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Mature (Benign) Cystic Teratoma of The Adrenal Gland- A Rare Entity

KEYWORDS: Adrenal mass, mature cystic teratoma, retroperitoneum

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ABSTRACT *Teratomas are germ cell tumors which are most often found in the gonads- the testes and the ovaries. They are rarely found at other sites like floor of mouth, thyroid, mediastinum, retroperitoneum etc. The age group commonly affected are children. Only rare cases occur in adults. Adrenal gland as a site of teratoma is extremely rare. Some cases have been mistakenly diagnosed to be lipomatous lesions of adrenal gland by radiological imaging. . Most teratomas are benign but have a potential for malignant transformation. Thus, diagnosis, radiological and histological correlation and surgical resection with proper follow up is necessary. Here we report a case of benign cystic teratoma arising from the left adrenal gland in a 20 year old female patient who had presented with dull-aching abdominal pain for 6 months.*

INTRODUCTION

Teratomas are germ cell tumors derived from totipotential cells and originate from more than one and usually all three of the primordial germ cell layers-the ectoderm, mesoderm, endoderm. Midline (paraxial) structures are the usual sites of occurrence. The most common sites are the gonads followed by extragonadal sites such as cervical, mediastinal, intracranial, retroperitoneal and sacrococcygeal regions. Retroperitoneal teratomas are rare and constitute only 1% of primary teratomas.[1] Teratomas originating from the adrenal gland are rare and very few such cases have been reported. Majority of the cases are asymptomatic or are diagnosed based on clinical suspicion, routine laboratory, and radiological investigations . Some of them have been misdiagnosed as lipomatous tumors. The histological diagnosis remains the mainstay. Though majority of the teratomas are benign, they have a potential for malignant transformation (3-6%). [2]Thus surgery and close follow-up is the recommended therapy. Here we report a case of mature cystic teratoma in a 20 year old female patient.

CASE REPORT

A 20-year-old female patient presented with abdominal pain for 6 months. The pain was dull aching in nature and used to aggravate on walking. There were no other specific complains. On physical examination, the patient was afebrile. Her arterial blood pressure was 110/80 mm of hg. Abdominal examination revealed a palpable, non-tender left flank mass. No other physical findings were noted.

Results of complete blood count and routine biochemistry evaluations, including renal and liver function tests, were normal.

Ultrasonography of the abdomen showed a mixed echogenic mass with areas of calcification in the adrenal region. Computed tomography showed a mass containing fat, calcification and soft tissue component in supra-renal region indenting the superior pole of kidney and the adrenal gland was indistinct [Fig. 1(left)]. Upon surgical exploration, a tumor originating from the adrenal gland was identified and the tumor was non-adherent to the surrounding structures [Fig. 1(right)]. The patient underwent complete surgical resection of the lesion. The post-operative period was uneventful.

HISTOPATHOLOGY

Grossly, a single globular tissue was received measuring 13cmx10cmx7cm. Outer surface was congested, lobulated and yellowish with cut section showing solid and cystic areas. Multiloculated cysts containing cheesy material and hairs were present in the wall [Fig.2]. There was a yellowish solid area with foci of whitish area. Focal hard area (bony) was found .Multiple sections were given from different areas.

On microscopy,[Fig 3], the sections showed histology of a tumor composed of cystic structures lined by stratified squamous epithelium and filled with keratin flakes. Many hair follicles, sebaceous units and mucosal glands were found. Areas of mature adipocytes, muscle bundles and collection of foamy histiocytes were also present. Foci showing mature glial tissue, nerve bundles, bone with marrow material and islands of cartilage were also seen. At one focus normal looking adrenal tissue was identified. No immature elements were found. Overall histomorphological features were suggestive of a mature cystic teratoma.

DISCUSSION

The type of pluripotent cell that gives rise to the tumor largely influences the presentation time and site of teratoma. Teratomas that are of germ cell origin can be congenital or acquired and are usually found in gonads [3, 4]. In contrast, teratomas of embryonic cell origin are always congenital and are usually found in extra gonadal locations, such as intracranial, cervical, retroperitoneal, mediastinal, and sacrococcygeal sites [5-8]. Only few cases of teratomas originating from the adrenal gland have been reported. It is a rare site of origin of a teratoma. Retrop-

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eritoneal teratomas have bimodal peak of incidence (in the first 6 months of life and in early adulthood)[10]. They are usually of large size since the retroperitoneum provides a large space for growth, but are mostly asymptomatic.

Clinical presentations are variable. They mostly include nonspecific, abdominal or flank pain, obstructive gastrointestinal and genitourinary symptoms or lower limb/genital swelling caused by lymphatic obstruction. They can rarely also present with secondary infections, traumatic rupture leading to acute peritonitis, or malignant transformation. Some of them have been diagnosed as lipomatous lesion of the adrenal gland on radiological imaging [11].The lipomatous lesions of the adrenal include myelolipoma, lipoma, angiomyolipoma and liposarcoma [12].Teratomas are more heterogenous and show a mixture of fat, fluid and sebum forming a fat-fluid level. They also more commonly have areas of calcification as compared to other lipomatous tumors originating from the adrenal gland. Calcifications are seen as punctate, or linear-strand high densities in mature teratomas. However, histopathology always remains the mainstay for diagnosis.

CONCLUSION

Thus, to conclude, adrenal teratomas should be considered in the differential diagnosis of hormonally silent adrenal tumors and in the differential diagnosis of adrenal lipomatous tumors, not only in children and young adults, but also in elderly patients. Complete surgical resection and close follow-up of the patient is recommended. Prognosis is excellent after complete excision with 100% 5-year survival rate [13].

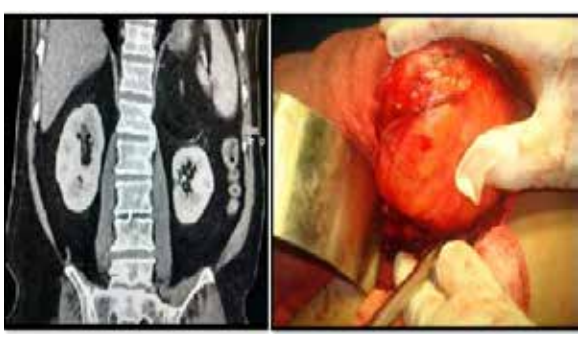

**Fig. 1- Left: Radiological imaging (CT scan)
Right:On surgical exploration**

Fig. 2- Gross view showing cheesy material and hairs

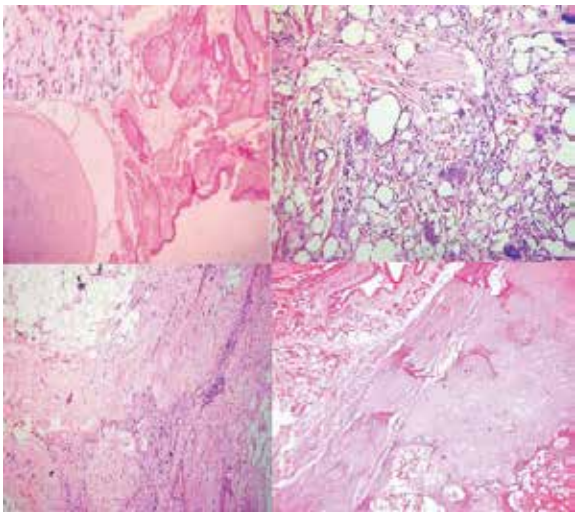

**Fig. 3- On microscopy, histological images showing various components of teratoma (stratified squamous epithelium, hair follicles, mucosal glands, mature adipocytes, skeletal muscle,mature glial tissue, bone with marrow material, islands of cartilage).
Inset shows normal looking adrenal gland identified at one focus.**

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