

Koirala K  
Rai S  
Chhetri S  
Shah R

Department of ENT,  
Manipal College of Medical Sciences  
Phulbari, Pokhara, Nepal

**Correspondence to:**  
Dr. Krishna Koirala,  
Department of ENT,  
MCOMS, Pokhara.  
e-mail: gaukrishna@yahoo.com

## COMPARISON BETWEEN POSTERIOR CARTILAGE WINDOW AND ASPIRATION AND QUILTING TECHNIQUE IN TREATMENT OF PSEUDOCYST OF PINNA

### Objective:

To compare the outcome of posterior cartilage window with aspiration and quilting technique in treatment of pseudocyst pinna.

### Materials and Methods:

A retrospective study of patients of pseudocyst pinna undergoing posterior cartilage window technique and aspiration and quilting technique as the treatment modalities in Department of ENT, MCOMS, Pokhara from Sept 2007 to Aug 2011. No recurrence of disease for at least a month was taken as the main outcome of treatment.

### Results:

Seventeen patients who underwent posterior cartilage window technique and next seventeen patients who underwent wide bore needle aspiration and quilting technique were followed up for a period of at least one month. None of the patients had recurrence of the disease till minimum of 1 month in posterior cartilage window technique group but seven patients had recurrence in wide bore needle aspiration and quilting technique group. Two patients had minor complication of the surgery which were subsequently treated in the former group. One patient had perichondritis of pinna in the later group as a major complication. No major complications was noted in the posterior cartilage window technique.

### Conclusion:

Posterior cartilage window technique as the treatment modality for pseudocyst pinna is an easier, safer and more reliable technique to decrease the risk of recurrence of disease.

**Keywords:** pseudocyst pinna, surgical treatment, posterior cartilage window, aspiration and quilting.

### INTRODUCTION:

Pseudocyst of pinna is still a difficult condition to treat medically or surgically. Although uncommon in our part of the world, it is notorious for recurrence.<sup>4, 8</sup> Many modalities of surgical treatment have been devised for its treatment but none of them is gold standard till date. Cartilage window technique is one of the techniques that have a better result. In this study we have compared the outcome of posterior cartilage window technique with aspiration and quilting technique.

### MATERIALS AND METHODS:

This study is a retrospective study carried out in the Department of ENT, Manipal College of Medical Sciences from September 2007 to September 2011. Cases of pseudocyst pinna that underwent surgical treatment by either cartilage window technique or wide bore needle aspiration and quilting were included in this study. All the surgeries were performed by the first author. All the patients were strictly followed up for 4 weeks after treatment. Then they were asked to report immediately if the swelling recurred. First thirteen patients each from both the groups were enrolled in the study. All the surgeries were performed under local anesthesia using 2% lignocaine with 1:200000 adrenaline. Aspiration and quilting was done in smaller pseudocysts which were localized predominantly in conchal bowl. The cartilage window technique was carried out in bigger pseudocysts and in all cases of recurrence. All the patients who developed recurrence after aspiration and quilting underwent cartilage window technique as the second modality of treatment. In both the techniques, the patient was kept in the supine position with the side to be operated up. In cases of cartilage window technique, after injection of local anesthetic, an incision was made around 1 cm in its vertical dimension in the medial aspect of the pinna in its most dependent site, the perichondrium was separated from the cartilage and the cartilage was removed in a square pattern of around 5 mm and the fluid was drained. After drainage of the fluid, no.8 infant feeding tube was taken and cut in the length of 5 cm which was used as a drain. The drain was fixed and mastoid bandage was applied. In cases of wide bore needle aspiration and quilting, after injection of local anesthetic using 2% lignocaine with 1:200000 adrenaline, an 18 G needle fitted in a 10 cc syringe was taken and the fluid was aspirated. After aspiration of the fluid, a piece of corrugated rubber drain was taken and cut in the size required to cover the conchal bowl on both the sides. Then quilting sutures were applied with silk 2-0 covering both the sides and mastoid bandage was applied. All the patients of both groups were prescribed 7 days of co- amoxycylav along with pain killers.

Patients were asked for the first follow up after 5 days, same day bandage and drain were also removed. Second and third follow ups were compulsory. Second follow up was after 1 week of bandage removal and third follow up was after 3 weeks of bandage removal. After that the patients were asked to follow up as soon as the fluid recollected then and thereafter

### RESULTS:

Altogether 34 patients were included in the study. Out of them 27 were males and 7 were females. All of them had spontaneous development of swelling except one, who gave history of mild trauma by motorcycle helmet. The age range was from 18 years to 47 years with the mean age of 31.8 years. Number of patients according to age group is shown in table 1.

**Table 1: Number of patients according to age range.**

Age range	Number of patients
≤ 20 yrs	01
21- 30yrs	10
31- 40 yrs	18
41-50 yrs	05
≥ 51 yrs	0

Patients in the aspiration and quilting technique group were all new. Out of seventeen patients in the cartilage window technique, nine were old cases who had recurrence after aspiration and quilting. One patient had undergone treatment in UAE around one year previously but details were not available. Next patient presented with recurrence seven months after aspiration and quilting technique which was performed in our hospital. Next seven patients presented with recurrence within four weeks after aspiration and quilting. Disease was more common in the right pinna than the left. Twenty six patients out of thirty four had disease on the right side. Collection was common in the scaphoid fossa. One patient of posterior cartilage window technique had impending perichondritis on the day of removal of bandage but resolved spontaneously on the second follow up. Next patient had thickening of pinna which was not painful. This patient was the one who had undergone treatment twice. Even on the third follow up, the thickening was persistent but there was no discomfort or recurrence. Although he was asked to report if the swelling recurs, he has not come for follow up for last five months. In aspiration and

quilting group, one patient developed perichondritis of the pinna on first follow up. He was admitted in the hospital and successfully treated with i.v. antibiotics. Next four patients developed minor complications like pressure discoloration of the skin, pain, and thickening of the pinna which were all temporary ones. Statistical analysis of the complications showed that the results between two groups were not statistically significant (Table 2).

**Table 2: Complications of posterior cartilage window vs aspiration and quilting.**

	Complications	No complications	Total
Posterior cartilage window	2	15	17
Aspiration and quilting	5	12	17
Total	7	27	34

Fisher's exact test: The two-tailed P value = 0.3983. The association between rows (groups) and columns (outcomes) is considered to be not statistically significant.

In the posterior cartilage window technique, there was no recurrence of the disease. In contrary, recurrence was common in the aspiration and quilting group. Out of seventeen patients, seven developed recurrence within a month. Four had recurrence within two weeks, next three between two to four weeks. Late recurrence was noted in one patient after seven months and he was not kept in the comparison group. Statistical analysis of the recurrence showed that there was a statistically significant difference between two groups (Table 3).

**Table 3: Number of patients with recurrence of disease in two groups.**

	Recurrence	No Recurrence	Total
Posterior cartilage window	0	17	17
Aspiration and Quilting	7	10	17
Total	7	27	34

Fisher's exact test. The two-tailed P value = 0.0072.

## DISCUSSION:

Pseudocyst of pinna is a rare condition occurring commonly in young adults. It is more prevalent in the Chinese population and Engel in 1966 also first reported the pseudocyst of pinna in the Chinese populations.<sup>1</sup> This condition is more commonly found in the males. Lim CM reported the incidence as 87% in males.<sup>4</sup> In our study 79.4% (27/34) of all patients were males. The exact etiology of this condition is yet unknown. There is spontaneous accumulation of a sterile fluid in the intercartilagenous plane presenting as a painless cystic swelling on the upper portion of the pinna with normal overlying skin.<sup>2</sup> Histopathology reveals an intracartilagenous accumulation of fluid without an epithelial lining giving the name to this entity. This condition is known to recur after simple modalities of treatment. Several treatment modalities have been described in the literature with variable success. The ultimate goal of all these modalities is successful drainage of the pseudocyst without damage to the healthy cartilage and to prevent its recurrences.<sup>3</sup> The commonly used treatment modalities include simple aspiration, aspiration and pressure dressing, aspiration with intralesional steroid, aspiration and oral

steroids, aspiration and pressure dressing by a plaster of Paris cast, incision and drainage with removal of anterior cartilage leaflet with buttoning, simple observation and reassurance etc.<sup>4-8</sup> Many studies used deroofing of the anterior cartilage leaflet of the auricle.<sup>2,5</sup> In this study we have compared the results of cartilage window from the medial aspect of pinna with wide bore needle aspiration and quilting in terms of no recurrence of disease as the gold standard. The incision was thought to be cosmetic as the surgical approach was from the posterior aspect in the former group.

Wide bore needle aspiration and quilting was performed for relatively smaller pseudocysts and for all fresh cases. Instead of that, it was associated with recurrences. In our series the early recurrence rate of pseudocyst pinna after wide bore needle aspiration and quilting was 41.17% (7/17). Kanotra and Lateef have reported the recurrence rate as high as 96.55% after aspiration and pressure bandage.<sup>8</sup> Lim et al also have stated that there is prompt recurrence of pseudocyst pinna after aspiration.<sup>4</sup> However some authors have reported good results with aspiration and tight pressure dressing.<sup>9</sup> None of the patients in cartilage window technique had recurrence of the disease in short term or long term follow up. The outcome in terms of no recurrence of disease was also statistically significant in favour of posterior cartilage window technique.

**Fig.3: Removal of the cartilage and creation of posterior cartilage window.**



**Fig.4: Placement of the Drain.**



In aspiration group there were minor complications in four patients and major complication in one patient. Minor complications were pressure discoloration of the skin of pinna in three patients and pain and thickening of pinna in one patient (impending perichondritis). Major complication was perichondritis of pinna which needed hospital admission and i.v. antibiotics. In posterior cartilage window technique minor complication of the surgery was impending perichondritis in one patient which completely resolved with routine medications. One patient had mild thickening of pinna after drainage which was persisting without significant cosmetic deformity. As there was a chance of cartilage injury in both the groups during the procedure, we did statistical analysis for the complications as well. The complications between two groups were not statistically significant ( $p = 0.3983$ ). From this we have to understand that complications might occur in any groups. Perichondritis leading to cauliflower ear and permanent disfigurement of pinna is the commonest complication of these procedures. This complication in deroofing and buttoning technique was reported as 2.4%.<sup>4</sup> In our study, one patient in aspiration and quilting group had perichondritis of pinna. No such complications were seen in cartilage window technique. In the cartilage window technique the incision was cosmetic. After healing, in the third follow up, it was hardly visible. We found this technique easier, safer and more reliable to decrease the risk of recurrence in the treatment of pseudocyst of pinna. Being a rare entity, this study was carried out with a relatively small sample size. We hope that we can continue with larger sample size and the more elaborative results will come in the subsequent papers regarding the same treatment modality.

## CONCLUSION:

Posterior cartilage window technique for drainage of pseudocyst of the pinna is a safe, easy, and reliable procedure to reduce the recurrence after surgery. It is associated with no recurrence and gives a good cosmetic result.

**Fig.1: Skin incision made in the postauricular region.**



**Fig. 2: Exposure of the cartilage.**



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