

Pseudomonas aeruginosa chondritis after piercing in adolescent: About a case and review of the literature

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Abstract

Pinna piercing become a trend and is associated with increase complications. We report a case presenting with post-piercing chondritis in our department and we describe clinical features, treatment and follow-up.

It is about a 14-years-old patient, consulted for right pinna pain, which had pierced 15 days earlier. On clinical examination, she had swollen pinna respecting the lobule, with pus output from the orifices of the piercing. The diagnosis retained was extensive chondritis with abscess. Intravenous probabilistic antibiotherapy was started after surgical drainage without waiting for culture, using combining ciprofloxacin and metronidazole during her hospitalization. Culture results have revealed a *Pseudomonas aeruginosa* sensitive to these antibiotics. The ear returns to a normal shape after 15 days apart a hypertrophic scar

Ear piercing may lead to infections or deformity. In case of chondritis, early administration of an antibiotic therapy is recommended. Prevention remains the best treatment.

Keywords: Piercing; *Pseudomonas aeruginosa*; Chondritis; Culture

1. Introduction

Chondritis is a serious complication of pinna piercing which can lead to necrosis in case of delay or absence of correct treatment, it is mainly due to a common opportunistic pathogen in nature; *Pseudomonas aeruginosa*. Several factors are incriminated in this complication.

Currently, in Morocco, piercings has become common among teenage girls. The interest of discussing this subject is, it can constitute a public health issue in the near future

In this article, we report and discuss a case of *Pseudomonas aeruginosa* chondritis after piercing in a young adolescent.

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2. Case report

A 14-years-old female patient with no particular pathological history, consulted for pain and inflammation of the right pinna, which had pierced 15 days earlier, more precisely at the level of the helix. On clinical examination, she is afebrile, presence of intense pain in the pinna which exacerbated by palpation associated with redness and edema respecting the lobule, with pus output from the orifices of the piercing, as well as a fluctuating swelling next to one of these orifices (figure 1). External auditory canal and tympanic membrane were normal. The diagnosis retained was extensive chondritis with abscess of pinna justifying surgical drainage, through the posterior orifice under local anesthesia with placement of a betadine wick (figure 2). A sample for bacteriological study is taken before antibiotherapy. The biological assessment find white blood count at 12630/mm³ and C reactive protein (CRP) at 18 mg/l. Intravenous probabilistic antibiotherapy was started after surgical drainage without waiting for culture, using combining ciprofloxacin and metronidazole during her hospitalization. Culture results have revealed a *Pseudomonas aeruginosa* sensitive to these antibiotics. The decrease in inflammation allows removal of the betadine wick and her discharge from hospital on six days with oral ciprofloxacin for 14 days. On the fifteenth day, the ear returns to a normal shape apart a hypertrophic scar (figure 3).



Figure 1: Patient at time of diagnosis; redness and edema of the pavilion respecting the lobule and a fluctuating swelling next to the piercing area.



Figure 2: Day 4 after drainage and placement of a betadine wick.



Figure 3: Day 15, the ear returned to an almost normal state apart from a hypertrophic scar.

3. Discussion

Transcartilaginous ear piercing become common among adolescents in the last 15 years(1).

This particular localization of piercing prone easily to infection due to several factors (2); devascularization of cartilage after a localized trauma and stripping of perichondrium, the use of ear-piercing gun in less sterile conditions, sensitization to materials including Nickel, lack of aftercare condition, (3) which increase this risk of infection by presence of granulation tissue, edema and hematoma.

Our literature review about the widest series (4) (5) (6) (7) identified that the most common bacteria was *P. Aeruginosa*, followed by *S. Aureus*. 40% of bacteriological samples were sterile or inconclusive due to previous antibiotic therapy. Once a post piercing infection is identified, it is imperative to select a broad spectrum antibiotic that covers *Pseudomonas* and *Staphylococcus* species.

The broad-spectrum antibiotics recommended in a cartilage infection, which cover these two germs, are the third and fourth generation cephalosporins, fluoroquinolones and aminoglycosides. There is some concern about using fluoroquinolones in pediatric population, due to the risk for tendon rupture and arthropathy (8)

48 days is the average time between piercing and onset of symptoms, with extremes between 2 days and 3,5 years (5) (9), we noticed that chondritis occurs more than 2 months after the piercing, are essentially linked to multi-pierced ears, patients with chronic diseases and absence of total healing (2) (5).

84% of cases needed hospitalization and intravenous antibiotic, total antibiotic duration ranges from 3 (10) to 56 days (1) with an average of 18 days. A single case in the literature required prolonged antibiotic therapy for 365 days, in a 39-year-old patient who presented a severe relapsing polychondritis after ear piercing due to *Staphylococcus epidermidis* followed by involving the nose, ribs, and respiratory tract.

We have noticed that 94% of patients with ear deformity after healing are mainly due to *P. aeruginosa*, while the rest is due to *S. aureus*. Davidi (11) found that in a large series of perichondritis, those with *P. aeruginosa* infections presented with more severe infection, which required drainage, and a longer hospitalization.

4. Conclusion

Piercing is a current fashion trend that is not always without consequences. Locoregional infections are frequent and can be devastating. Prevention remains the best treatment, which should focus on educating young people about the risks of unsafe piercing, which should be done under sterile conditions, and the patient should be informed for a daily disinfection. And must consult quickly after pain or inflammatory signs onset.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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