Case Report

Giant Epidermal Inclusion Cyst of the Anterior Chest Wall

Sai Jyoti[1,*], Prajwala Gupta[1]
[1]Department of Pathology, Atal Bihari Vajpayee Institute of Medical Sciences and Dr. Ram Manohar Lohia Hospital, New Delhi, India.

***Correspondence:** jyotisai2108@gmail.com

DOI
10.21276/apalm.3598

Article History
Received: 14-05-2025
Revised: 18-07-2025
Accepted: 08-07-2025
Published: 20-08-2025

How to cite this article
Jyoti S, Gupta P. Giant Epidermal Inclusion Cyst of the Anterior Chest Wall. Ann Pathol Lab Med. 2025;12(08):C122-C124.

Abstract

Epidermal inclusion cysts (EICs) are benign cutaneous lesions resulting from the implantation and proliferation of epidermal elements within the dermis. Although commonly observed in areas rich in hair follicles such as the scalp, neck, and trunk, giant variants ($\geq$5 cm) are rare. EICs located over the anterior chest wall are exceedingly uncommon, with only isolated case reports in literature. We present a case of a 38-year-old male with a longstanding giant cystic swelling on the anterior chest wall. Fine needle aspiration cytology (FNAC) revealed classic features of an EIC, thereby assisting in an accurate preoperative diagnosis. This report emphasizes the relevance of cytological evaluation in identifying large benign lesions in unusual locations.

Keywords: Giant epidermal cyst, anterior chest wall, FNAC, epidermoid cyst, cytology

Introduction

Epidermal inclusion cysts (EICs), also known as epidermoid cysts, are common benign skin lesions that originate from the infundibular portion of hair follicles or from traumatic implantation of epidermal tissue into the dermis [1]. These cysts are typically small and asymptomatic, occurring most frequently in the scalp, neck, and trunk [2, 3]. A cyst is categorized as ”giant” when its diameter exceeds 5 cm, which is a rare phenomenon often reported as individual case studies [3, 4].

Though giant EICs have been reported in various unusual sites such as the breast, perineum, axilla, gluteal region, and thyroid gland [2, 3, 4, 5, 6], their occurrence on the anterior chest wall remains notably rare. Herein, we report a case of a giant EIC in this uncommon location and highlight the role of Fine needle aspiration cytology (FNAC) in its diagnosis.

Case Report

A 38-year-old male presented with a large, painless swelling over the anterior chest wall, which had been progressively enlarging over the last 20 years. There was no history of trauma, infection, or systemic illness. On clinical examination, the mass was soft, non-tender, cystic, and measured approximately 9$\times$9 cm, extending from the sternal notch to the angle of Louis.

Ultrasonography revealed a well-circumscribed, hypoechoic, avascular lesion within the subcutaneous plane, measuring 9$\times$9$\times$3 cm—features suggestive of an epidermoid cyst. FNAC using a 22-gauge needle yielded thick, whitish material. Giemsa and Papanicolaou stained smears showed abundant anucleate squames, keratinous debris, and benign nucleated squamous cells, with no evidence of atypia or malignancy. Final diagnosis given was of Epidermal inclusion cyst.

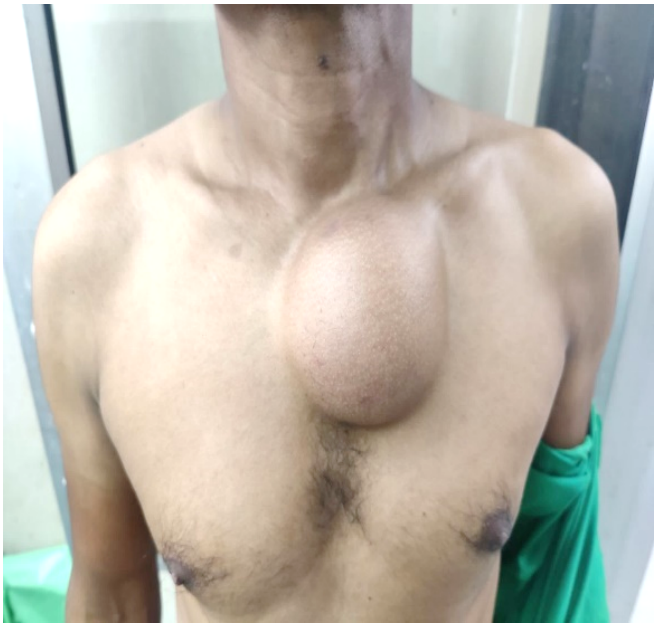

Figure 1: Anterior chest wall swelling.

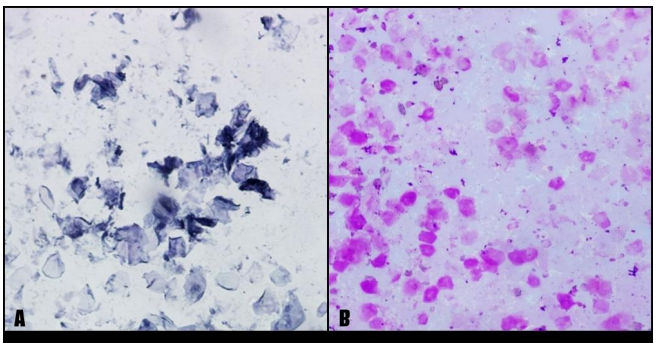

Figure 2: Fine-needle aspiration cytology smears showing (A) many anucleate squames and keratinous debris with no background inflammation (Papanicolaou, 400x) (B) Anucleate squames and keratinous debris noted with no background inflammation (May-Grünwald-Giemsa, 200x).

Discussion

EICs are benign, often asymptomatic cutaneous lesions commonly found in areas with a high density of hair follicles, such as the scalp, neck, and trunk. Their presence on the anterior chest wall is exceedingly rare, and the occurrence of giant variants ($\geq$5 cm) in this location is even more uncommon [1, 2, 3]. In such atypical presentations, clinical suspicion alone may not be sufficient to establish a diagnosis, as these lesions can mimic a variety of other entities, including benign and malignant tumours.

Cytological smears from EICs typically reveal abundant anucleate squames, keratinous debris, and occasional benign nucleated squamous cells and absence of atypia or necrosis [3, 6]. These features help confirm the diagnosis and guide management, especially in benign lesions presenting unusually as large swellings.

Several differential diagnoses must be considered in the cytological evaluation of anterior chest wall swellings. A dermoid cyst, though rare in this region, may present similarly but cytologically show other adnexal components such as hair shaft fragments, sebaceous cells, and adnexal structures; features not seen in EICs. The presence of foreign body giant cells may also be noted due to the inflammatory reaction to dermal adnexal elements [3]. Lipoma, another frequent clinical mimic, yields clear, greasy aspirate on FNAC, and smears show clusters of mature adipocytes—large, round cells with clear cytoplasm and small eccentric nuclei—without keratin or squamous cells, distinguishing them from EICs [2].

Suppurative abscesses are another possibility, particularly when EICs become secondarily infected. In such cases, FNAC may yield pus-like aspirate rich in neutrophils, cellular debris, and occasional bacteria. However, the identification of keratinized squamous elements supports an EIC rather than a pure abscess [1]. Uncommonly, congenital lesions like branchial or bronchogenic cysts can occur in the chest wall and may yield ciliated columnar cells and mucin on cytology. These features are absent in EICs and thus help in differentiation.

Steatocystomas may show overlapping features with EICs but are identified by the presence of sebaceous cells with bubbly cytoplasm and a background of oily fluid, unlike the dry keratinous debris of an EIC. Soft tissue sarcomas may be considered in large swellings when the aspirate contains spindle cells, atypical mitotic figures, and a necrotic or haemorrhagic background, all of which are absent in benign EICs. Although rare, malignant transformation of longstanding giant EICs has been reported. In such cases, FNAC may reveal pleomorphic squamous cells, nuclear atypia, increased mitoses, and necrosis, prompting further histopathological confirmation [4, 5]. Complete surgical excision of the cyst with its wall intact remains the standard of care to prevent recurrence, even in giant lesions [7].

Conclusion

Giant EICs are rare, particularly in the anterior chest wall. Their atypical location may lead to clinical misdiagnosis, emphasizing the importance of including them in the differential diagnosis of large cystic chest wall lesions. FNAC is instrumental in distinguishing it from other lesions that may present similarly on the anterior chest wall and minimizes unnecessary surgical intervention in a otherwise large size swelling, thereby ensuring appropriate treatment planning.

Acknowledgements: None

Funding: None

Competing Interests: None

References

1. Rajendran R, Dighe SP. A Giant Epidermal Cyst in the Gluteal Region: A Case Report. Cureus. 2023;15(1):e34266.
2. Zhang Y, et al. Giant Epidermal Inclusion Cyst with Infection Arising within the Breast Parenchyma. J Int Med Res. 2021;49(3):1-7.
3. Phukan JP, et al. Cytological Diagnosis of Epidermal Inclusion Cyst of Breast: A Rare Benign Lesion. J Nat Sci Biol Med. 2014;5(2):460-462.
4. Nalladaru Z, Mbahi M, Wessels A. Epidermoid Cyst—A Rare Mediastinal Mass. Indian J Surg. 2015;77(Suppl 1):S19-S20.
5. Lee KI, Namgoong S, et al. Epidemiological Characteristics and Importance of Lobulation in Giant Epidermal Cysts. Medicine. 2021;100(27):e26534.
6. Kimolo M, et al. Giant Perineal Epidermoid Cyst in Adult Man: A Rare Case Report. J Surg Case Rep. 2023;2023(5):rjad243.
7. Zito PM, Scharf R. Cyst, epidermoid (sebaceous cyst). In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan.