



TORSION IN ADOLESCENCE OF LARGE MATURE CYSTIC TERATOMA IN A LOW RESOURCE SETTING

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INTRODUCTION

Ovarian tumors whether benign or malignant occur in only about 1-2% of the pediatric and adolescent population. Of the benign ovarian tumors, mature cystic teratoma (MCT), are the most common. They are characterized histologically, by having an external lining composed of squamous epithelium with an underlying fibroconnective tissue containing a wide variety of other tissue types such as hair follicles, sebaceous, eccrine, and apocrine glands. Abdominal pain is the most common presenting symptom of ovarian tumors, followed by a palpable abdominal or pelvic mass. The work-up of these patients in addition to history and examination typically includes, imaging (ultrasound and CT) and tumor markers. On average these tumors are less than 10cm, but occasionally they can grow larger, and these larger tumors put patients at increased risk for complications such as ovarian torsion. Laparoscopic surgical intervention is standard in these cases, but often in low resource settings is not feasible.

CASE REPORT

History

A 15-year-old, obese, nulliparous, female presented with sharp, intermittent, right sided abdominal pain, 9/10 in severity and increased abdominal girth. Last menses was five months prior with no previous sexual activity or associated symptoms.

Physical Examination

Abdominal exam - obese non tender abdomen. A right sided mass was barely palpable in the right lower quadrant due to abdominal girth.

Imaging

Ultrasound and CT revealed a predominantly cystic, multiloculated mass measuring 17.5(H) x 12.5(T) x 8.7(AP)cm in the lower abdomen and right adnexa containing fluid, soft tissue density, small focal areas of fat density, multiple calcific foci, and no significant blood flow.

Lab Investigations

Tumor markers for CEA and CA125 were 3.6ng/mL and 16.0U/mL respectively.

SURGICAL PROCEDURE AND FINDINGS

Open laparotomy with right oophorectomy, partial omentectomy, peritoneal biopsy and washings were performed.

An adnexal mass measuring 18cm x13.5cm x5cm, with right ovarian torsion was excised.

Pathology

Mature cystic teratoma, and omental biopsy showed hemorrhage and congestion.



Fig. 1 Mature cystic Teratoma excised

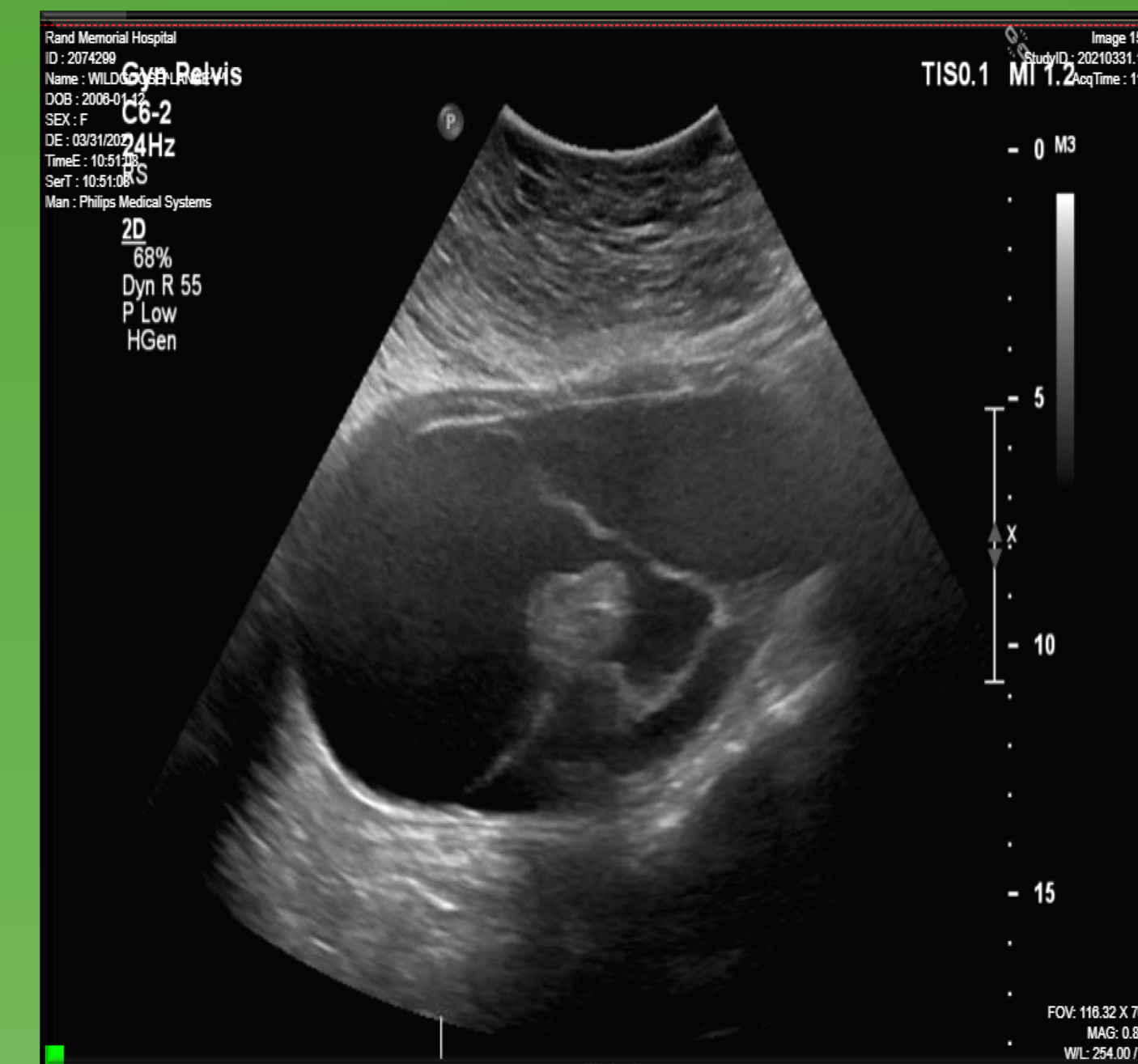


Fig.2 Ultrasound findings of MCT

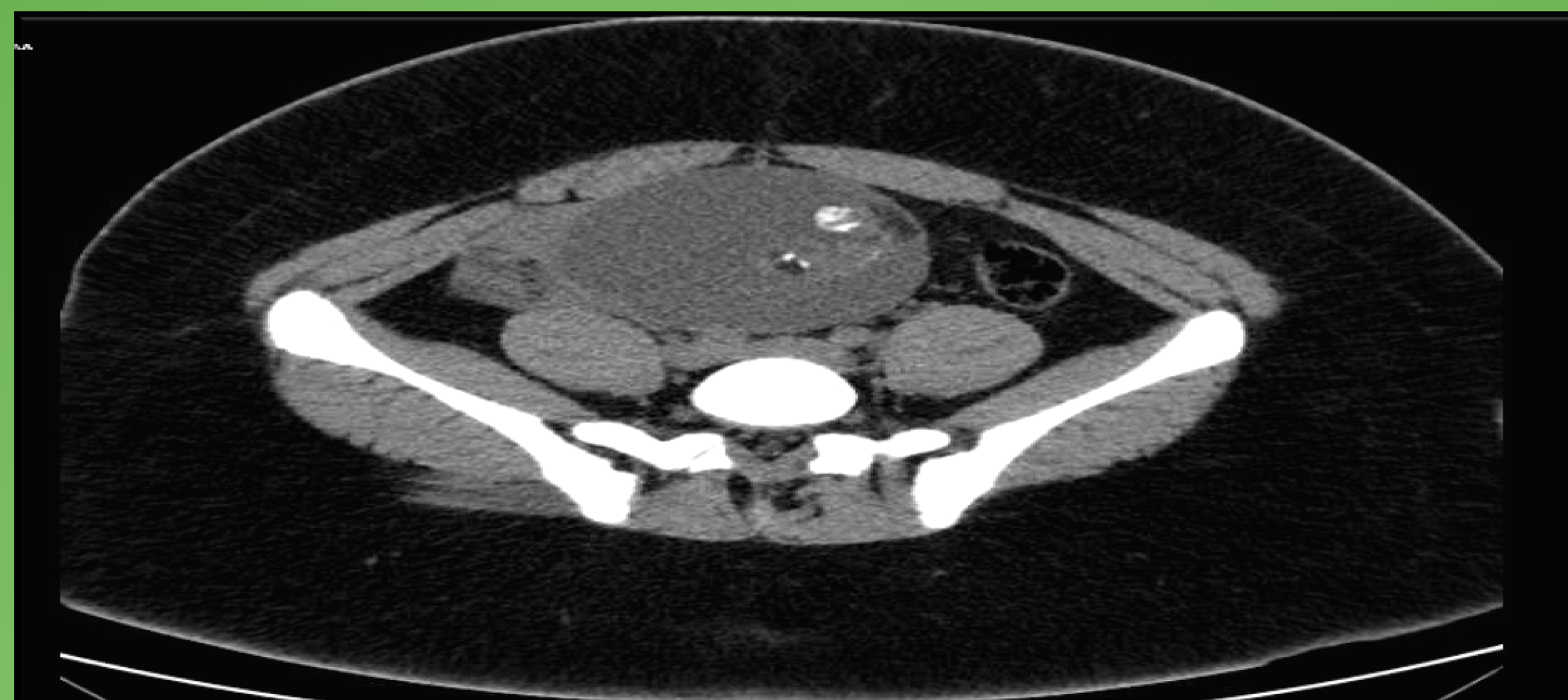


Fig. 3 CT findings of MCT

DISCUSSION

Mature cystic teratomas are the most common ovarian neoplastic lesions found in adolescents. These masses are a benign type of germ cell tumor that arises from totipotent cells in the ovary which develop into fully differentiated ectodermal, mesodermal, and endodermal tissue. More than 80% patients with ovarian torsion had ovarian masses of 5 cm or larger, indicating that the primary risk in ovarian torsion is an ovarian mass. The sizes of ovarian masses are correlated with the risk of the torsion. Ovarian torsion has been reported to occur with masses from 1 to 30 cm.

Mature cystic teratomas are usually less than 10cm in largest dimension, but occasionally they can grow larger as was demonstrated in this case with the tumor measuring 18cm x13.5cm x5cm. The abnormally large size of the tumor is significant in this case as this large tumor put the patient at increased risk for ovarian torsion, as.

The ideal treatment of these tumors are laparoscopic cystectomy particularly in adolescent patients as the goal is to preserve fertility. As a result of the large size of the teratoma, the subsequent torsion and lack of laparoscopic equipment at the institution resulted in oophorectomy. In such cases it is important to adequately counsel patients on any potential impact to fertility in the future.

Ideally this surgery would have been performed laparoscopically which would have reduced the hospital stay and ultimately less pain and morbidity for the patient. Unfortunately these services were not available at the institution at the time due to the lack of functional equipment.

CONCLUSION

Mature cystic teratomas are the most common ovarian mass that varies in size, but typically are less than 10cm particularly in the younger adolescent population. Early recognition of particularly large tumors are important for good clinical outcomes. Cystectomy with ovarian preservation is preferred as first line management in nulliparous females if there is a clear demarcation between the mass and the uninvolved ovarian tissue. However in circumstances where that isn't possible or where as in this case the tumor has grown so large and is resulting in compromise of the ovary then oophorectomy must be performed. Young patients must then be counseled on the potential impact this could have on future fertility.