

Case Report

SUPRARENAL MATURE CYSTIC TERATOMA - AN UNUSUAL AND RARE FINDING: CASE REPORT AND REVIEW OF LITERATURE

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ABSTRACT

Teratomas are neoplasms that originate from totipotent cells and are made up of several parenchymal cell types originating from more than one germ cell layer. Primary retroperitoneal teratomas in the suprarenal location are extremely rare. They are more common in childhood and rarely occur in adults. They usually present with abdominal masses and no specific symptoms. Radiological examination is very important in these tumors as these have a wide range of differential diagnosis, particularly lipomatous tumors in this site.

This case report describes a suprarenal tumor in a 15 year female who presents with abdominal distension and pain. Computed tomography (CT) showed a large heterogeneous mass with areas of calcification and fat. Histologically, a diagnosis of mature cystic teratoma was made.

Keywords: Teratomas, Suprarenal, Neoplasms, Totipotent

INTRODUCTION

Teratoma is a germ cell tumour derived from totipotent cells and made up of several parenchymal cell types originating from more than one germ cell layer (Polo *et al.*, 2004). The incidence of germ cell tumors has been estimated at about 0.9/100,000. Of these, teratoma is the leading foetal and neonatal neoplasm (Ciftci *et al.*, 2013). Teratoma commonly affects the gonads and sacrococcygeal region. Extragonadal teratoma is a rare entity. Teratomas in renal and adrenal region are exceedingly rare and only a few cases have been reported so far (Serhrouchni *et al.*, 2013; Shrestha and Lalchan, 2010). They are more common in childhood and rarely occur in adults (Bhatti *et al.*, 2013). Mature teratoma in the region of renal and adrenal glands can mimic other types of lipomatous tumors (Hui *et al.*, 2004).

Most teratomas in this region are secondary to gonadal germ cell tumors especially in males, in whom retroperitoneal germ cell tumors are more likely to be metastatic from the testes rather than primary tumors (Ciftci *et al.*, 2013).

Herein, we report a case of suprarenal teratoma in a 15 year old female, who presented with left sided abdominal distension and pain.

CASES

A 15 year-old female patient was admitted to the hospital, who presented with complaints of left sided abdominal distension and pain. Computed Tomography (CT) scan showed a large irregular left suprarenal mass measuring 11x10x8 cm, causing displacement of the kidney posteriorly. The lesion was extending inferiorly up to the renal hilum. Adrenal gland could not be identified separately.

Vanillylmandelic acid levels were 1.10 mg/g of creatinine.

Grossly, a partially encapsulated, lobulated gray yellow soft tissue specimen was received measuring 9x8x6 cm in size. Cut section of the specimen was cystic and filled with mucinous material along with presence of hair (Figure 1).

Histologically, the tumor showed presence of mature adipose tissue, hair follicles, mature cartilage, seromucinous glands; pseudo stratified ciliated columnar epithelium and pigmented retinal epithelium (Figure 2, 3, 4)

So a diagnosis of suprarenal mature cystic teratoma was made.

Case Report

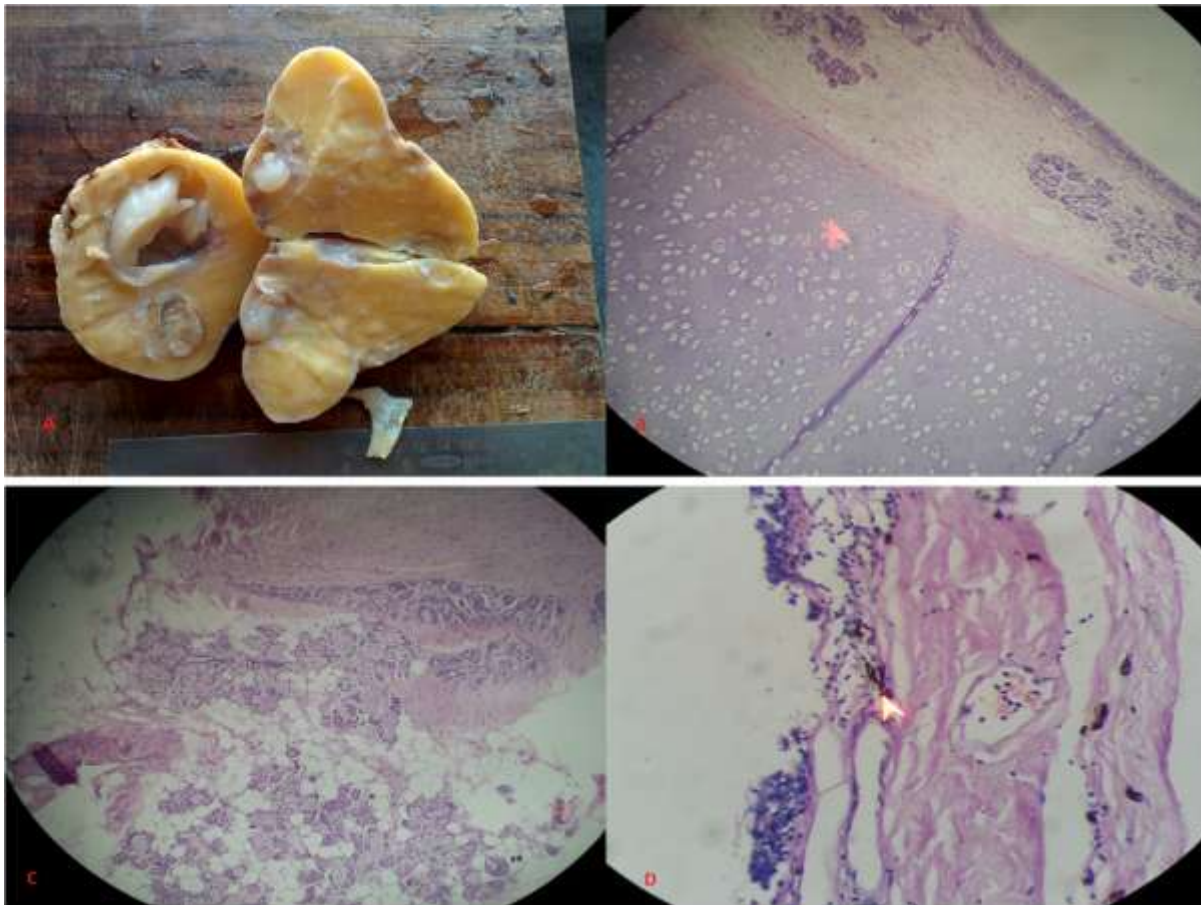


Figure 1: (A) Cut section of the specimen showing a grey yellow lobulated tumor with presence of cyst filled with mucinous material along with hair. (B) Low power view showing pseudo stratified ciliated columnar epithelium, glands and cartilage (H&E 100X). (C) High power view showing fibroadipose tissue and sero-mucinous glands. (H&E 200X). (D) High power view showing pigmented retinal epithelium. (H&E 200X)

DISCUSSION

Teratomas are congenital tumors arising from pluripotent embryonal cells with tissue derivatives from all the three germ cell layers (Serhrouchni *et al.*, 2013; Shrestha and Lalchan, 2010; Hui *et al.*, 2004). They most commonly occur in ovaries, testes, sacrococcygeal region, central nervous system and only rarely in other locations with less than 5% occurring in the abdomen (Polo *et al.*, 2004; Serhrouchni *et al.*, 2013; Shrestha and Lalchan, 2010; Hui *et al.*, 2004). Gonadal teratomas usually manifest in adults whereas extragonadal teratomas are mainly seen in children and occur as secondary neoplasms (Ciftci *et al.*, 2013; Bhatti *et al.*, 2013). In this case, the patient was a child (15 year female) with extragonadal teratoma (suprarenal).

Histologically these tumors are classified into mature, immature and malignant teratomas depending on the type of structures present. Mature teratomas are benign and usually occur as cystic masses and are also known as dermoid cysts (Polo *et al.*, 2004; Bhatti *et al.*, 2013). This case presented as a suprarenal cystic mass and showed presence of mature elements and hence classified as mature cystic teratoma (dermoid cyst).

Some reports have shown the presence of ectopic tissues located in suprarenal location which include bronchogenic, nephrogenic and thyroid tissues but these lack the range of tissues needed for the diagnosis of teratoma (Ciftci *et al.*, 2013).

Case Report

Teratomas in these locations have no specific clinical manifestations and are often diagnosed on radiological examination. However these patients may present with abdominal distension, pain/discomfort, low back pain and sometimes obstructive gastrointestinal and genitourinary symptoms (Ciftci *et al.*, 2013; Serhrouchni *et al.*, 2013; Bhatti *et al.*, 2013). In this case, patient presented with left sided abdominal distension and pain.

Radiological examination is very important in the diagnosis of these tumors at such unusual locations. The differential diagnosis of retroperitoneal teratomas includes ovarian tumors, renal cysts, Wilms tumor, sarcomas, retroperitoneal fibrosis, hemangiomas and lipomatous tumors. Predominant fat content is often seen in a teratoma and sometimes it is difficult to distinguish them on ultrasound. CT demonstrates a heterogenous mass with fluid component, adipose tissue, sebum and calcification. It also helps to determine the extent of the tumor and to evaluate the cyst wall (Polo *et al.*, 2004; Ciftci *et al.*, 2013; Serhrouchni *et al.*, 2013; Shrestha and Lalchan, 2010). The presence of calcification indicates a strong possibility of teratoma rather than lipomatous tumors (Shrestha and Lalchan, 2010; Bhatti *et al.*, 2013; Hui *et al.*, 2004). CT scan in this case showed a large irregular heterogenous left suprarenal mass measuring 11x10x8 cm with areas of calcification, causing displacement of the kidney posteriorly. The lesion was extending inferiorly up to the renal hilum. Adrenal gland could not be identified separately.

Liposarcoma is the commonest adult soft tissue sarcomas and may present with cystic, muscle or fat density (Shrestha and Lalchan, 2010). The female in our case had an retroperitoneal lipomatous tumor on CT and the differential diagnosis included dermoid cyst and liposarcoma. Surgical resection was thus performed and histologically it was classified as benign cystic teratoma.

In such cases of origin of these tumors in these unusual locations, there are often difficulties in determining the exact tissue of origin of these tumors. Because of the close proximity to the adrenal gland, origin in this gland cannot be ruled out (Polo *et al.*, 2004). In our case too, adrenal gland could not be identified separately on CT as well on gross examination so the probable location of origin could be adrenal.

To conclude, primary teratomas at such site are unusual and present with wide differential diagnosis particularly lipomatous tumors i.e. liposarcomas. Therefore, teratomas should be considered in the differential diagnosis of adrenal/suprarenal lipomatous tumors.

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