

## Case Report

# Giant mature cystic teratoma of the ovary mimicking a 36-week pregnancy in a 14-year-old female

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## ABSTRACT

A dermoid cyst is a mature cystic teratoma, most common benign germ cell tumor of the ovary. It arises from totipotent germ cells and can contain well-differentiated tissues from all three germ layers. It is one of the most common benign ovarian neoplasms, occurring in a wide range of sizes. Early diagnosis is essential to prevent potential complications such as torsion, rupture, internal haemorrhage or malignant transformation. Most commonly seen in reproductive age group (20-40 years). Large mature cystic teratoma of ovary exceeding 10cm is extremely rare teratoma. Here we are presenting the case of giant mature cystic teratoma of ovary in 14-year adolescent female, which was mimicking 36weeks pregnancy. Patient had complaints of abdominal distension with decrease appetite and weakness since 2months. On per abdominal examinations there was a lump, which was mimicking 36 weeks pregnancy. Which was managed with exploratory laparotomy and left salpingo-oophorectomy and kept her on regular follow up.

**Keyword:** Adolescent female, Benign ovarian tumor, Germ cell tumor, Giant ovarian tumor, Mature cystic teratoma, Left salpingo-oophorectomy

## INTRODUCTION

Ovarian dermoid cysts, which are also called mature cystic teratomas (MCTs), are the most common ovarian germ cell tumors in young women.<sup>1</sup> The reported incidence is about 1.2-14.2 cases per 100,000 people per year.<sup>2</sup> Mature teratoma is the most common subtype of ovarian germ cell tumors, which accounts for 11% of all ovarian tumors, 69% of all germ cell tumors, and 95% of teratomas.<sup>1,3</sup> Although most mature cystic teratomas are benign, the reported incidence of malignant transformation is 0.5% to 3% within the MCT, especially in women of advanced age.<sup>4,5</sup>

In our case, the patient was 14year adolescent female who had giant mature cystic teratoma of ovary measuring

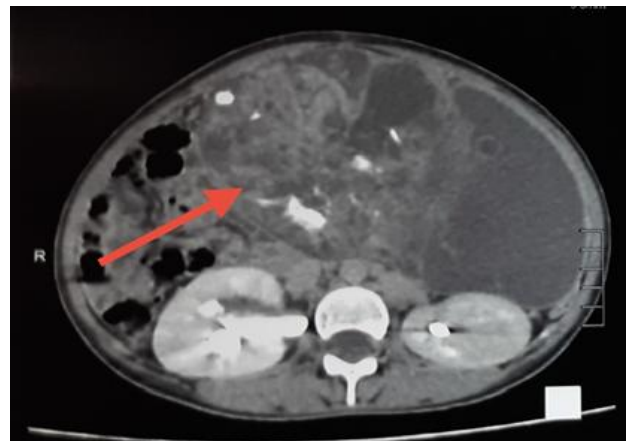
11.3×17.8×30.3 cm (AP×ML×SI). Extremes of age should be kept in mind.

## CASE REPORT

A 14-year unmarried girl, the patient had complaints of abdominal distension since 2 months, generalised pain in abdomen since 5days along with loss of appetite and weakness. The patient had menarch 1year back, following menarche she had regular cycles for 1year after which she did not have her cycle, her last menstrual period was 3months back. Patient's ultrasound abdomen and pelvis showed a large, well defined solid cystic intraperitoneal lesion measuring 16.5×8.9×20 cm noted involving the epigastrium, umbilical region and hypogastrium with extension into left lumbar region. The cystic component shows multiple septa with few internal mobile echoes

within. The solid component shows mild internal vascularity and not seen separately from the bowel wall. Physical examination revealed that the patient was in good general state, with an abdominal distension, abdominopelvic mass, from epigastrium region to pelvic region, corresponding to 36 weeks size without tenderness. Its lower border could not assess. All routine investigations were within normal limits. Computed tomography of abdomen with pelvis was suggestive of an approximately 11.3×17.8×30.3 cm (AP×ML×SI) sized well-defined mixed density multi-loculated multiseptated solid-cystic pelvico-abdominal lesion with enhancing walls and few thin as well as thick enhancing septae (maximum thickness 3.3 mm) within is noted in the midline and on the left side extending from inferior endplate of S5 to superior end plate of D11 vertebral level, with left ovary not seen separately from it (Figure 1 and 2) The lesion has non-enhancing cystic areas, areas of fat density and multiple dense coarse calcifications within the solid component and along the septae. The solid component appears irregularly marginated and is seen predominantly along the anterior and right lateral aspect of the lesion, shows subtle arterial phase enhancement with progressive enhancement on the venous and delayed phase. Relations of the lesion as described: Posteriorly, the lesion is abutting abdominal aorta (angle of contact <180°), right iliac vessels, celiac artery, SMA, IMA and left renal artery (angle of contact<180°), however shows normal contrast opacification. It is seen severely compressing the distal splenic vein with resultant multiple collaterals noted in splenic hilar, perisplenic and gastrosplenic region. Few extramural gastric collaterals are also noted. It is seen severely compressing the left renal vein with resultant multiple venous collaterals seen along left aspect of the lesion, left parametrial region and bilateral adnexa causing pelvic congestion. Left gonadal (ovarian) vein is also prominent. The distal IVC and proximal bilateral common iliac veins are also severely compressed. The lesion is abutting and compressing the body of pancreas with effaced fat plane is seen compressing the right mid and distal ureter with resultant dilatation of right proximal ureter and pelvicalyceal system. It is also abutting the left kidney and right iliopsoas muscle with effaced fat planes. Inferiorly and left laterally, it abuts the abdominal wall with effaced fat planes. Left laterally, it is abutting splenic flexure of colon and descending colon with effaced fat planes. Right laterally, the lesion is seen displacing small bowel loops and hepatic flexure of colon. Superiorly, it is seen abutting the body of stomach along the greater curvature, transverse colon and inferior pole of spleen. Postero-inferiorly, it is compressing the dome of urinary bladder with effaced fat planes. The uterus is stretched and displaced left laterally by the lesion. Right ovary is normal in size with multiple small follicles within, it is seen displaced inferiorly and towards the midline. It is also seen abutting the rectosigmoid junction and sigmoid colon with effaced fat planes. Mild ascites present. Above-described imaging features are suggestive of neoplastic etiology, likely left ovarian teratoma. Tumour markers-alpha fetoprotein-7.22, LDH-685, beta hCG-<0.90, CA125-149.1. After preoperative investigations, patient was planned for exploratory laparotomy and left salpingo-oophorectomy.

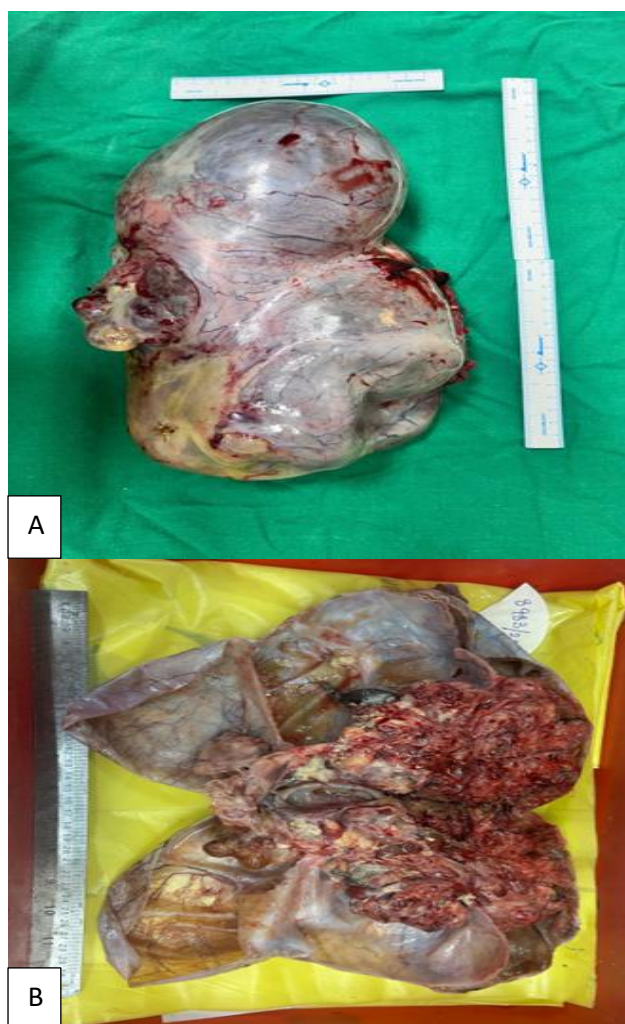
Intraoperatively, it showed large solid cystic mass of 30×15×10 cm approximately (Figure 3 A) arising from the left ovary and was removed intact without any spillage. Peritoneal fluid was sent for cytology which came negative for malignancy. Saline wash given. No intra-operative complications noted. Gross appearance of specimen was suggestive of smooth and globular. Solid nodule seen on external surface, predominantly cystic in nature. On cutting open serous straw-coloured fluid, few locules show mucinous material. Cut surface is solid, cystic multiple locules of varying sizes seen. Few locules show pultaceous material and have solid component (Figure 3 B). Nodules on the serosal surface shows hemorrhagic and solid areas. Solid component also shows bony, gritty areas in many places. Microscopically, multiple Sections studied from ovarian mass shows complete replacement of ovarian parenchyma by a variegated tumor showing mature element derived from ectodermal, mesodermal and endodermal origin. Multiple areas of mature cartilage, polisebaceous units, mature glial cells, respiratory epithelium, adipose tissue seen. No immature or malignant component noted, suggestive of mature cystic teratoma of ovary. Tumour was confined to ovary, fallopian tube. Postoperatively patient was hemodynamically stable and there were no complications. Discharge on postoperative day five.



**Figure 1: Axial section of computed tomography of abdomen and pelvis.**



**Figure 2: Coronal section of computed tomography of abdomen and pelvis.**



**Figure 3 (A and B): Gross appearance of ovarian mature cystic teratoma specimen.**

## DISCUSSION

In literature, diagnostic methods have shown that mature cystic teratomas larger than 10 cm are infrequent. Ovarian cysts termed large when they exceed 5 cm and those over 15 cm in size are classified as giant. In our patient, mature cystic teratoma of ovary had size of 11.3×17.8×30.3 cm (AP×ML×SI). About 20% of mature teratomas are asymptomatic at the time of diagnosis and are usually detected incidentally during imaging examinations, pregnancy, or abdominal or pelvic surgery for other reasons.<sup>6,7</sup> Larger tumors may present with abdominal pain, symptoms of increased pelvic pressure, and a palpable mass during abdominal examination.<sup>7</sup> Acute abdominal pain accounts for 5-10% of all matured teratomas and is frequently caused by ovarian torsion. Patients may also experience nausea, vomiting, fever, and abnormal bleeding.<sup>7</sup> In our case, the patient had complaints of abdominal distension and on per abdominal examination mature cystic teratoma was occupying large space of abdominal cavity from left ovary to epigastrium, which was mimicking 36 weeks pregnancy, in 14-year adolescent female. Ultrasound (US) is the most commonly

used imaging method to confirm ovarian dermoid cysts and is accurate enough to make a diagnosis that can be confirmed by post-operative histopathology.<sup>8</sup> CT and MRI are alternative methods of diagnosing dermoid cysts, both of which are more sensitive to fat than ultrasound.<sup>9</sup> Histologically, squamous epithelium lines the wall of the cyst, and the external surface is covered by the ovarian stroma.<sup>10</sup> In 88% of cases, tumors are unilocular with Rokitansky nodules, which contain hair, teeth, and other tissues.<sup>11</sup> The tumor cyst is filled with sebaceous material, which is liquid at body temperature and semisolid at room temperature.<sup>12</sup> Ectodermal tissue could be found in almost 100% of cases, such as the skin. Fat, bone, cartilage, and muscle as mesodermal tissue are represented in over 90% of cases. Endodermal tissue is less seen compared with the previous two.<sup>12</sup> The management of mature cystic teratomas depends on several factors, including possibilities of malignant transformation, the patients age and desire to preserve fertility. Surgical excision remains the standard treatment and is considered the most effective option for ovarian dermoid cysts. The choice of procedure-cystectomy or oophorectomy-is guided by the patient's reproductive needs and the extent of ovarian involvement.<sup>13</sup> In our case, we found that teratoma was involving the whole left ovary, so we did exploratory laparotomy with left salpingo-oophorectomy. In cases where malignancy is suspected or when mature cystic teratomas are associated with other ovarian cancers, additional treatment strategies such as chemotherapy or targeted therapy maybe required, which wasn't required in our case.

## CONCLUSION

Large mature cystic teratomas exceeding 10 cm are rare. Although often benign and incidentally detected, they may remain asymptomatic until they reach enormous dimension. Early recognition and prompt treatment are essential to prevent complications such as torsion, rupture or malignant transformation, which can pose serious and potentially life-threatening risks. Treatment plan for giant mature cystic teratoma should be based on clinical symptoms, patient's age and requirement for fertility preservation.

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