

Evaluation of aspiration followed by multiple simple sutures in the treatment of Haematoma Auris/ Seroma - a prospective interventional study.

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ABSTRACT

Background: Auricular hematoma and seroma refer to the accumulation of blood or fluid between the cartilage and perichondrium of the pinna. These conditions manifest as fluctuant swellings and, if left untreated, can lead to a permanent deformity known as cauliflower ear. Effective management aims to restore the ear's natural appearance. **Objectives:** This study aims to evaluate the effectiveness of aspiration followed by multiple simple sutures in terms of residual thickness, deformity, or complete resolution. **Methods:** A total of 25 patients diagnosed with auricular hematoma or seroma underwent complete fluid aspiration, followed by suturing to prevent fluid re-accumulation. **Results:** Among the patients, 80% experienced complete resolution, while 20% had recurrence or residual thickening. **Conclusion:** Auricular hematoma and seroma present treatment challenges due to the risk of recurrence and the potential for permanent deformity. However, aspiration combined with multiple through-and-through sutures is a simple and effective outpatient procedure for managing this condition. **KEYWORDS:** Auricular hematoma, seroma, through-and-through suturing, pinna, pseudocyst of pinna.

INTRODUCTION

The external ear, also known as the auris externa, consists of the auricle (pinna) and plays a crucial role in auditory function by collecting sound waves and concentrating them in the external auditory canal. It also contributes enormously to facial aesthetics.¹ Although auricular lesions do not significantly affect hearing, they can cause considerable cosmetic concerns.

Auricular seroma or pseudocyst is a cystic collection of straw-colored fluid within the cartilage, resembling hematoma in location and treatment.² If left untreated, it can lead to complications such as infection, perichondritis, or cartilage thickening, resulting in a cauliflower ear deformity.³ Traditional treatments involve incision and drainage with compression bandaging, which can be uncomfortable and prone to recurrence. This study explores an alternative approach involving aspiration and multiple simple sutures to assess its efficacy in preventing recurrence.

MATERIALS AND METHODS

This prospective study was conducted at Sri Venkatesh-wara ENT Institute and Bowring and Lady Curzon Hospital, affiliated with Bangalore Medical College and Research Institute, from November 2018 to May 2020. Ethical approval was obtained, and all patients provided written informed consent.

A total of 25 patients with auricular seroma/hematoma were included, excluding those with perichondritis or bleeding disorders. The selected patients had spontaneous, painless swellings of the pinna without any history

of trauma, insect bites, allergies, hypertension, or use of anticoagulant medications. Treatment was initiated within 24 hours of diagnosis.

Procedure:

Patients were positioned supine with the affected ear facing upward. Local anesthesia (2% lignocaine) was administered along the post-auricular groove. The most fluctuating point of swelling was identified, and aspiration was performed using a 16-gauge needle while applying external pressure to ensure complete drainage (Figure 1). Multiple through-and-through sutures using non-absorbable monofilament were applied to prevent fluid re-accumulation (Figure 2). The number of sutures varied based on swelling size. The antiseptic ointment was applied, followed by minimal dressing, but no pressure bandage was used. Patients were prescribed oral antibiotics and analgesics, and sutures were removed on the seventh postoperative day. Follow-ups were conducted at weeks 1, 2, and 4 to monitor recurrence and residual thickening.

STATISTICAL ANALYSIS:

Descriptive and inferential statistical analysis has been carried out in the present

study. Results on continuous measurements are presented on Mean + SD (Min-Max) and

results on categorical measurements are presented in Number (%). Significance is assessed at 5% level of significance. Chi-square/ Fisher Exact test has been used to find the significance of study parameters.



Figure: 1

Figure 1. Aspiration of Seroma



Figure: 2

Figure 2. Through and through simple sutures

Statistical software: The Statistical software namely SPSS 22.0, and R environment

ver.3.2.2 were used for the analysis of the data and Microsoft word and Excel have been used to generate graphs, tables etc.

RESULTS:

The most frequent occurrence of seroma was observed in individuals aged between 31 and 40 years, with an average presentation age of 36.96 years and a standard deviation of 9.46. The youngest patient in our study was 11 years old, while the oldest was 55 years old. Among the 25 patients, two were female (8%), whereas the remaining 23 were male (92%). Seroma was more commonly found on the left side, affecting 14 patients (56%), while 11 patients (44%) had right-sided seroma. Five of these cases involved swelling in the conchal region, while the other 20 exhibited swelling in the helix/antihelix region.

In our study, 4 patients (16%) presented within 1 to 3 days, the majority (68%) sought treatment between 4 and 7 days, and 4 patients (16%) reported symptoms after 7 days. During the first postoperative week, none of the patients experienced complications such as recollection or perichondritis. However, in the second postoperative week, 4 patients (16%) developed complications, includ-

ing fluid recollection (4%) and residual thickening of the pinna (12%). By the fourth postoperative week, residual thickening was documented in 5 patients (20%).

DISCUSSION:

Seroma can be managed through various techniques that focus on draining the fluid from the pinna, preventing its recurrence, and restoring the normal shape of the ear. In our study, all 25 patients exhibited spontaneous seroma without any prior trauma history. The aspirated fluid was serous in nature, with no traces of frank blood. Our approach involved aspiration followed by multiple through-and-through sutures, a simple outpatient procedure that eliminates the need for dressing, reducing social discomfort and ensuring better compliance, particularly in young adults. This method aligns with the findings of Vuyk et al. (1991), who emphasized the importance of reapproximating the perichondrium to the cartilage to prevent hematoma recurrence and infection.²

Cohen et al. (1990) found that 93% of their study population comprised males, a result closely mirrored in our study, where 92% of participants were male.⁴ This male predominance may be attributed to differences in estrogen and testosterone activity affecting cytokines responsible for cartilage degradation. Similarly, Engel and Hansen (1967) noted that seroma cases were exclusively male, while Shanmugham et al. (1985) reported two female cases.⁵ Our study also found that most patients presented in their 30s and 40s, aligning with findings by Tan et al. (2004).⁶

In our study, 20% (5 cases) developed residual pinna thickening, a result comparable to the study conducted by Priyadarshini et al., which also reported 20% of cases with residual thickening.⁷ Giles et al. (2007) documented recurrence rates of 75% for needle drainage, 50% for incision and drainage with wick placement, and 5.3% for incision and drainage with mattress sutures.⁸ In contrast, our study observed a recurrence rate of 4%, with only one case experiencing fluid re-accumulation. On the third postoperative day, some patients developed swelling between sutures, but aspiration revealed no fluid, suggesting localized inflammatory edema or hypersensitivity to antiseptics. These cases responded well to oral serratiopeptidase.

Among patients who exhibited residual thickening by the fourth postoperative week, all had initially presented after seven days of symptom onset. The delayed presentation likely contributed to partial seroma organization. For such cases, incision and drainage with curettage, as suggested by Ghanem T et al. (2005), maybe a more appropriate intervention.⁹ Additionally, our study observed that seroma located in the conchal region resulted in greater residual thickening compared to those in the helical region, possibly due to the increased difficulty of suturing in the concha.

Our findings indicate that the size, location, and duration of seroma significantly impact the effectiveness of aspiration combined with multiple through-and-through sutures as a treatment method.

CONCLUSION:

Auricular hematoma and seroma are challenging conditions to treat due to recollection leading to permanent ear deformities. This study demonstrates that aspiration

followed by multiple sutures is a simple, effective, and well-tolerated outpatient technique. The recurrence rate was minimal, and patient compliance was high, making it a good option for managing auricular seroma.

LIMITATIONS:

The present study has certain limitations, including a small sample size, absence of a control group, short follow-up duration, and single-center design. Additionally, long-term cosmetic outcomes and patient satisfaction were not objectively assessed. Larger randomized controlled studies with longer follow-up are required to validate the effectiveness of this technique.

CONFLICTS OF INTEREST: There are no conflicts of interest.

FINANCIAL SUPPORT AND SPONSORSHIP: Nil.

REPORTING, DATA & REGISTRATION

Data availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Clinical trial registration

Clinical trial registration is not applicable: this manuscript does not report a prospectively registered clinical trial.

DECLARATIONS

Conflict of Interest

The authors declare that they have no conflict of interest relevant to the content of this article.

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Ethical Clearance

The study was conducted in accordance with the Declaration of Helsinki (1964 and its later amendments). Ethical approval was obtained from Institutional Ethics Committee, Bangalore Medical College and Research Institute-Approval No. BMC/PG/125/2018-19, dated 15 November 2018. Written informed consent was obtained from all individual participants (or their legal guardians) included in the study.

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