

## Case Report

### A case report on fetal ovarian tumor

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#### Abstract

Ovarian tumors may occur in female fetuses and these are diagnosed mainly by prenatal ultrasonography. Ovarian tumors may be benign or malignant. In newborn and children, ovarian tumors have higher cure rate. Though most of the tumors are benign, due to enlargement of cystic follicle but early diagnosis and follow up should be taken under consideration to prevent ovarian torsion and to improve the prognosis of malignancy. The rarity of this condition and controversies in management has prompted me to discuss this case.

**Keywords:** Fetus, ovarian cyst, benign, malignant, prenatal, ultrasonography.

#### Introduction

About 30% female fetuses present with ovarian tumor in prenatal ultrasonography.<sup>1</sup> But after delivery, in live female newborns, the incidence of clinically evident ovarian tumor is about 1 in 2500.<sup>2</sup> They frequently regress and seldom associated with malignancy.<sup>3</sup> Only one out of five ovarian tumors under age 8 may be malignant.<sup>4</sup> Prenatal sonography is uncovering many cases which were previously undiagnosed. <sup>5</sup>There is no evidence of increased risk of recurrence in subsequent pregnancies.<sup>6</sup>

It is a challenge to obstetricians to follow up the patient carefully during the antenatal period, and for this, they must know the natural history to provide the best care. The pathogenesis is mostly unknown, but it is assumed that, these types of fetal ovarian tumors may be result of ovarian stimulation by maternal and fetal gonadotropins.<sup>7</sup> There are some risk factors, which include, inherited gene mutation, Breast cancer gene 1 (BRCA 1), Breast cancer gene 2 (BRCA 2), family history.<sup>8</sup> Mostly the fetal ovarian tumors are unilateral.

#### Case report

Mrs. Meghla, 27 years of age, Para-1(LSCS)+0, 2nd gravida, presented with 24 weeks of gestation. It was her planned pregnancy and throughout the antenatal period, her pregnancy was uneventful. She has past history of benign ovarian tumor. In her anomaly scan report, at 24 weeks, there was an ovarian tumor, measuring about 4cmx3cm in diameter in the right sided ovary of her female fetus. The tumor was cystic, totally anechoic, wall was thin, without any septation or papilla. After that, the patient was sent to more specialized center to repeat the anomaly scan. But the report was same. As the ultrasonography revealed no features of complex cyst, malignancy and torsion, I decided to follow up the patient in conservative way. I also consulted with a paediatric surgeon. Patient and her family were panic. They were

counselled carefully. She was followed up frequently. Transabdominal ultrasound was done monthly until 30 weeks, then fortnightly up to 36 weeks. Delivery was done by LSCS. The female baby was healthy and puerperium was uneventful. Neonatologist and paediatric surgeon were consulted just after delivery. They also accepted the conservative way after delivery but followed up monthly with ultrasonography and tumor markers. The tumor was regressing. At 6 months of age, the ultrasonography report revealed no cyst in both ovaries.

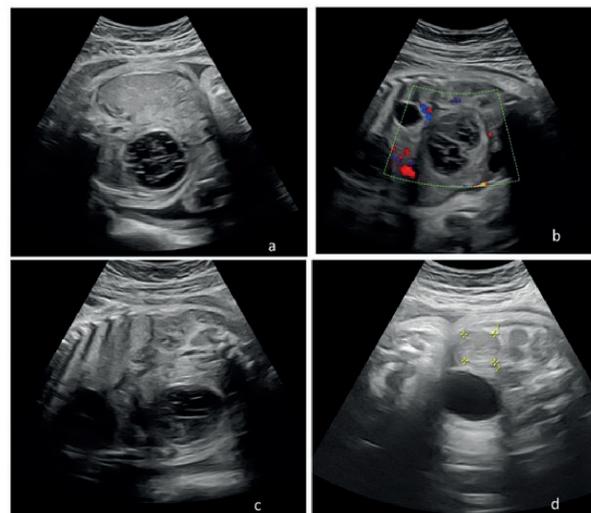


Figure 1: Consecutive prenatal ultrasonography depicting regressing size. (a) at 30 weeks of gestation, 3cm echogenic right sided ovarian tumor, suggesting intracystic hemorrhage, (b) at 32 weeks of gestation, size was increasing , 4.5 cm x 4cm with intracystic hemorrhage, (c) at 34 weeks gestation, the cystic fluid begins to clarify its contents, size wss decreasing, 4.5cm x 3.5cm, (d) at 36 weeks of gestation, size was much decreased, 2.3 cm x 2.3 cm.

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## Discussion

Functional cysts are physiological, and usually disappear with time under proper observation.<sup>9</sup> These are usually unilateral and need no surgery.<sup>10</sup> In ultrasonography, functional cyst appears as simple cyst with thin wall, clear fluid and without septation. But the corpus luteum cysts may appear as complex cyst due to liquid and solid parts.<sup>11</sup> Adnexal torsion and neoplasm also appear as complex. So, it needs intervention.<sup>12</sup> Because, some studies show that, morbidity from untreated neonatal torsion are significant and may ended up with loss of ovary.<sup>13</sup>

Surgery is not recommended in ovarian tumors in newborns, because studies show no difference. Most of the tumors are benign and regresses with time with appropriate follow up. <sup>14</sup> Simple ovarian tumors are expected to resolve 6 months after delivery. Because, in intrauterine life, fetus is exposed to high milieu of gonadotropins, hCG and estrogen. After birth, hCG and estrogen are reduced. Gonadotropins, as Luteinizing hormone (LH) and Follicle stimulating hormone (FSH) levels are high until 3 postnatal months. Thereafter, they fall, as “gonadostat” matures.<sup>15</sup> Simple asymptomatic ovarian tumors, which size is less than 5cm in diameter, should be treated conservatively with proper follow up by the means of ultrasonography.<sup>16</sup> If larger than 5cm in diameter, there are chances of torsion.<sup>17</sup> Although, many studies show no difference between conservative approach and surgical interventions. The main aim is to maximize ovarian salvage.<sup>18</sup> Prenatal needle aspiration is usually not done.<sup>19</sup> Laparoscopy is a good option for the neonates, which provides total view, aspiration, cystectomy and oophorectomy.<sup>20</sup> Surgical removal or detorsion needs delivery of the baby, which may be ended up with other complications of prematurity.<sup>21</sup>

The incidence of ovarian torsion is 17%. The prenatal conservative observational approach may be changed after delivery of the baby, if it is complicated with torsion, or persistent large size or increasing size of the tumor, and for suspicion of malignancy. Because of long pedicles associated with migration of adnexa from level of 10th thoracic vertebra to true pelvis, there may be torsion of ovary along with ovarian tumor. Malignant tumors usually not undergo torsion due to large size and adhesion. Pelvic ultrasound is not reliable to diagnose torsion, but 2D or 3D can be tried.<sup>22</sup> After delivery, prompt surgery is advised for detorsion to preserve the ovary. In case of surgical management, preservation of ovarian tissue is mandatory for future fertility and normal growth. Diagnostic aids and management plans for malignancy are far different than an adult woman.<sup>23</sup>

## Conclusion

Though malignancy is rare, but when occurred, these are a major source of anxiety for mother and family. The treatment needs multidisciplinary approach including obstetrician, neonatologist and paediatric surgeon to

provide good prognosis. Prognosis depend on size and histology. Conservative approach is encouraged.

**Conflict of interest:** None declared.

**Ethical approval:** Not required.

**Consent:** Informed written consent was taken from the mother for publishing the case report and accompanying images.

**Author’s contribution:** Dr. Nusrat Mahjabeen is solely responsible for antenatal care throughout the pregnancy, caesarean section and writing the manuscript.

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