ACTA SCIENTIFIC CLINICAL CASE REPORTS

Volume 6 Issue 3 March 2025

Case Report

Suprasternal Sebaceous Cyst in a Young Male Adult: A Rare Case Report

Anand Bhandary Panambur[1]* and Ashok Hegde[2]

[1]*Assistant Professor, A.J. Institute of Medical Sciences and Research Center, Mangalore, India*

[2]*Professor, Department of General Surgery, A.J. Institute of Medical Sciences and Research Center, Mangalore, India*

***Corresponding Author:** Anand Bhandary Panambur, Assistant Professor, A.J. Institute of Medical Sciences and Research Center, Mangalore, India.

DOI: 10.31080/ASCR.2025.06.0630

Received: January 15, 2025

Published: February 21, 2025

Abstract

A variety of pathologic entities comprise neck cysts. Epidermoid cysts are benign tumors with cystic cavities surrounded by simple squamous epithelium. The age of presentation and the clinical examination aid in narrowing the differential diagnosis, but imaging is required for a precise diagnosis and for pre-treatment planning. Ultrasound is commonly used for preliminary analysis. Fine-needle aspiration cytology (FNAC) plays a supporting role for diagnosis confirmation. Seven percent of all occurrences of epidermoid and dermoid cysts occur in the head and neck. The more prevalent cystic lesions in this area frequently present a diagnostic conundrum. Surgical excision is the best modality of treatment for this type of lesion. According to a review of both recent and historical research, dermoid and epidermoid cysts in the head and neck are less common, making up only 1.69–69% of all cases. Due to their rarity in this location, suprasternal epidermoid cysts can pose diagnostic challenges and may be misdiagnosed. Accurate diagnosis typically involves imaging studies such as ultrasonography and computed tomography (CT) scans, supplemented by fine needle aspiration, with confirmation through excision biopsy.

We are presenting the case of a 32-year-old man who visited our institute's outpatient department (OPD) with the primary complaint of a two-year-old, gradually progressive suprasternal swelling in the midline. The patient had visited a nearby hospital. An epidermal inclusion cyst was suggested by FNAC performed at the nearby hospital. The patient had high frequency ultrasound, which was again suggestive of a epidermoid cyst. The excision biopsy of the cyst was performed at our hospital under General Anesthesia. The sebaceous cyst diagnosis was validated by histopathology. Histologically, epidermoid cysts are benign lesions identified by cystic areas containing skin adnexa and lined by simple squamous epithelium.

Keywords: Sebaceous Cyst; Midline Suprasternal Neck Mass; Epidermal Inclusion Cyst; Excision Biopsy

Introduction

The sebaceous glands are lobulated structures with an outer layer of germinative cells that acquire intracytoplasmic lipid droplets as they mature and migrate inward. These outcomes have several indentations of the centrally positioned nucleus, giving it a characteristic multivacuolated appearance [1]. The sebaceous glands' excretory duct opens into the hair follicle's infundibulum. Sebum, which is secreted by these glands, keeps the skin greasy and smooth. Seldom does the sebaceous glands' duct open directly onto the skin; instead, it primarily opens into the hair follicle. The sebaceous gland swells with its own secretion and develops a sebaceous cyst if its duct or mouth becomes blocked. This is a type of retention cyst, and as it is lined with superficial squamous cells, it is more appropriately referred to as a "epidermoid cyst" [2].

Dermoid and epidermoid cyst of the head and neck account for 7% of all dermoid and epidermoid cysts [3]. Epidermoid cysts typically present as cutaneous lesions on the face, scalp, neck, and trunk [4]. A study of contemporary and older literature suggests that dermoid and epidermoid cysts in the head and neck are less

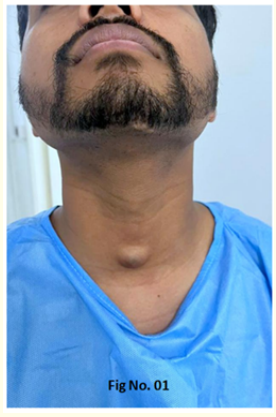
prevalent, accounting for just 1.6-6.9% of all occurrences [5]. An uncommon location for epidermoid cysts to manifest is the suprasternal area; the first incidence was reported in Turkey in 2008 [3], and more recently, six cases were reported in India [6]. Diagnostic methods include imaging, fine-needle aspiration, and excision biopsy. Diagnosing and managing head and neck lesions can be challenging because of their clinical similarity and complexity [7].

Because of their rarity in this position, suprasternal epidermoid cysts can be difficult to diagnose and may be misdiagnosed. Imaging investigations such as ultrasonography and computed tomography (CT) scans are often used to provide an accurate diagnosis, followed by fine needle aspiration and confirmation with excision biopsy.

Case Report

32 years old young male presented to our institutional outpatient department with history of suprasternal swelling for the last 2 yrs. It was initially small in size, insidious in nature and gradually increased in size to attain the present size (Figure 1, 2). On clinical examination, it was soft to firm in consistency; swelling was fixed to the underlying skin. There was no visible punctum. The swelling was present in the suprasternal space which apparently noted to move with protrusion of tongue. Possible clinical differentials were thought off like thyroglossal cyst, lipoma of suprasternal space of burns, dermoid cyst. High frequency ultrasound of the region revealed the possibility of sebaceous cyst (Figure 3). The patient had visited a nearby hospital prior to our consult. An epidermal inclusion cyst was suggested by FNAC performed at the nearby hospital.

Patient underwent excision biopsy under general anesthesia (Figure 4) and Histopathological examination showed a cyst in the dermis encircled by keratinization and stratified squamous epithelium. There were no adnexal characteristics on the cyst wall, including eccrine glands or hair follicles. There is a granular cell layer in the epithelium. The keratin is composed of lamellar eosinophilic molecules. No cells were discovered. This appearance was similar to an epidermoid cyst or sebaceous cyst (Figure 5, 6). Immediate postoperative recovery was good. Patient had come for regular follow up and after one year of follow-up, there is no recurrence.



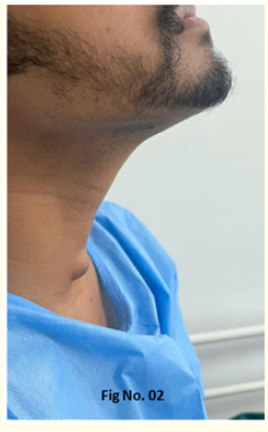


Figure 1,2: Showing clinical presentation of a suprasternal neck mass (front and side).

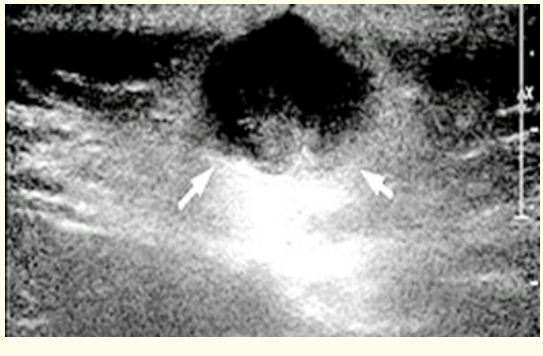


Figure 3: Showing high frequency ultrasound with Focal protrusion of hypoechoic portion from main mass appears like "tract-to-skin sign." It also counted as "submarine sign." Arrows indicate delineation from adjacent hypodermal fat.

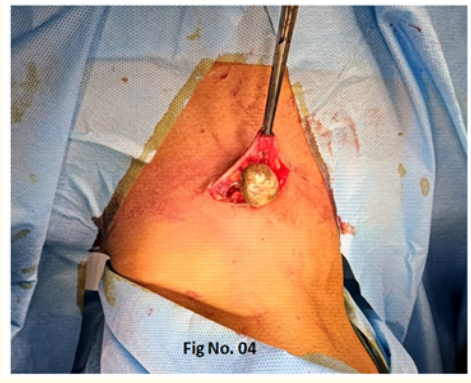


Figure 4: Intraoperative image showing excision of the swelling in-toto.

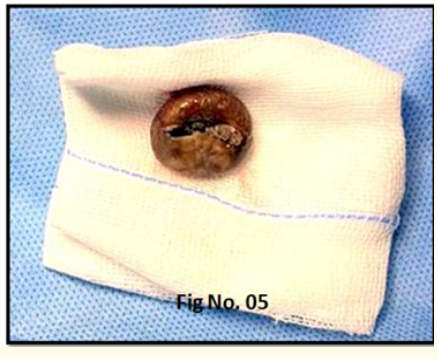


Figure 5: Showing gross appearance of excised cyst from the suprasternal region.

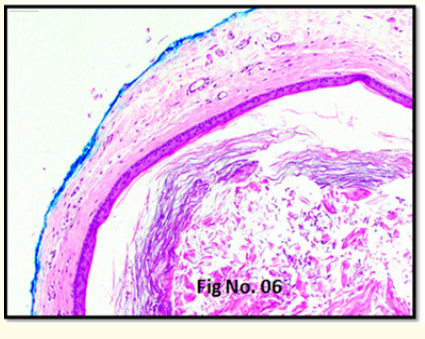


Figure 6: Showing histopathological image with cyst in the dermis encircled by keratinization and stratified squamous epithelium. There were no adnexal characteristics on the cyst wall, including eccrine glands or hair follicles. There is a granular cell layer in the epithelium. The keratin is composed of lamellar eosinophilic molecules.

Discussion

The face, scalp, neck, and trunk are believed to be the most common sites for epidermoid cysts in the form of cutaneous lesions, while cystic masses in the head and neck region are commonly observed in clinical practice [4]. A comprehensive review of both recent and historical research has confirmed that dermoid and epidermoid cysts in the head and neck account for around 1.6–6.9% of all cases in the body, while being less prevalent in the deeper tissue planes [5]. Merely 7% of all epidermoid and dermoid cysts occur in the head and neck area, 1.6% occur in the oral cavity, and 0.01% of all oral cysts [8-10].

A neck tumor or cyst is fairly common in young adults. On the other hand, suprasternal epidermoid cysts are quite rare. The majority of lesions occur during infancy, and epidermoid cysts manifest early in life. In our situation, it manifests in the early stages of young adulthood, which is a very uncommon occurrence. Dermoid and epidermal cysts can be acquired or congenital, although sharing a similar histology or appearance [11]. When the first and second branchial arches fuse, imprisoned ectoderm gives rise to dysembryonic lesions known as congenital cysts [11]. Acquired cysts brought on by the obstruction of a sebaceous gland duct or the presence of traumatic or iatrogenic epithelial cells.

Most subcutaneous epidermoid cysts are quite small, and they are frequently detectable clinically without the use of imaging. They hardly ever grow to the point that more evaluation is required. Large or medium epidermoid cysts may form in unexpected places next to specific organs, mimicking the appearance of tumors originating from that tissue as in our case [12]. Epidermoid cysts grow gradually and steadily; they don't show any symptoms until they get larger. Rapid growth of the cyst could be a sign of malignancy or an underlying infection [13].

Since it can usually identify the mass's cystic nature and pinpoint its location in relation to the surrounding structures, high-resolution ultrasound (US) is the ideal initial imaging test for neck masses. Thanks to developments in three-dimensional technology, color, and power Doppler applications, its diagnostic value has significantly increased. Among computed tomography's (CT) benefits include its capacity to confirm ultrasound (US) findings, determine the extent of the lesion, and reveal calcification or fat inside the lesion. On a CT scan, these are usually seen as distinct anechoic masses in the midline of the neck with posterior enhancement [14].

Fine-needle aspiration cytology (FNAC) might be required in some cases to confirm the diagnosis. Thyroid mass, dermoid cyst, cystic hygroma, ectopic thymic mass, cervical branchiogenic cyst and thyroglossal duct cyst are among the possible diagnoses for a midline anterior neck mass [15]. Complete surgical excision is the recommended treatment for epidermoid cysts [16]. Since cysts can enlarge, rupture, or become inflammatory, even those that don't cause any symptoms should be removed [17]. Preventing further infection is the aim of early excision.

Conclusion

An extremely rare clinical entity is an epidermoid cyst involving the suprasternal area. Therefore, they could be mistaken as malignancy, particularly if they exhibit concerning symptoms like recent weight loss. Particularly in the younger age range, epidermoid cysts should be considered in the differential diagnosis of neck cystic lesions. A diagnostic conundrum is more likely because of the unusual and misleading clinical presentations. The use of imaging in surgical planning has been increasing in significance. It had helped us identify the lesion's nature and architecture. Careful surgical dissection is necessary for the successful excision of this particular type of cyst, which prevents recurrences.

Author Contributions

- Conceptualization, writing original draft – Anand Bhandary Panambur
- Formal analysis, supervision and writing review – Ashok Hegde
- Compilation of relevant references and editing – Anand Bhandary Panambur.

Funding Information

The authors did not receive any funding.

Conflict of Interest Statement

Authors declare that there is no conflict of interest.

Bibliography

1. Zouboulis C C and Picardo M. "Sebaceous glands: Physiology and pathophysiology". *Journal of the European Academy of Dermatology and Venereology* 31.3 (2017): 2-8.

2. Gnepp DR and Bishop JA. "Diagnostic Surgical Pathology of the Head and Neck (3rd ed.)" (2021).

3. Ciftci I., *et al*. "A raresuprasternal cystic neck mass in a pediatric patient: epidermoidcyst". *Otolaryngology–Head and Neck Surgery* 139 (2008): 733.

4. Handa U., *et al*. "Aspiration cytology of epidermoid cyst of terminal phalanx". *Diagnostic Cytopathology* 26.4 (2002): 266-267.

5. Jham BC., *et al*. "Epidermoid cyst of the floor of the mouth: a case report". *JCDA* 73 (2007): 525-528.

6. Dutta M., *et al*. "Epidermoid cysts in head and neck: our experiences, with review of literature". *Indian Journal of Otolaryngology and Head and Neck Surgery* 65.1 (2013): 14-21.

7. Alvi A and Myssiorek D. "Fine-needle aspiration biopsy in the evaluation of head and neck masses". *Otolaryngologic Clinics of North America* 51.1 (2018): 1-15.

8. Ozan F., *et al*. "Epidermoid cyst of the buccal mucosa: a case report". *The Journal of Contemporary Dental Practice* 8.3 (2007): 90-96.

9. Pancholi A., *et al*. "Midline submental epidermoid cyst: a rare case". *Internet Journal of Otorhinolaryngology* 4.2 (2006): 1-5.

10. Kandogan T., *et al*. "Sublingual epidermoid cyst: a case report". *Journal of Medical Case Reports* 1 (2007): 87.

11. Boo SH., *et al*. "Multiple dermoid cysts of the external auditory canal". *International Journal of Pediatric Otorhinolaryngology* 4.4 (2009): 158-161.

12. Suzaki C., *et al*. "Apparent diffusion coefficient of subcutaneous epi-dermal cysts in the head and neck: comparison with intracranial epidermoid cysts". *Acta Radiology* 14.9 (2007): 1020-1028.

13. Cameron D and Hilsinger R. "Squamous cell carcinoma in an epidermal inclusion cyst: case report". *Otolaryngology–Head and Neck Surgery* 129.1 (2003): 141-143.

14. Som P. "Cystic lesions of the neck". *Postgraduate Radiology* 7 (1987): 211-236.

15. Loney DA and Bauman NM. "Ectopic cervical thymic masses in infants: a case report and review of the literature". *International Journal of Pediatric Otorhinolaryngology* 43.1 (1998): 77-84.

16. Suliman M. "Excision of epidermoid (sebaceous) cyst: description of the operative technique". *Plastic and Reconstructive Surgery* 116.7 (2005): 2042-2043.

17. Han HH., *et al*. "Dermoid Cyst Excision under Müller Muscle in a Patient with Blepharoptosis". *Archives of Plastic Surgery* 41.5 (2014): 607-609.