing gun to the perichondrium are theorized to result in the perichondrium slipping off the auricular cartilage, which is thus left without nourishment [15]. This trend was confirmed by the results of this study, as over three quarters of piercers used only a needle for high cartilage ear piercing.

However, a histologic study, which compared two types of spring-loaded piercing guns, to a push-through hand force system and a catheter-coated needle has shown a similar pattern of injury at the piercing site. The comparison between the different piercing methods did not reveal any significant difference in perichondrial damage, total chondral tears or chondral shattering, despite the fact that the design and diameter of the tip of the piercing instrument varied greatly, as well as the force applied to pierce the ear [16]. In addition, most of the damage, both at perichondrial and cartilage level, was seen at the side where the piercing stud exits the cartilage. The perichondrial detachment in particular seemed to create a pocket between the perichondrium and cartilage, which under certain conditions could facilitate the development of a subperichondrial abscess [16]. Hence, the widespread perception among professional piercers that all infections are the result of the utilization of a spring loaded gun, used by untrained personnel [15] seems misleading. In contrast, it can be concluded that the focus on prevention of complications should be targeted at the hygiene of the procedure and the aftercare [16].

Aftercare instructions should preferably be in writing. The importance of good hygiene should be stressed (i.e. washing hands and fingertips before touching the piercing). The piercing should be cleaned at least daily, and saline should suffice. It should otherwise be kept as dry as possible. The most important aftercare instruction is to draw attention to the fact that after the first 24 h pain should be minimal. Any redness or pain, especially throbbing, should alert the client and medical help should be sought immediately, in order to prevent infection, or treat it early enough to avoid disfiguring consequences. Ideally, the practitioner should give a contact number, or the client should be advised to contact his/her doctor or the local Accident and Emergency Department.

In conclusion, high ear-piercing is an invasive procedure and does have complications at a significant rate. Infection can lead to significant cosmetic deformity, if not treated early and aggressively. Clients must be made aware of the fact that complications do occur and of what to do should there be signs of infection. We recommend that a code of practice be drawn up with a minimum age for piercing, requirement for proper consent uniformly applied, excellent hygiene and good information for post operative care.

**Conflicts of interest** None.

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