

# Pseudocyst of the Auricle

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**Pseudocyst of the auricle presents as a non-inflammatory, fluctuant swelling on the upper half or third section of the ear, due to intracartilaginous accumulation of fluid. Histological examination shows an intracartilaginous cavity without an epithelial lining. The etiology and pathogenesis of this disorder remains unknown, but the lesion is likely to be due to localized degeneration of cartilage. The degenerated cartilage is replaced by a vascular fibrous tissue from which there is serious exudation, and a clinical cystic swelling is formed.**

**We describe in this report three cases of pseudocyst of the auricle, of which one was treated successfully by surgical excision and a pressure dressing, and the others by aspiration and steroid injection therapy. In all cases, the skin lesions had not recurred, and the patients were left with an excellent cosmetic result. (Ann Dermatol 9:(1)16~21, 1997).**

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*Key Words :* Pseudocyst of the auricle, Steroid injection therapy

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The first description of pseudocyst of the auricle was by Hartman in 1886. He did not examine the lesions histologically. In 1966, Engel reported the first cases in the English literature and the first description of the histological changes.

A pseudocyst of the auricle is an uncommon asymptomatic cystic swelling of the auricle resulting from intracartilaginous accumulation of fluid. Most of the patients are young, healthy adults and usually males. The cause is uncertain because although repeated minor trauma from various causes (shouldering weight, hard pillow, rubbing, insect bite etc. ) play a part in some cases, there is no history of inflammation or trauma in other reported cases. In fact, because of its unknown etiology, the condition has also been termed benign idiopathic cystic chondromalasia. Although various modalities of treatment have been suggested, they may often cause the fluid to reaccumulate. In addition, inappropriate therapy may result in a permanent de-

formity of the auricle. We report three cases of pseudocyst of the auricle, of which one was treated successfully by surgical excision and a pressure dressing, and the others by aspiration and steroid injection therapy.

## THREE CASE REPORTS

### Case 1

A 33-year-old man attended our dermatology department for examination of an asymptomatic cystic swelling of his left ear that had been present for approximately one year. He did not complain of symptoms such as itching, pain or tenderness on his skin lesion. He had good general health, and had no previous history of trauma or drug addiction.

On physical examination of the left ear, a skin colored painless 1 × 1.5 cm sized cystic swelling that involved the middle portion of the antihelix of the left ear was observed. It was neither warm nor tender to palpation (Fig. 1). The right ear was normal. His family and past medical history were not significant. The results of the laboratory tests including complete blood count, platelet count, urinalysis, serum electrolytes, liver function test, renal function test were within normal limits or negative.

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**Fig. 1.**  $1 \times 1.5$  cm-sized, skin colored, painless cystic swelling on the middle portion of the antihelix of the left ear (arrows).

**Fig. 3.** The inner surface of the pseudocyst was filled with granulation tissue of lymphohistiocytic infiltration and there was proliferation of lymphatics and vessels. (H & E,  $\times 100$ ).

**Fig. 2.** A lower power view of a biopsy specimen, showing the anterior wall of cystic cavity to be composed of a normal epidermis, dermis, perichondrium, and a thin layer of cartilage with subchondral fibrovascular reaction. (H & E,  $\times 40$ )

On histopathological examination, the anterior wall of the cystic cavity was composed of normal epidermis, dermis, perichondrium and a thin layer of cartilage with subchondral fibrovascular reactions (Fig. 2). The intracartilagenous cavity was surrounded by degenerating chondrocytes and hyalinized cartilage. The inner surface of the pseudocyst was filled with granulation tissue of lymphohistiocytic infiltration and there was prolif-

**Fig. 4.**  $2 \times 2$  cm-sized, skin colored, cystic swelling on the upper portion of the antihelix of right ear.

eration of lymphatics and vessels (Fig.3). The skin lesion was treated with total excision, sutures and then a pressure dressing of packing gauze for five days. Three months after the treatment, the skin le-

**Table 1.** Clinical features of pseudocyst of the auricle

Patient number	Age ( yr )	Sex	Ancestry	Location	Trauma history	Therapy	Result
1	33	M	Korean	antihelix of Lt. ear	None	excision & pressure dressing	Resolution without deformity
2	34	M	Korean	antihelix of Rt. ear	None	aspiration & steroid injection	Resolution without deformity
3	47	M	Korean	antihelix of Lt. ear	shouldering weight	aspiration & steroid injection	Resolution without deformity

**Fig. 5, 6.** In case 2, the inner surface of the pseudocyst (arrows) showed degenerated chondrocytes, hyalized cartilage and replacement of the involved cartilage by a cystic space without epithelial lining cells. (H & E,  $\times 40$ ).

sion had not recurred and the patient was left with an excellent cosmetic result.

### Case 2

A 34-year old man presented with a six-month history of a painless cystic swelling of the upper third section of the right ear. He did not complain of any symptoms and had no previous history of trauma.

On physical examination of the right ear, the skin lesion was a skin colored,  $2 \times 2$  cm-sized cystic swelling that involved the upper portion of the antihelix of the right ear (Fig.4). His left ear was normal. His family and past medical history was not significant. The results of routine laboratory tests were within normal limits or negative.

On microscopic examination, the biopsy specimen revealed replacement of the involved cartilage by a cystic space, without epithelial lining

**Fig. 7.**  $1.5 \times 1.5$  cm sized, soft, fluctuant bulge on the upper portion of the antihelix of left ear (arrows).

cells: The residual cartilage at the periphery of the cystic space showed hyalinizing degeneration and irregular thinning (Fig. 5). The histological appearance of the biopsy specimen was considered consistent with pseudocyst of the auricle.

As a treatment, all the cystic fluid was aspirated, and then the pseudocyst cavity was filled with a steroid solution (triamcinolone suspension 4mg / cc). Gauze was then pressed gently on the auricular surface, until it stopped the bleeding and prevented the fluid from leakage through the needle hole. The skin lesion was cured by an injection every three weeks. In total three injections were given and the patient had no recurrence or deformity.

### Case 3

A 47-year old man presented with a several-month history of a asymptomatic cystic swelling of the upper portion of the left ear. He was a left-handed porter who had a previous history of repeated minor trauma to his left ear. It was thought that repeated contact of loads with his ear during his work was a contributory factor to the cause.

On physical examination of the left ear, the skin lesion was  $1.5 \times 1.5$  cm in size with a fluctuant bulge of skin overlying the upper portion of the antihelix of the left ear. There was no tenderness to palpation (Fig.6). The right ear was normal. His family and past medical history was non-contributory. The results of routine laboratory tests were within normal limits or negative. Microscopic changes were considered consistent with pseudocyst of the auricle.

The skin lesion was aspirated with an 18-gauge needle without difficulty and initially 1ml of yellow viscous fluid was removed, but toward the end of the aspiration, the fluid became serosanguineous. After aspiration of the lesion, steroid fluid (triamcinolone suspension 4mg/cc) was injected into the aspirated lesion site and then a gauze was pressed gently on the auricular surface until it stopped the bleeding and prevented the fluid from escaping through the needle hole. The skin lesion was injected every three weeks. In total two injections were given and the patient had no recurrence or deformity.

## DISCUSSION

In 1846, Hartman was the first to report that

such cysts were intracartilagenous in nature. Engel<sup>1</sup> (1966) confirmed the intracartilagenous collections of fluid. Based on his histological examination of the anterior wall of the cysts, he also stated that they developed from degeneration and liquefaction within the auricle cartilage suggesting the role of localized release of lysosomal enzymes. The cysts were called pseudocysts by Engel<sup>1</sup> (1966) because there were no epithelial cells clothing their inner surface. After Engel's report, much literature has been published and many terms have been used for this condition, such as endochondral pseudocyst, benign idiopathic cystic chondromalasia, seroma of the auricle and pseudocyst of the auricle.

It is of unknown etiology, but at the present time some theories have been proposed as possible causes. Engel and Hansen<sup>2</sup> suggested that during the embryologic development of the auricle from the first and second branchial arches, the residual intracartilagenous plane might be leftover and formed a potential space. Due to a defective blood supply, this led to necrotic susceptibility and a cystic degeneration. Santos et al.<sup>3</sup> postulated that there was a possibility of lysosomal abnormality causing abnormal liberation of enzymes with consequent cartilaginous degeneration. Mendelson and Lund<sup>4</sup> suggested a traumatic origin of the lesion because of its histopathological similarity to cauliflower ear. However, in many cases pseudocyst of the auricle develops without a clear-cut history of preceding trauma. Saito et al.<sup>5</sup> speculated that the lesions might be due to the effect of long term physical stimuli on the auricular cartilage with congenital dysplasia.

Clinically, pseudocyst of the auricle<sup>6,7</sup> presents as an enlarging lesion on the upper portion of the anterior aspect of the external ear. The lesion is cystic, ranges from 1 to 4 cm, and is usually asymptomatic. Occasionally minor discomfort from pressure on the surrounding tissue is noted. The scaphoid and triangular fossae of the antihelix are the most common sites of this lesion. A solitary, unilateral pseudocyst is the typical presentation and the lesions are located on the right ear 1.5 times more frequently than in the left ear.

On histopathological examination, the most significant finding is that of an intracartilagenous cystic space that shows hyalinizing degeneration of the surrounding cartilage. The anterior wall of the cavity is composed of a normal epidermis, dermis,

and perichondrium, as well as a thin rim of degenerating cartilage. Cartilage within the wall of the pseudocyst shows varying degrees of eosinophilic degeneration, with the inner deeper aspect more prominently affected. Focally, however, the full thickness of the cartilage may be involved. In some sections, the intracartilagenous cavity is filled with abundant granulation tissue, and other sections reveal a subchondral band of fibrovascular tissue. This reactive fibroplasia becomes more prominent as the lesion matures.

Histologically, pseudocyst of the auricle<sup>8,9</sup> is most frequently misdiagnosed as an inflammatory disorder of cartilage, including relapsing polychondritis, chondrodermatitis nodularis chronica helices and cauliflower ear. Chondroma, invasive hemangioma, angiosarcoma are other disorders included in the histological differential diagnosis of pseudocyst of the auricle. Especially, pseudocyst of the auricle must be differentiated from relapsing polychondritis<sup>10</sup>. Pseudocyst predominantly involves healthy men, only the auricle and is usually unilateral, whereas polychondritis frequently involves three or more different body sites. In pseudocyst, the area may rarely be tender, but the overlying skin is not inflamed, whereas the affected area in polychondritis is always swollen, red and tender. Finally, pseudocyst does not respond to systemic steroid therapy as does polychondritis. Pseudocyst may eventuate in a scarred, deformed auricle indistinguishable from cauliflower ear. However, we believe that cauliflower ear is an end-stage deformity from auricular destruction due to a variety of causes.

The clinical differential diagnosis of pseudocyst of the auricle includes othematoma, benign and malignant tumors, cystic lesions, inflammatory and vascular disorders and metabolic and systemic diseases. Othematoma is a subperichondrial accumulation of blood or serosanguineous fluid due to obvious tangential trauma to the ear. It resembles pseudocyst in that the hematoma may recur after repeated simple incision and drainage and, if untreated, may result in a permanent deformed cauliflower ear. Besides an absence in a history of trauma, pseudocyst differs from othematoma by the absence of blood in the aspirate and the cavity being intracartilagenous rather than subperichondrial.

The treatment of pseudocyst of the auricle should accomplish two goals: (1) successful resolution of the lesion without subsequent recurrence

and (2) preservation of the normal architectural structure and aesthetic appearance of the external ear. However, the treatment of pseudocyst of the auricle may be difficult. Various treatments have been reported, namely needle aspiration, incision and drainage with a pressure dressing, needle aspiration with a pressure dressing, compression suture therapy<sup>12</sup>, intralesional administration of tincture of iodine, intracartilagenous trichloroacetic acid and a pressure dressing with button bolsters, intramuscular corticosteroid therapy, high dose oral corticosteroid therapy and intralesional corticosteroid therapy. Sometimes, each treatment<sup>13,14</sup> has its drawbacks and merits, such as reaccumulation of fluid within the lesion, or it is a difficult surgical technique.

Our cases were treated successfully by surgical excision and pressure dressings in case 1 and by steroid injections with aspiration in cases 2 and 3 (Table I). The skin lesions had not recurred and there was no deformity of the ear. More work must be done to elucidate the pathogenesis of this interesting phenomenon and establish the most effective method of treatment.

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