Case Report:

Self-Induced Cauliflower Ears: A Case Report of an Unusual Cause

Ali Abdullah Alshehri [1]

1. Surgery Department, College of Medicine, Najran University, Kingdom of Saudi Arabia

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Corresponding author:

Ali Abdullah Alshehri, Saudi Arabia - Najran - Najran University - King Abdulaziz Road Tel: +966 50 775 6305, P.O. Box: 1988, Email: aaalshehrie@nu.edu.sa ORCID: https://orcid.org/0000-0002-9344-3825

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Abstract

Cauliflower deformity of the ear is commonly presented due to blunt trauma to the auricle. The common forms of blunt trauma are sports (boxing, wrestling, and martial arts), motor vehicle accidents, especially without wearing protective helmets, and child/adolescent abuse. Self-injurious behavior, particularly in individuals with certain psychological or developmental disorders, can indeed lead to a cauliflower ear if the person repeatedly hits, punches, or otherwise injures their ears. This type of behavior can cause trauma similar to what is seen in contact sports. Over time, repeated injury could result in the same kind of damage. Here, the author reports a case of an unusual cause of this deformity which is habitual play as a self-induced trauma. A 32-year-old clerk officer male patient presented with both deformed ears. The deformity of the left ear was worse than the right one. The patient has no fluctuation or other inflammatory signs during the examination. His medical, psychological, and dermatological history was free. The patient used to play with his ears to enjoy his friends for 2 to 3 years. His management is a triad of behavioral therapy, reassurance, and topical steroids. We present this unusual cause of cauliflower deformity of both ears which is the first case published in the literature up to our knowledge.

Keywords:

Self-induced; Steroid; Behavioral therapys

Introduction:

Cauliflower ear is an external ear deformity caused by applied blunt trauma to the auricle and the surrounding tissue [1,2]. The common cause of this deformity is wrestling, boxing, or any sport that can lead to auricular hematoma; thus, it is also known as the wrestler's/boxer's ear [3-5].

An auricular hematoma is a collection of blood in the sub-perichondrial space on the anterior aspect of the ear [3]. The cartilage is supplied by perfusion from the perichondrium via superficial temporal and posterior auricular arteries, and the trauma disrupts the perichondrium and the vasculature [3]. This damage separates the perichondrium from the cartilage, forming a potential space for blood to accumulate [1]. The blood collection mechanically compresses the vasculature of the cartilage leading to ischemia and venous congestion [3]. A study in 2019 showed a prevalence of auricular hematoma and cauliflower ear of 96% and 84% among Finnish high-level male wrestlers and judokas respectively [6].

The untreated auricular hematoma could be infected and progress to abscess formation. It may also be complicated with cartilaginous necrosis and histological changes leading to chronic scarring and fibrous organization [3]. These complications appear as a cauliflower ear. In addition to hearing, the external ear has an aesthetic function in the face and head. The abnormal external ear is usually noticeable, so most patients seek medical help to repair such auricular deformity [7].

The common causes of auricular hematoma and subsequent cauliflower ear are sports[4-6], children and adolescent abuse [8-10], late-onset psychosis [11], and accidents. Here, we report a rare case of self-induced cauliflower deformity.

Case Presentation:

A 32-year-old clerk officer male right-handed patient presented to our institution with deformed both ears, as shown in Figures 1 and 2.



Figure 1. A deformed right ear.

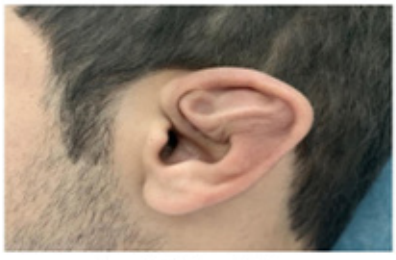


Figure 2. A deformed left ear.

The deformity was worse in the left ear (Figures 2). The patient has no fluctuation or other inflammatory signs at the time of

examination. His medical, psychological, and dermatological history was free. The patient used to play with his ears to enjoy his friends for 2 to 3 years duration. He has been assessed and managed by a psychotherapist which has been labelled and treated as one the personality disorder. His current management includes a triad of

behavioral therapy, reassurance, and topical steroids over 3 months. However, this triad of therapy helped him to abandon this habit and progress the deformity.

Discussion:

Cauliflower ear deformity, a chronic, bulbous malformation of the pinna, usually occurs secondary to blunt trauma to the auricle and the surrounding tissue. Ear cartilage inflammation or recurrent polychondritis inflammation can sometimes mimic such injuries [12,13].

The characteristic features diagnose auricular hematoma or cauliflower ear in individuals experiencing blunt trauma to the auricle. The patient usually has no other symptoms except for those associated with other trauma-related clinical symptoms. Cauliflower ear is noticed with many systemic diseases such as perniosis, lupus pernio (sarcoidosis), multicentric reticulohistiocytosis, lupus vulgaris (tuberculosis), primary lymphoma, lymphocytoma cutis, auricular pseudocyst, relapsing polychondritis, Rosai-Dorfman disease, Hansen disease (leprosy), and cutaneous leishmaniasis [14]. A few case reports described a cauliflower ear as a presenting sign of B-cell chronic lymphocytic leukemia [14-16]. From a medicolegal perspective, cauliflower ear may be a sign of child abuse[9,17].

Self-injurious behavior (SIB) is one of the causes of cauliflower ear, especially in patients with psychiatric and mental disorders such as borderline personality disorder, depression, anxiety, autism spectrum disorder, psychotic disorders, and substance use disorders. Manifestations of SIB vary widely depending on the underlying condition, emotional state, and severity of the behavior. These may include cuts and scratches, burns, bruising, biting, hair-pulling, head-banging, or interfering with wound healing. SIB is often a coping mechanism used to distract from intense emotional distress, regain a sense of control over their body or emotions, or serves as a way to communicate feelings of emotional numbness or internal suffering. Understanding the physical manifestations of self-injury is important for effective diagnosis and treatment, which often involves a multidisciplinary approach, including psychiatric care, psychotherapy, and sometimes medication[11,18-20].

The pathogenesis of the deformity is inadequately identified. But repeated trauma or inflammation is required. A hematoma

in a subperichondrial space impairs the vascular supply to the anterior ear leading to the necrosis of the auricular cartilage [21]. If left untreated or inadequately managed, the hematoma organizes, and the chondroblasts replace it with neocartilage. This process activates a cascade of fibrosis and contracture, and cauliflower deformity occurs [21]. Cauliflower ear is also an infrequent characteristic presentation (leukemia cutis) of B-cell chronic lymphocytic leukemia [14-16].

Incisional cutaneous biopsy of such cases showed special diagnostic features. Management depends on the cause and the stage at which the patient is presented. In case of trauma, all auricular hematomas should indeed be drained as quickly as possible. Hematomas that have been present for more than a week may have proceeded to organize and produce granulation tissue. To establish the position and size of the hematoma, the patient's ear is checked visually and palpated. The drainage method (either needle aspiration or incision and drainage) and surgical intervention are determined by physical findings [3,4,7,12,22].

Patients who had an auricular hematoma evacuated are examined every day for 3-5 days to check for recurrence of the hematoma or clinical presentation of infection, as well as the pressure bandage reapplication if the hematoma was evacuated using an indwelling catheter. Repeated evacuation can be done for individuals who have a recurrent auricular hematoma [23-25]. In two patients with recurrent auricular hematomas, placing fibrin glue in the hematoma cavity was linked with acceptable aesthetic results and was no additional re-accumulation, suggesting that it may be beneficial [26]. Infection, hematoma recurrence, and cauliflower ear are among potential consequences of auricular hematoma drainage. Antibiotics should be given intravenously to treat the infection. Hematomas or abscesses that form during follow-up must be drained. In case of no history of trauma or auricular hematoma, violence abuse (especially in children) must be considered[9,10,17], so the management has a medicolegal perspective to be filled.

Behavioral therapy must be considered as self-injury was reported as a possible cause of cauliflower ear. If self-inflicted, cauliflower ear might be a manifestation of underlying emotional or psychological issues. Thus, medical treatment only is not effective in such cases [18]. Therefore, an interdisciplinary is required to designate a precision management plan. Behavioral therapy may include identifying triggers that lead to self-injury, addressing harmful thought patterns that may be contributing to self-harming behaviors, and developing healthy coping mechanisms such as using stress-relief techniques, mindfulness, or

engaging in constructive physical activity. In addition, other interventions may be helpful including social and family support, self-compassion and acceptance therapy, and learning skills such as communication skills, mindfulness, distress tolerance, and emotion regulation [27-30].

Cauliflower ear causes no hearing loss in most people. But some evidence showed that the prevalence of hearing loss among cauliflower ears is higher than in non-cauliflower ears. Therefore, safety measurement is mandatory among people with an increased risk of auricular hematoma [13]. They also need to undergo hearing tests periodically. Steroids play a role in reducing inflammation and adhesion of perichondrium to the cartilage assisting healing [31,32].

Cauliflower ear negatively affects the patients' psychology. But most wrestlers consider a cauliflower ear as a strength sign [6]. Patients who desire to enhance their look cosmetically should be sent to our specialty either otolaryngology or facial plastic surgery [33].

In this case report, the author describes a habitual play as a self-induced ear trauma as an unusual cause of cauliflower deformity of both ears which is the first case published in the literature up to our knowledge. So, the management includes behavioral therapy to prevent further disfigurement due to chronic applied pressure that stimulates the mesenchyme to produce more cartilage. This chronic stimulation destructs the auricular cartilaginous network and replaces it with fibrocartilage and fibrosis [7]. Topical steroids restrict inflammation and assist adherence of perichondrium to cartilage, resulting in rapid healing and prevention of further deformity [31,32]. This case proves the significance of a good and detailed history in diagnosing and managing cauliflower ear deformity. It also supports the use of behavioral therapy and steroids as a potential treatment for self-induced cauliflower deformity of the ear.

Conflict of interest:

The author declares that he has no conflict of interest.

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Acknowledgments: None to declare.

Ethical Approval:

The work described in this report was supported by the Ethics Committee of Najran University (#2023NU.P146) and was carried out in accordance with the Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans.

Consent for Publication:

Written and informed consent was obtained from the patient for publication of this case report and any accompanying images.

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