



Radiodiagnosis

UNSUSPECTED DECEIVING CASE OF AN EPIDERMAL INCLUSION CYST.

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Case Summary:

A 36-year-old, married female presented with a history of acute onset appearance of a swelling in midline nape of neck, severe pain and redness. It was rapidly increasing in size. No discharge. Inability to sleep.

No past history of Body-piercing, crushing injury or surgical procedure of neck.

On local examination, firm, palpable swelling with severe tenderness and erythema noted. Swelling was medium sized (4 cms in largest dimension). No punctum over the dermal surface could be seen.

Imaging Findings:

Targeted superficial Ultrasound of posterior neck soft tissue was performed for further evaluation by 14 MHz linear probe on Toshiba Aplio 400 ultrasound machine. On Ultrasound, an oval lobulated heterogeneous solid appearing lesion was seen of 35 X 24 mm size in midline posterior neck soft tissue in subcutaneous tissue plane. Color Doppler didn't show color uptake. Power Doppler showed patchy vascularity in periphery. Perifocal fat was edematous. {Figure 1, 2}

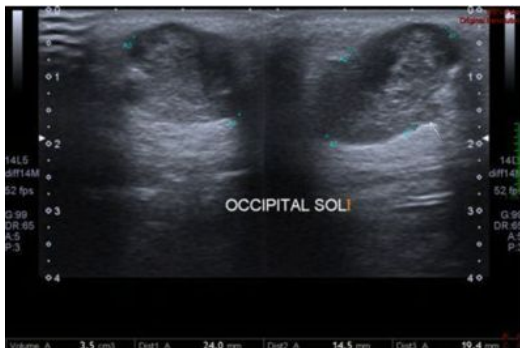


FIGURE 1: Targeted superficial ultrasound of nape of neck in a 36 years old female revealed noncompressible oval lobulated heterogeneous solid appearing mass lesion of 35 X 24 X 14 mm size. It has a protrusion / nipple along the posterior left margin (marked as small white arrow) with posterior acoustic enhancement. Perifocal fat is edematous.

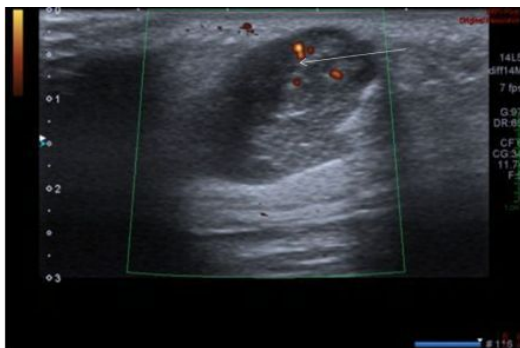


FIGURE 2: Power Doppler image showed patchy sparse vascularity within the lesion and in periphery (marked as long white arrow).

Differential Diagnoses [2]:

- Complicated cyst (infectious / ruptured)
- Soft tissue tumor
- Nodal mass were given.
- Malignant mass with secondary complications like hemorrhage could not be ruled out.

Since patient was in severe pain and considering rapid increase in size of the lesion, further investigations were not done. Emergency excision and excisional tissue histopathology were planned. The mass was fairly well-defined and observed at a skin depth of 2 cms reaching aponeurosis. It was dissected from neighboring tissues. Since the mass was away from any vascular structures, minimal bleeding occurred. Greyish white tissue was obtained. They were sent for the Histopathological examination in a 10 % formalin jar. Hemaoylin and Eosin X 40 demonstrated Cyst circumscribed with keratinized stratified squamous epithelium. H&E X600 demonstrated Neutrophils in close proximity to the Keratin flakes suggesting Acute Inflammatory response. {Figure 3, 4}

[1, 5, 10]. The patient was discharged. No post-operative complications noted. The final pathological diagnosis was an Infected Epidermoid inclusion cyst of posterior neck soft tissue.

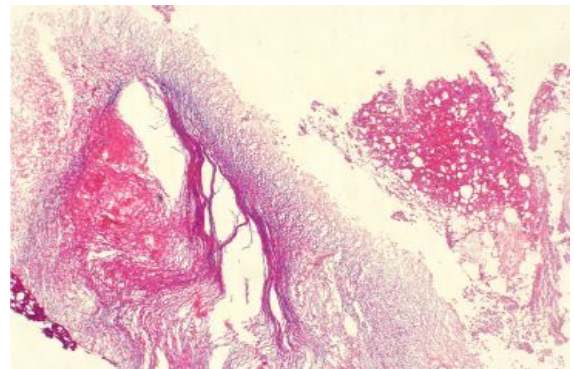


Figure 3: Microscopic image with (Hematoxylin and eosin x 40) Lamellated keratin flakes seen as acellular eosinophilic thin structures with interspersed acute inflammatory infiltrates.

Discussion:

Epidermal inclusion cysts result from the proliferation of epidermal cells within a circumscribed dermal space. certain ethnic origin and culture, vulvar epidermal cysts usually develop secondary to effects of female circumcision [7, 8]. They frequently occur on the face, scalp, neck and trunk; however, very few can have unusual site like vulva and breast [8]. An epidermal cyst rarely calcifies, but when it does, it is usually in older cysts within the keratin debris [5]. It can affect any individual of any age, commonly seen middle-age (in the 4th decade). More often in males (the male to female ratio is 2:1). Worldwide, no geographical predilection has been reported.[12]

Etiology is still not clear. Thought to have several mechanisms—remnant ectodermal tissues misplaced during embryogenesis [1,3],

occlusion of the pilosebaceous unit, or traumatic or surgical implantation of epithelial elements [9]. Human papillomavirus type 57 or 60 infections may be additional factors in the development of palmoplantar epidermoid cysts [3]. A few anecdotal cases of epidermal cysts might develop without any history of trauma or surgery have been reported in the literature [6].

Our case had Epidermal cyst in posterior neck that to in deeper plane. Epidermoid cysts are usually asymptomatic.

Discharge of a foul-smelling “cheeselike” material may be described. Less frequently, the cysts can become inflamed or infected, resulting in pain and tenderness. In the uncommon event of malignancy, rapid growth, friability, and bleeding may be reported. [5]

Rupture releases nonabsorbable keratin, irritating the surrounding tissue, which can lead to secondary foreign body reactions, granulomatous reactions, or abscess formation. In such atypical or complex cases, fine needle aspiration or surgical excision is usually required for definitive diagnosis and to exclude malignancy. [8]

Our case had unusual symptoms of acute onset appearance, severe pain and abrupt increase in size of the mass due probably due to oedema, inflammation and rupture and perifocal cellulitis changes.

On ultrasound, epidermal cysts can be oval, round, tubular in shape. Vary from little mm size to 12 cms. Appearance are usually Anechoic/purely cystic. Less common appearance can be complex cyst with internal echoes. Rarely, they may be heterogeneous solid appearing. Margins can be smooth or lobulated or discontinuous giving focal protrusion when ruptured. There might be collection in relation to the parent lesion in surrounding tissue. Posterior acoustic enhancement may or may not be seen depending upon the contents. Vascularity may or may not be seen depending upon the complications like infection or rupture. Perifocal fat edema can be seen in infected or ruptured cysts.

They can be classified according to ultrasound appearance as type I, II, or III. Type I was defined as a lesion with a simple lobulation; type II was defined as a lesion with a protrusion; and type III was defined as a lesion with a focal wall perforation, a short neck, and a deep large protruding mass like portion (abscess pocket formation). [9]

In our case, retrospectively, ultrasound was reviewed. A focal protrusion/ nipping from the posterior left lateral wall was recognised consistent with focal wall rupture. Few patchy internal slow flow and perifocal oedema was thought to be secondary to Infection. Hence, Ultrasound classification of Type II lesion was made.

CT scan can be done for lesions inaccessible for ultrasound.

MRI can have variable appearance. Few linear hypointense foci within the matrix on T2 WI is characteristic, when if found, it can strengthen the diagnosis. Peripheral enhancement can be seen in post contrast scan. [3, 5]. Preferred treatment option is usually conservative. Asymptomatic cases could be left alone.

Total surgical excision of the mass, irrespective of the size, is more appropriate for the prevention of recurrence and further complications in such cysts.[5, 11]

Histopathology is important is confirm the cellular type, tissue of origin and also to rule out atypia changes in malignancy.

Differentiation of Epidermal Inclusion cyst from other possibilities were difficult on our study. Limitations of our study were inability to evaluate further by imaging or FNAC, since patient was taken up for surgery considering rapid increase in size of the lesion. On CT scan and MRI scan, Malignant tumors will show homogeneous enhancement with signs of invasion. Fine needle aspiration cytology could have confirmed cystic nature and differentiated from other malignant conditions by cellular atypia.

Conclusion

Epidermoid inclusion cysts can have such unsuspected and unusual presentation in triage with acute symptoms, rapid increase in size and severe pain. Even Ultrasound findings can deceive and misguide us to think in the direction of notorious pathologies due to solid appearing lesion [5] Hence, Epidermoid inclusion cysts should be kept as a

differential in such doubtful situations. Hence, we are reporting this case of infected ruptured Type II Epidermal Inclusion cyst with review of literature.

Conflict of interest

All the authors declare that there is no conflict of interest.

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None.

Ethical approval

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

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