

## What Is Your Diagnosis?

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This patient reported the spontaneous appearance of a mass on his ear.

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## The Diagnosis: Pseudocyst of the Auricle



**A**uricular pseudocysts may follow trauma, but they also may occur spontaneously or in association with relapsing polychondritis. Pseudocyst of the auricle was first described clinically by Hartmann<sup>1</sup> in 1886 and histologically by Engel<sup>2</sup> in 1966. The distinctive histologic feature of the pseudocyst is the absence of an epithelial lining. The associated lesion typically presents as a tense asymptomatic swelling of the upper antihelix in the scaphoid or triangular fossa. The noninflammatory, intracartilaginous, cystic lesion ranges from 1 to 4 cm, with minimal superficial skin changes. The cavity may be lined with granulation and fibrous tissue. Focal eosinophilic degeneration of the cartilage also may be evident.<sup>3</sup> The cystic cavity usually contains 0.5 to 10 mL of a deep yellow fluid with the consistency of olive oil.<sup>4,5</sup> The fluid is rich in glycosaminoglycans and albumin.<sup>6,7</sup> Newly formed pseudocysts may contain hemorrhagic fluid.

Most pseudocysts (87%) occur as solitary lesions and predominately affect men (93%).<sup>4</sup> The usual age of onset ranges from 30 to 40 years, with the youngest

reported case being a 6-week-old girl.<sup>3</sup> Synonyms for pseudocyst include intracartilaginous cyst, endochondral pseudocyst, and cystic chondromalacia.<sup>8</sup>

The etiology of auricular pseudocysts is a matter of debate. Most of the associated lesions are not the result of trauma, though cases stemming from known inciting events such as a slap<sup>9</sup> and cultural birthday ear pulling<sup>10</sup> exist. Repeated minor trauma from hard pillows,<sup>6</sup> stereo headphones,<sup>5</sup> and motorcycle helmets<sup>5</sup> leading to an overproduction of glycosaminoglycans may be the primary stage of development.<sup>6</sup> Glamb and Kim<sup>5</sup> suggested that trapping of the pinna against the skull while sleeping or wearing headphones or helmets can potentially compromise blood flow to the perichondrium, which results in ischemic necrosis because cartilage is avascular and relies on the surrounding perichondrium for its nourishment.

Abnormal folding of the brachial arches while the auricle is forming may create an intracartilaginous cavity as the site for pseudocyst formation.<sup>11-13</sup> The contents of pseudocysts have not been found to contain elevated lysosome levels,<sup>6</sup> refuting speculations that abnormal release of lysosomal enzymes from local chondrocytes leads to cartilage degeneration.<sup>2,11,12</sup>

A variety of medical and surgical treatments for auricular pseudocysts have been advocated. Aspiration or simple incision and drainage followed by

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application of a pressure dressing often are unsuccessful because fluid tends to reaccumulate in the existing cavity. Choi et al<sup>6</sup> described successful removal of the anterior wall in 29 of 31 patients. Part of the posterior wall (necessary to maintain structural integrity of the pinna) was removed in one patient, which led to formation of a floppy ear. Two patients with cauliflower ear had no significant cosmetic improvement after the procedure. Using the same technique, Hoffmann et al<sup>14</sup> reported a successful outcome, and Harder et al<sup>15</sup> reported excellent cosmetic results in 2 cases, though one subject had a slight contour depression in the antihelix area. Grabski et al<sup>9</sup> reported successful treatment by excision of both walls of a pseudocyst. The cavity was packed with an absorbable collagen hemostatic sponge. The defect healed by second intention with an excellent cosmetic result. Engel<sup>2</sup> described a poor outcome in a patient treated by subtotal excision of the cyst and reported success in one patient treated with a single drop of tincture of 1% iodine to the cavity after the cyst was drained.

Cohen and Katz<sup>16</sup> successfully treated a patient by incising the cyst and then applying 50% trichloroacetic acid with a cotton-tipped applicator to whiten the fibrous tissue. Young<sup>17</sup> used the aspiration needle as a guide into the intracartilaginous cavity for the injection of triamcinolone acetonide suspension (10 mg/mL). Good results were seen in 5 of 6 patients; one patient had residual thickened cartilage. Ophir and Marshak<sup>18</sup> successfully treated 9 patients by simple aspiration of the cyst followed by placement of silk mattress sutures tied to 2 cotton bolsters on the anterior and posterior aspects of the auricle. A similar procedure using a plaster of paris cast for a 2-week compression of the pinna also was effective<sup>19</sup> but was cumbersome and aesthetically unappealing. Drainage tubes also have been placed in the intracartilaginous cavity using a guide needle followed by application of pressure dressings.<sup>20</sup> Presumably, reaccumulated fluid was allowed to drain, allowing the anterior and posterior walls to fuse. A single report notes the resolution of pseudocysts in 4 patients treated with a tapered dose of prednisolone over a 20-day period.<sup>21</sup> One patient had residual thickening of the auricular cartilage.

Regardless of the technique used, the treatment goals remain the same. The lesion should be successfully ablated without subsequent recurrence, and the normal architecture and aesthetic appearance of the external ear should be preserved.<sup>4</sup> Complications of therapy include fluid reaccumulation, cyst extension along the antihelix, pseudomonas chondritis, non-infectious chondritis, excessive auricular thickening, and cauliflower or floppy ear.<sup>14</sup> Successful treatment

requires evacuation of the cystic contents followed by obliteration of the existing cavity. Our patient had recurrence after aspiration followed by application of pressure dressings. He was treated successfully by removal of the anterior wall of the cyst followed by primary closure and application of a pressure dressing.

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