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Through and through suturing vs. window resection method in surgical management of seroma pinna: a comparative study

Raisa Priyadarshini*, Subhalaxmi Rautray, Rajat Kumar Dash

Department of ENT and HNS, SCBMCH, Cuttack, Odisha, India

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***Correspondence:**
Dr. Raisa Priyadarshini,
E-mail: raisapriyadarshini@gmail.com

ABSTRACT

Background: Seroma pinna is a collection of fluid between the auricular cartilage and the perichondrium. Seromas can occur spontaneously or after surgery or trauma. Depending on the nature of swellings and the symptoms, they can be distinguished from other conditions of the pinna. Successful treatment is challenging because of high rate of recurrence. Usual treatment used to consist of aspiration of the fluid and pressure bandage. Methods include using buttons as pressure splints, excising a piece of cartilage and perichondrium to cure recurrent seromas[4],placement of a continuous portable suction drain has also been advised, suturing through and though after aspiration.
Methods: In the first group of patients through and through suturing was done and in the second group window resection was done.
Results: The recurrence rate was 5% for the first group patients while 20% for the second group. The percentage of development of perichondritis was 5% for group A and 15% for group B.
Conclusions: The method put forward in this study is a simple and effective way for its management. The avoidance of dressing is a positive factor and positive factor is that it can be done on an OPD basis.

Keywords: Seroma pinna, Perichondritis, Through and through suturing

INTRODUCTION

Seroma pinna is a collection of fluid between the auricular cartilage and the perichondrium. It is a cystic swelling filled with serous fluid. Seromas can occur spontaneously or after surgery or trauma[1].Extravasated fluid might clot leading to the deformity of the cartilage as well as the ear. Males are usually affected with unilateral presentation. Other morbidities include scarring, perichondritis and abscess formation. Depending on the nature of swellings and the symptoms, they can be distinguished from other conditions of the pinna.[2] Successful treatment is challenging because of high rate of recurrence.

Usual treatment used to consist of aspiration of the fluid and pressure bandage. Ghanem et al found recurrence of the seroma after aspiration and pressure bandage.[3] Various other modalities have also been designed. Other methods include using buttons as pressure splints, excising a piece of cartilage and perichondrium to cure recurrent seromas, placement of a continuous portable suction drain has also been advised, suturing through and though after aspiration.[4] The multitude of options suggest lacuna of some degree in each such modality.

Aims and objectives

To compare a more newer technique of through and through suturing in seroma pinna with the more traditional window method on the basis of patient

compliance, recurrence and complication and therefore establish the former method as the method of choice in the management of seroma pinna.

METHODS

This is a prospective study conducted at S.C.B medical college and hospital, Cuttack in the period between August 2015 to May 2017.In this period 40 patients presenting with seroma pinna were received at the outdoor of Department of EN.T and HNS, S.C.B MCH.

Inclusion criteria-

Inclusion criteria were seroma pinna developing due to with no specific history; traumatic origin; infected pseudocysts; those developing perichondritis.

Exclusion criteria

Exclusion criteria were extremes of age (<15 years, >60 years); patients suffering from chronic illness (Diabetes Mellitus etc.)

Initially histories of the patients were taken followed by routine investigations. Out of the 40 patients only 2 patients complained of blunt trauma previously. The rest others had no specific history.

The patients were randomly categorized into 2 groups; Group A (20 patients) and Group B (20 patients).In the Group A patients through and through suturing was done and Group B window resection was done. This through and through suturing method has been previously studied by Karakashian et al and Naik et al.[5] Preliminary aspiration was done in all the patients in both the groups. The patients were followed up on the 5th, 10th day and 1 month. The outcome in these patients was studied in terms of recollection, recurrence, developmet of perichondritis/abscess formation and cosmetic deformity.

In the group A patients first informed consent was take from the patient, viral screening and other routine blood investigations were done. Xylocaine skin test was done. Local infiltration of 2% xylocaine with 1:100000 adrenaline was done at the site followed by at the post auricular and pre auricular region. Then multiple sutures were given through and through using 3-0 vicryl cutting needle. The patients were given systemic antibiotics and analgesics, topical antibiotic ointment was smeared and elaborate dressing was avoided and asked for follow up.

In the group B patients after the preliminary work-up, local infiltration with 2% xylocaine was given including the preauricular region. An eye shaped incision was given and a piece of auricular cartilage along with the perichondrium was resected out. A betadine soaked gauze pack was placed inside. Regular dressing was advised and patients were discharged with systemic antibiotics and analgesics. They were asked for follow up on 3rd, 10th, at the end of 1 month. All the patients were asked to report immediately if pain and swelling occurred.

The use of suture material was according to the thickness of the ear pinna. In small children 4-0 vicryl was used whereas in adults 3-0 vicryl was used. Absorbable suture was used because the use of non- absorbable material would necessitate removal after some period of time and thereby disturbing the healing process.

The outcomes of the two groups of patients on follow up were analysed, tabulated and compared.

RESULTS

There were 34 male patients and 4 females in our study. Only 2 patients complained of trauma previously and 4 persons had already developed some form of perichondritis due to previous unsuccessful procedures. These 4 people were included in the study group A. In these patients after the preliminary work up the unhealthy tissue was scooped out and through and through suturing was done. And then they were followed up similarly.

Table 1: The age wise patient distribution of the patients.

Age distribution	Number of patients (n)
<15	8
15-30	10
30-45	15
45-60	7

Table 2: The tabulated data in terms of recurrence.

Groups	Number of patients (n)
Group A	1
Group B	4

Table 3: The data in terms of abscess formation and subsequent perichondritis.

Groups	Number of patients (n=4)
Group A	1 (5%)
Group B	3 (15%)

Table 4: The data in terms of cosmetic deformity is tabulated below.

Groups	Number of patients (n=3)
Group A	0 (0%)
Group B	3 (15%)

The recurrence rate was 5% for group A patients while 20% for group B. The percentage of development of perichondritis was 5% for group A and 15% for group B. Minor complications like discoloration of skin, pain, thickening of pinna were temporary in both groups. This was usually present in the 5th postoperative day and

subsided by the 10th day. Inspite of repeated hospital visits the recurrence was more in case of group A. There developed swelling of pinna and gradual cosmetic deformity in 15% of the patients in whom window resection was done.

DISCUSSION

Seroma of the pinna or pseudocyst was first reported by Hartmann in 1946. The cavity was not lined by epithelium and hence called "pseudocyst" by Engel. The exact pathogenesis is unclear but many theories have been forwarded. One theory suggests that defective embryogenesis plays a role. A potential space develops during the complex formation of the auricular cartilage. Later in life, abnormal chondrocyte lysosomal enzyme release dissolves the endochondrium, creating an intracartilaginous true space, or pseudocyst.[6] One theory suggests abnormal lysosomal release leading to cartilage degradation and pseudocyst formation.[6] Repeated minor trauma like ear pulling, sleeping on hard pillow, blunt trauma, helmet wearing can be a cause of pseudocyst formation as validated by detection of LDH in seroma fluid.[7] Medical modalities like corticosteroids, minocycline has been advocated. Recently the use of fibrin glue has been extended by Tuncer. Other modalities include aspiration with pressure bandage, aspiration with plaster of Paris caste, aspiration with intralesional steroids, aspiration with oral steroids, incision and drainage with removal of anterior cartilage leaflet and buttoning, incision drainage with corrugated drainage tube insertion. Some of the above procedures led to burden of regular dressing, patient non-compliance, embarrassments and complications

The primary aspiration with through and through suturing as advocated in our study is a simple and effective method with the advantage that it does not require dressing and so avoids social embarrassment and also that it can be done on an OPD basis. Cohen [8] had reported about 93% of these cases occur in males which is similar to our study(85%).This can be explained on the basis of differential action of oestrogen and testosterone in inducing cytokines. Interleukin 1 is a cytokine that plays a major role in inflammatory response in the context of infections and immune mediated diseases. Monocytes/macrophages are the primary source of IL-1. Interleukin 1 stimulates the production of mediators such as prostaglandin E2, nitric oxide, cytokines, chemokines, and adhesion molecules that are involved in articular inflammation. Furthermore, IL-1 stimulates the synthesis and activity of matrix metalloproteinases (MMP) and other enzymes involved in cartilage destruction The mean age of presentation is 37.5 years which is similar to that found by Tan and Choi.[9] Though window resection method was the earliest recognised method of treating seroma pinna, it is shown to have a higher recurrence rate by Engel et al. In a study done by Bhandary et al 12% of patients developed perichondritis, 20% of patients developed thickening of pinna and thereby cosmetic deformity in whom window resection method was done.[10] This is similar to our findings.

CONCLUSION

The management options of seroma pinna pose a challenge because of it's recurrent nature. Though there is a presence of multitude of options available for the management of auricular pseudocyst, the method put forward in this study is a simple and effective way for its management. The avoidance of dressing is a positive factor and positive factor is that it can be done on an OPD basis.

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