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Giant Epidermal Inclusion Cyst Of The Scalp – A Sheer Case Of Negligence.

Dr. Nikhil Kumar,
Additional Professor, Dept Of Pathology, AIIMS Deoghar

Dr. Nidhi Priya Allie Barla,
Assistant Professor, Dept Of Pathology, AIIMS Deoghar

Dr. Anila Sinha,
Assistant Professor, Dept Of Pathology, AIIMS Deoghar

Dr. Praful S Azoor,
Junior Resident, Dept Of Pathology, AIIMS Deoghar

Dr. Prapti Naskar,
Junior Resident, Dept Of Pathology, AIIMS Deoghar

Dr. Reena Bairagi,
Junior Resident, Dept Of Pathology, AIIMS Deoghar

Abstract
Epidermal Inclusion Cysts are slow-growing cysts formed due to the migration of epidermal cells into the dermis, usually, asymptomatic.1 They present between the 2nd and 4th decades but can manifest anytime. 1 A 26-year-old male presented with scalp swelling since birth, growing gradually in size measuring 7 x 5 x 2 centimeters. There was no history of trauma /redness or tenderness. CECT revealed a well-defined dome-shaped homogenously hypoechoic extra-axial mass overlying the high front–parietal bone. On Fine needle aspiration, it was suggestive of an epidermal inclusion cyst which was also confirmed histopathologically. It is important to consider this diagnosis when encountering a sizable, painless, and asymptomatic swelling in the scalp area, especially if the size exceeds 5 centimeters, which further indicates the rarity of the case. Due to the delay, the size of the Epidermal inclusion cyst over scalp increased to this level. It was a clear-cut case of sheer negligence.

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I. Introduction

Epidermal Inclusion Cysts are slow-growing simple cyst formed due to the migration of epidermal cells into the dermis, usually, asymptomatic.[1] They usually present between the 2nd to 4th decades but can manifest in any age group.[1] They can be congenital or acquired. They usually occur in the face followed by the trunk and neck but some exceptional locations like the brain, bone, testis, penis, clitoris, spleen, and kidney are also reported.[2] Epidermoid cysts prevail in males more than females and they originate in response to an inflammatory process in the hair follicle from the infundibular epithelium hyperplasia. They usually occur as isolated lesions but sometimes can present in multifocal form, as seen in Gardner's syndrome.[3]

II. Case Report

A male in his mid-twenties presented with swelling on the scalp since birth, growing gradually in size. There was no history of trauma /redness or tenderness in the swelling. On examination, the swelling was roughly dome-shaped, soft in consistency, non-tender, and fixed to underlying structures. The swelling measured approximately 7 cms x 5cms x 2 cms situated over the fronto-parietal region of the scalp (figures 1).

CECT revealed a well-defined dome-shaped homogenously hypoechoic extra-axial mass overlying the high fronto – parietal bone (figure 2). There is bony erosion. However, with no intracranial extension. FNA yielded a thick pultaceous aspirate. On microscopy, the smears showed numerous anucleated squames and few superficial squamous cells against a keratinous background (figure 3 & 4). These cytomorphological features were suggestive of an epidermal inclusion cyst. Wide local excision was done and on histopathological examination, the diagnosis of an Epidermoid inclusion cyst was confirmed (figure5).

III. Discussion

Epidermal cysts are versatile in their occurrence, commonly found on the trunk, face, neck, scrotum, behind the ears, and in the palmoplantar region.[2] These cysts, characterized by their benign nature and slow growth, typically manifest as high, round, firm lumps under the skin, either subcutaneously or intradermaly.[4] They usually range in size from 1 to 5 centimeters in diameter and often present without symptoms.[5] Giant epidermal inclusion cysts exceeding 5 centimeters are rare, giant cysts in the head and neck pose unique challenges.[6] Not only are they prone to rupture, potentially leading to infection, but their size can also compress nearby organs, including major arteries, veins, and nerves.[2]

A research study conducted by the Department of Dermatology at Xi'an Jiaotong University in China examined 2,783 patients diagnosed with epidermal inclusion cysts. Among these cases, 93 were specifically located on the scalp. Interestingly, one particular case highlighted in the study involved an epidermal cyst situated on the scalp of an individual who had experienced trauma at the same site during birth, specifically due to forceps delivery. This case serves as a notable example illustrating the potential link between traumatic events, such as forceps delivery, and the subsequent development of epidermal cysts.[7] A parallel case resembling our scenario of a giant epidermal inclusion cyst was documented at the Department of Surgery, B.P. Koirala Institute of Health Sciences in Dharan, Nepal. The case involved a housewife presenting with a sizable mass measuring 6 cms x 5 cms x 7 cms located in the left occipital region of her scalp.[8] Yet another case, this time involving a 35-year-old male worker, was reported from the surgical oncology ward at Hasanuddin University Hospital in Makassar. The patient presented with a colossal epidermal inclusion cyst situated on the scalp, a condition he had endured for the past three decades. Notably, there was no history of trauma or prior surgical interventions associated with the development of this cyst.[4]

Despite extensive research, the exact mechanism behind the development of epidermal inclusion cysts remains elusive. Several theories have been proposed, including aberrant embryogenesis where ectodermal cells are misplaced during cellular differentiation. Another theory postulates that trauma, such as injections, can lead to the transplantation of epidermal cells into the dermis, particularly explaining cysts found on the extremities.[2] Additionally, inflammation of pilosebaceous structures is believed to trigger a cystic reaction in the dermis, contributing to cyst formation. The list of differentials for this condition encompasses dermoid cyst, lipoma, ganglion cyst, neurofibroma, myxoma, and nodular fasciitis.[9]

Histologically, dermoid/epidermoid cysts exhibit a lining of stratified squamous epithelium with few rete processes. The preferred treatment for epidermoid cysts is complete surgical excision, which typically yields low recurrence rates.[1] Large epidermal inclusion cysts, especially those causing discomfort to patients, necessitate surgical removal as they do not regress with medical treatment alone. Surgeons must exercise caution during excision to prevent spillage of cyst contents into surrounding soft tissue, as this may incite an inflammatory reaction. Overall, while epidermal cysts present varied challenges and theories regarding their development, surgical intervention remains the cornerstone of treatment, ensuring effective management and low rates of recurrence.[10]

IV. Conclusion

While epidermal cysts typically progress slowly and are benign, they can still pose challenges in terms of diagnosis.[5] It's important to consider this diagnosis when encountering a sizable, painless, and asymptomatic swelling in the scalp area, especially if the size exceeds 5 centimeters, which further indicates the rarity of the case.[3]When it comes to managing epidermoid cysts, surgical excision stands out as the treatment of choice. This approach ensures effective removal of the cyst and is often recommended to prevent potential complications or recurrence.[10] In addition to that, when cranial bones and intracranial structures are affected by the cyst, they can even lead to complications and interventional difficulties.[8] Due to delay, the size of Epidermal inclusion cyst over the scalp has increased to this level. It was a clear-cut case of sheer negligence.

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FIGURE 1: Dome - shaped swelling in the scalp measuring 7 cms x 5 cms x 2 cms.

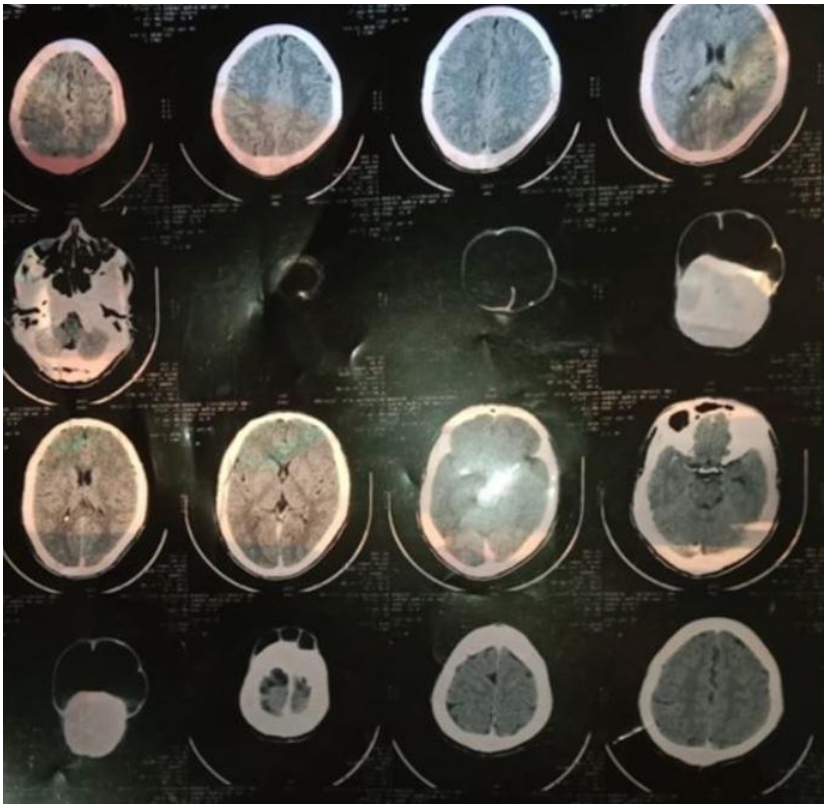

FIGURE 2: CECT reveals a well-defined dome-shaped homogenous hypoechoic extra-axial mass with bony erosion.

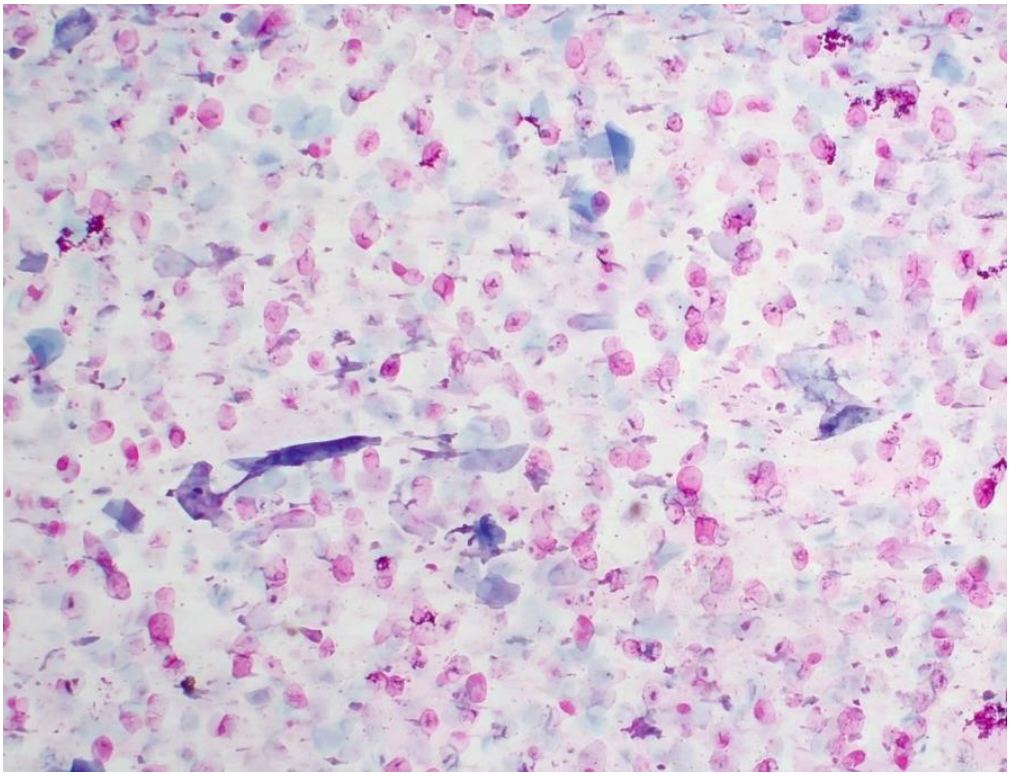

FIGURE 3: 10X (LOW POWER VIEW) of FNAC smear showing plenty of anucleated as well as a few nucleated squames in a keratinous background

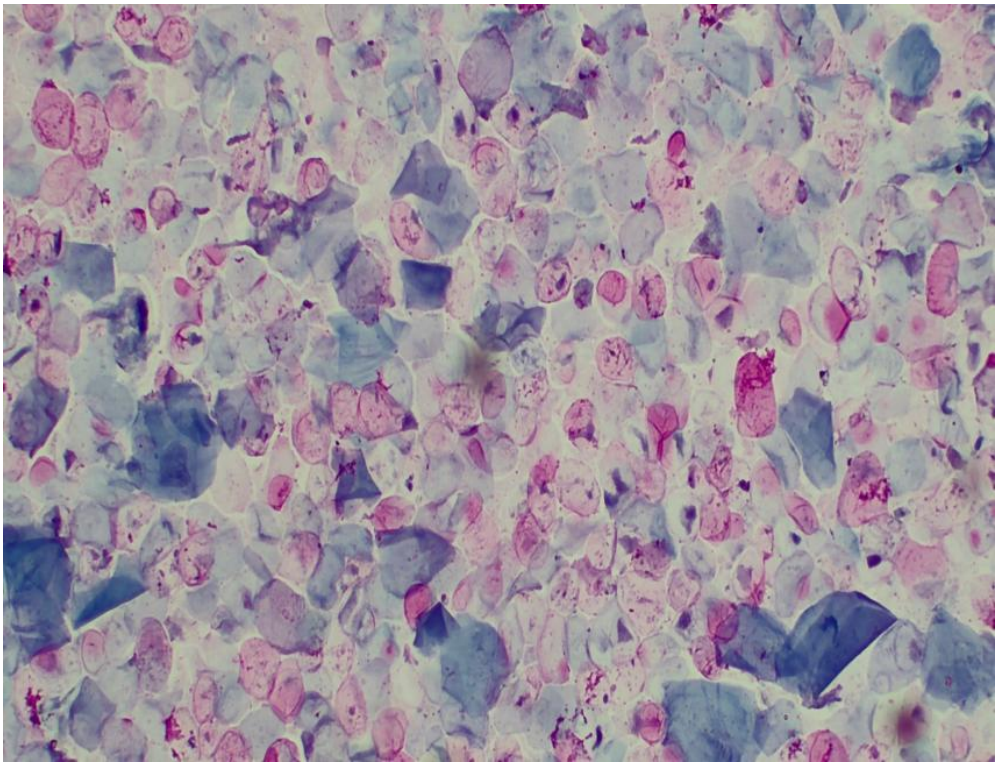

FIGURE 4: 40X (HIGH POWER VIEW) of cytology of Epidermal inclusion cyst

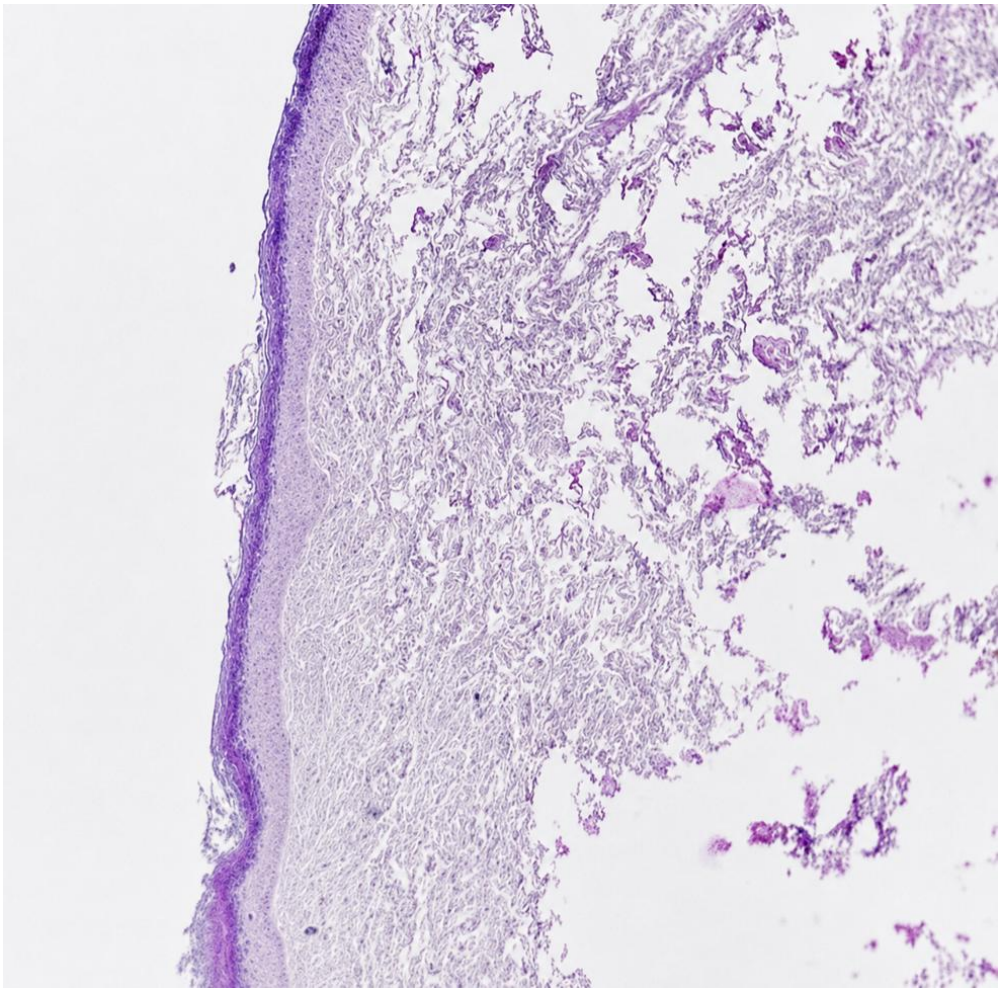

Figure-5 (Histopathology showed a cyst wall lined by stratified squamous epithelium with a granular layer containing lamellated keratin with a flaky appearance (H&E 40 X)