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Case Report

Encapsulated cyst fat necrosis masquerading as cold abscess

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ABSTRACT

Encapsulated fat necrosis is a benign, usually asymptomatic and underreported condition. It is believed to be trauma-related ischemia and necrosis of fat tissue that gradually detaches from its surroundings. Here we reported a case of encapsulated cyst fat necrosis in a 75 years old female following intramuscular injection, who was clinically diagnosed as cold abscess initially.

Keywords: Fat necrosis, Benign, Cold abscess

INTRODUCTION

Encapsulated fat necrosis is a rare inflammatory disorder of fat tissue, presenting as a mass after trauma, or surgery.[1] It is benign and usually asymptomatic. Encapsulated fat necrosis was first reported in the breast in 1978.[2] It is most likely to occur in the extremities such as the feet, knees, thighs, arms, the hip, chest, and finally the abdomen.[2]

CASE REPORT

A 75 years old female presented to surgery OPD with the complaint of swelling right gluteal region since, 10 years. There was history of gluteal intramuscular injection preceding the onset of small swelling which gradually increased in size (nature of the injection was not known to the patient). She had pain in the swelling since, 10 days. Cold abscess was suspected clinically. Routine hematological and biochemical parameters were normal. MRI pelvis and lumbar spine revealed large well defined thick-walled cystic lesion in the subcutaneous tissues of the right gluteal region with internal debris, suggestive of an abscess (tubercular). No bone involvement was seen. Surgically 900 ml of cyst content was drained and thick cyst wall was removed. CBNAAT was negative for tuberculosis.Grossly the cyst wall measured 19×14×0.3 cm. External surface was greyish-yellow, rough with few areas of hemorrhage and inner surface was smooth and pale yellow and showed fat deposits. No content was present.

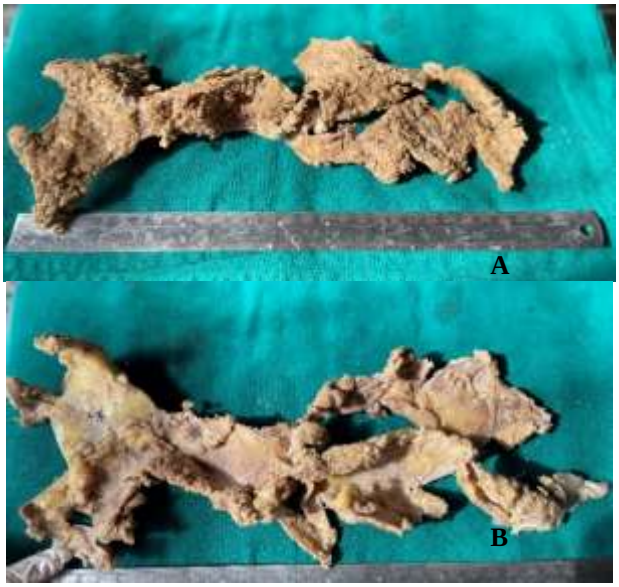

Figure 1: (a) Outer surface is irregular, firm and yellowish; and (b) inner surface is smooth and pale yellow showing fat deposits.

Histopathologic examination showed extensive areas of amorphous eosinophilic material (fat necrosis), necrosed adipocytes with abundant foreign body giant cells, cholesterol clefts, chronic mixed inflammatory cell infiltrate, sheets of foamy and pigment laden macrophages surrounded by thick fibro collagenous capsule with extensive areas of dystrophic calcifications. In addition, a few cystic spaces lined by flattened epithelium were also seen. ZN stain for tubercular bacilli was negative and Perl's stain showed hemosiderin pigment in macrophages. A final diagnosis of encapsulated cyst fat necrosis was made.

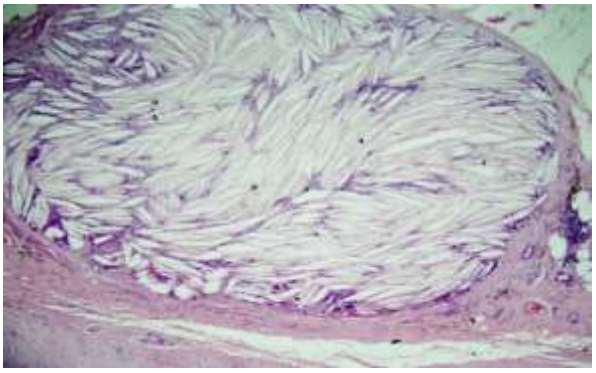

Figure 2: Showing cholesterol clefts.

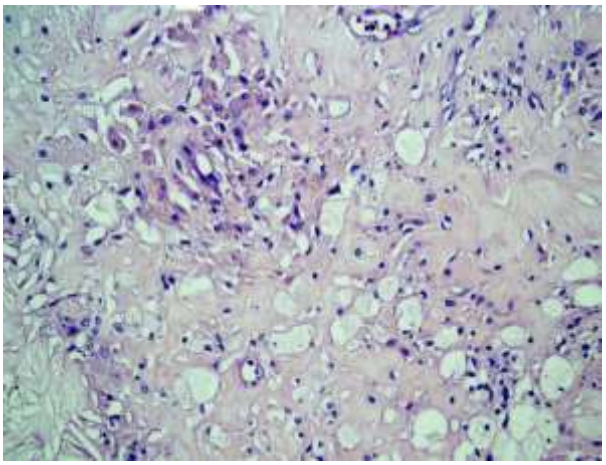

Figure 3: Necrosed adipocytes.

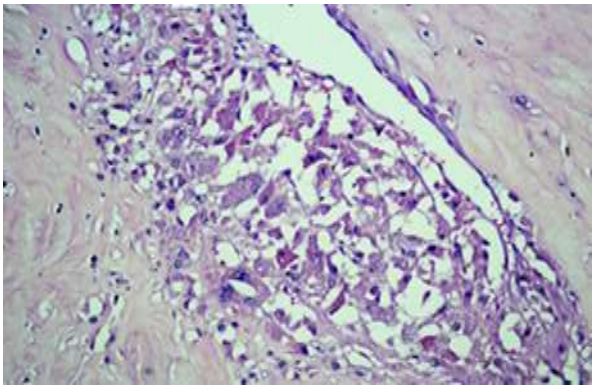

Figure 4: Necrosed adipocytes.

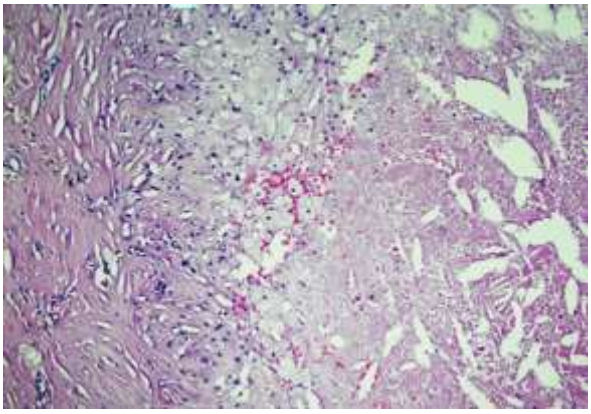

Figure 5: Sheets of foamy macrophages.

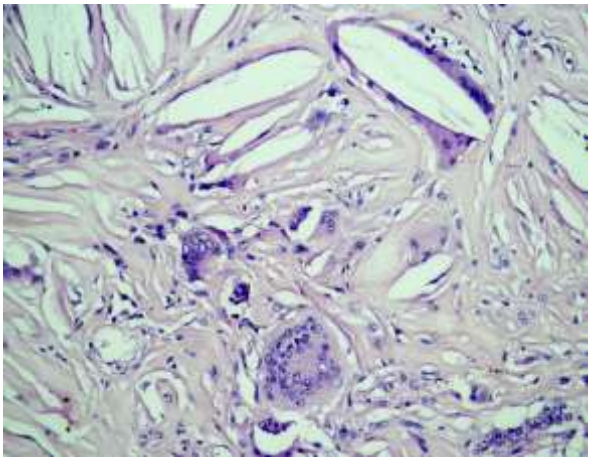

Figure 6: Foreign body giant cells.

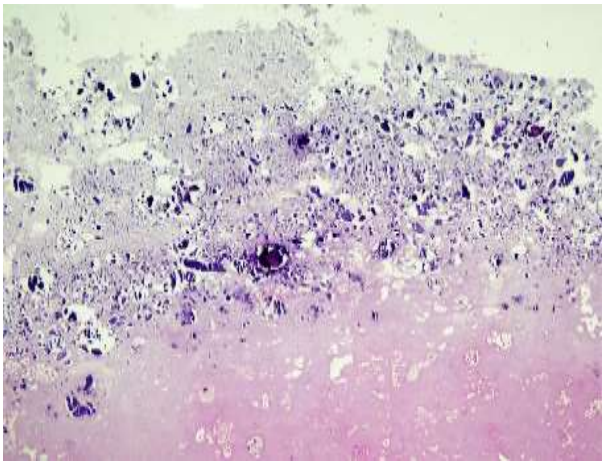

Figure 7: Thick fibrocollagenous tissue showing dystrophic calcification.

DISCUSSION

Encapsulated fat necrosis was first described in a 52 years old woman by Schmidt Hermes and Loskant as multiple calcified nodules in the breast.[3] Przyjemsld and Schuster reported and characterized 4 cases of localized subcutaneous fat necrosis in the legs in young boys. The

lesion was termed nodular cystic fat necrosis as the nodules were histologically composed of fat necrosis with cystic changes. Historically, it has also been referred to as mobile encapsulated lipoma, nodular fat necrosis, encapsulated necrosis and post-traumatic fat degeneration. It is an uncommon condition, only 49 cases have been described in the literature. The age ranges from 9 to 77 years, and the average is 40.9 years. Females predominated males in number. The mean age of male patients is 29.9 years and for female patients it is 47.8 years. The most commonly affected site is the lower extremity and 28 patients had multiple nodules.[4]

The pathology of this lesion is not fully understood. The history of antecedent trauma is evident in one-third cases.[1] The lesions are thought to begin as single or multiple lobules of adipose tissue that develop vascular insufficiency possibly due to trauma. Gradually the lesions become separated from the surrounding tissue by a thin fibrous tissue capsule. The capsule creates a distinct plane of cleavage from the surrounding tissue and the sequestered nature of the lobules prevents them from being resorbed. Thus, the lesions consist of a core of necrotic fat cells surrounded by a fibrous capsule. Further change in the form of dystrophic calcification may occur.[5]

The clinical and histopathological features are as follows. Most of the lesions were mobile and histopathologically showed quite similar patterns. The nodules are encapsulated with thin to thick fibrous tissue. Occasional evidence of inflammation and calcification is also seen.[5]

Typical histology is seen only in more advanced cases.[1] All lesions are almost completely encapsulated but early lesions show a gradual transition from viable to non-viable tissue. The next histological stage is an encapsulated lesion with 'ghost like' adipocytes. Further progression results in more marked fibrosis and calcification.[5]

The differential diagnosis of subcutaneous mobile lumps includes lipoma, angiolipoma, membranous fat necrosis, pancreatic fat necrosis and alpha 1-antitrypsindeficiency-associated panniculitis.[5]

CONCLUSION

In conclusion, encapsulated fat necrosis enters the differential diagnosis for any mobile subcutaneous swelling. The clinical resemblance to a lipoma has led some authors to suggest that it may not be as rare as published experience suggests. The pathology is, however, distinctive and allows precise diagnosis.

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