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JCIMCR OPEN ACCESS Journal of Clinical Images and Medical Case Reports

ISSN 2766-7820

Case Report

Open Access, Volume 5

A rare epidermal cyst occurrence in the nipple of a 10-year-old male child: A case report

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Received: Jun 27, 2024
Accepted: Aug 02, 2024
Published: Aug 09, 2024
Archived: www.jcimcr.org

DOI: www.doi.org/10.52768/2766-7820/3201

Abstract

Epidermal cysts are commonly encountered benign lesions in adults, but their occurrence in paediatric patients is relatively rare. We present a case of a 10-year-old male child with an epidermal cyst on the nipple, necessitating surgical excision due to excruciating pain over the lesion. The challenging aspect of this case is not only to remove the lesion but also to retain the nipple and an acceptable cosmesis. Histopathological examination confirmed the diagnosis of epidermal cyst. The surgical technique involved was complete excision of lesion while retaining the nipple. Epidermal cysts in paediatric patients can be effectively managed with surgical excision. In cases where the lesion is located beneath the nipple, careful planning and meticulous surgical technique can allow for the preservation of the nipple-areola complex, ensuring favourable cosmetic outcome. In this case report the importance of histopathological examination of the lesion to confirm the diagnosis and underscoring the importance of surgical technique to optimize functional and cosmetic outcome of lesions over nipple areolar complex in paediatric population is emphasized.

Keywords: Epidermal cyst; Paediatric; Surgical Excision; Nipple lesion.

Introduction

The most prevalent type of cutaneous cysts are epidermal inclusion cysts. Many terms can be used interchangeably with epidermal inclusion cysts, such as keratin cysts, infundibular cysts, inclusion cysts, and epidermoid cysts. These cysts can appear as nodules just beneath the patient's skin, can develop anywhere on the body, and frequently include a central punctum that is visible. These cysts can have a diameter of few millimetres to several centimetres. Certain epidermal cyst may not change in size over the time, while it may also grow gradually bigger other times [1,2]. The unique aspect of epidermal cysts lies in their formation arising from the proliferation of epidermal cells and keratin accumulation within a cystic structure beneath the skin. These cysts present a distinctive histopathology, typically featuring a keratin-filled cavity lined by stratified squamous epithelium and only four cases are documented in paediatric population.

There are no reliable predictive factors to conclude if an epidermal inclusion cyst will enlarge, or become inflamed, or remain quiescent. Infected and/or fluctuating cysts tend to be larger, erythematous, and more noticeable to the patient [3]. Due to the inflammatory response, the cyst will often become painful to the patient and may present as a tender fluctuant swelling. The centre of epidermoid cysts almost always contains keratin and not sebum. This keratin often has a "cheesy" appearance [4] They also do not originate from sebaceous glands

hence epidermal inclusion cysts are not sebaceous cysts. The term "sebaceous" cyst should not be used when describing an "epidermoid" cyst. Unfortunately, in practice, the terms are often used interchangeably [3]. Epidermal cysts typically develop anywhere on the body; however, they rarely develop on the nipple areolar complex. It is extremely rare among children [1].

In scientific literatures, research on epidermal cysts contributes valuable insights into dermatopathology, offering a deeper understanding of their molecular mechanisms, genetic factors, and potential biomarkers. Additionally, studies may explore advancements in imaging techniques for accurate diagnosis and delve into the evolving landscape of therapeutic approaches. By elucidating the intricacies of epidermal cysts, these contributions enhance the scientific community's knowledge, paving the way for improved diagnostic precision and innovative treatment modalities.

Case presentation

Case history

A 10-year-old boy complained of swelling over his left nipple, which was progressively increasing in size associated with excruciating pain last few days. There was no history of trauma, irritation, or unpleasant discharge. There were no similar swellings on the contralateral side. On clinical examination, there was a swelling of less than 0.5 cm over the left nipple, making the left nipple prominent compared to the right nipple. There were no other visible swellings over the breast and areolar region. Since the child had excruciating pain on palpation further examination was withheld. The child was taken up for surgery after pre-anaesthetic evaluation and optimization. Under Intravenous sedation and local anaesthesia, transverse incision was made over the nipple meticulously with 4X loupe magnification and nipple flaps were raised precisely with fine instruments, the lesion was excised. Haemostasis secured. Nipple flaps aligned and sutured with 6-0 monofilament nylon suture. Dressing was done with antibiotic ointments and soft pads. Child was followed up 48 hours after the surgery to assess the viability of the nipple flap and found to be good. Child was reviewed on 10th post operative day and underwent sutural removal (Figure 1). Mild oedema was present in left nipple. One year follow up, the patient had good cosmetic outcome (Figure 2).

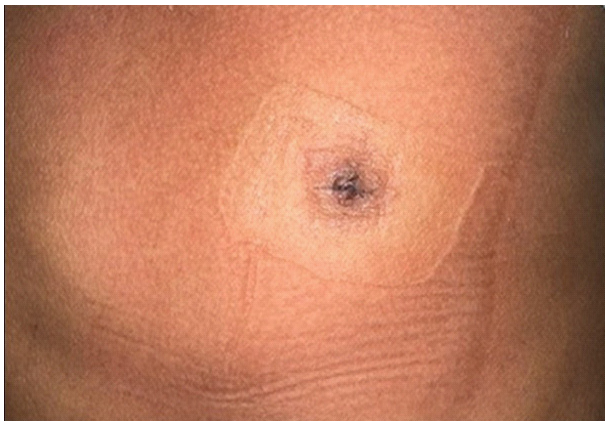

Figure 1: Clinical image.

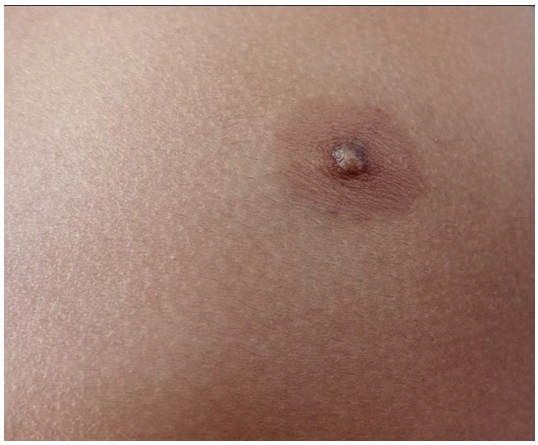

Figure 2: Clinical image.

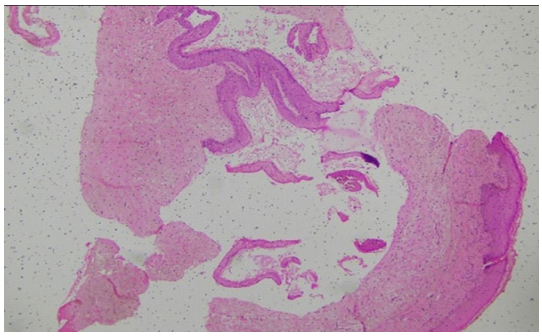

Figure 3: Clinical image.

Histopathological examination

Histopathological study showed fragment of skin, dermis containing a cystic lesion which is focally detached lined by stratified squamous epithelium with prominent granular layer and luminal keratinous material (Figure 3). No associated adnexal units were seen. Also, there was separate fragment of a cyst with features as described above. In addition, the surrounding fibro myxoid stroma was seen (Figure 4). All these findings were consistent with the diagnosis of epidermal cyst.

Discussion

Epidermal cysts arise due to sequestration of the epidermal cells into the dermis, probably due to congenital occurrence or trivial trauma and can appear anywhere on the body [1]. Children are very rarely affected by this condition. Most lesions are located on the face, upper trunk, or extremities but epidermal cyst developing on the nipple is very rare, and the location poses difficulties for excision. In the literatures, despite the small number of studies reporting on congenital epidermal cysts and post-traumatic occurrence, our case has no relevant history for the aetiology. This case might be the first of unknown aetiology.

In our case, the boy complained of a swelling over his left nipple which is progressively increasing in size for last six months with excruciating pain for last few days. The central punctum could not be visualized. There has been no history of trauma, no discharge from the nipple or any other swellings in the body. Epidermal cyst was confirmed only after excision and histological examination of the lesion, which displayed squamous epithelium with a noticeable granular layer and luminal keratinous material with surrounding fibromyxoid stroma.

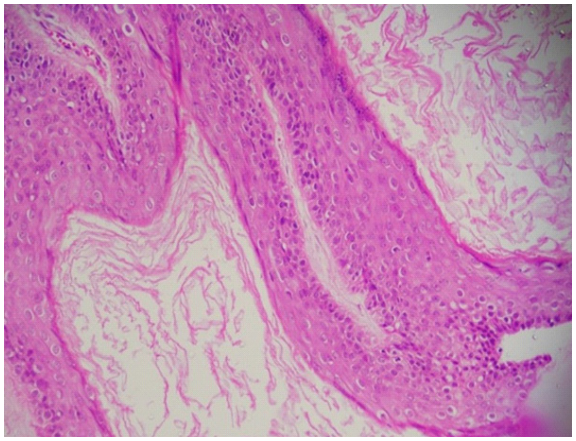

Figure 4: Clinical image.

The goal of presenting this case is to establish and emphasise the uncommon existence of an Epidermal cyst inside the nipple among paediatric population. The differential diagnosis for such swellings can be pubertal gynaecomastia, Lymphoproliferative disorders, Lipoma, Benign fibrous harmatoma [5]. In our case, the child presented with acute excruciating pain on palpation, and there was no clinical evidence of abscess or any other acute inflammatory conditions pertaining to the excruciating pain to the left nipple region. Hence, he was taken up for the surgery for pain relief and to establish the diagnosis.

Conflict of interest: No conflict of interest.

References

1. Amrani A, Sahu P, Dayal S, Verma P. Congenital epidermal inclusion cyst on the breast: A case series of a rare entity. International Journal of Applied and Basic Medical Research. 2018; 8(1): 54. https://doi.org/10.4103/ijabmr.ijabmr_303_16.

2. Hoang VT, Trinh CT, Nguyen CH, Chansomphou V, Chansomphou V, et al. Overview of epidermoid cyst. In European Journal of Radiology Open. Elsevier Ltd. 2019; 6: 291-301. https://doi.org/10.1016/j.ejro.2019.08.003.

3. Connor B Weir. StatPearls Publishing. 2023; 30335343 https://pubmed.ncbi.nlm.nih.gov/30335343/

4. Jain Shalu, Sarkar Rashmi, Garg Vijay K, Khurana Nita. Epidermal inclusion cyst or giant millium of the nipple. In Indian Journal of Dermatology, Venereology and Leprology. 2012; 78(1): 101-103. https://doi.org/10.4103/0378-6323.90959.

5. Nielsen R M, Bygum A. A child with a swollen nipple: A quiz. In Acta Dermato-Venereologica. Medical Journals/Acta D-V. 2019; 99(11): 1065-1066. https://doi.org/10.2340/00015555-3266