

Conservative Management of a Large Neonatal Ovarian Cyst: A Case Report

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ABSTRACT

We describe a case of a large simple neonatal ovarian cyst, which was managed successfully using “wait and watch” approach and serial ultrasound monitoring. A cystic lesion arising from right ovary was noted in antenatal ultrasound (USG) which was followed up with postnatal USG which revealed a large simple ovarian cyst without any complications. Patient was kept on expectant management with close clinical and USG monitoring. Cyst resolved spontaneously at 10 wk of age. A brief review of literature for likely aetio-pathogenesis and management is also presented.

Keywords: Cyst formation, Dysgenetic gonad, Ovarian hyperstimulation

CASE REPORT

Our case was born to 26-year-old multigravida mother, booked with appropriate supervised antenatal care without any complications. Antenatal USG at 18 wk was normal but a cystic lesion arising from right ovary measuring about 4 X 3 cm and localised to right iliac fossa with a narrow pedicel was noted during USG done at 32 wk gestation. There were no complications or pressure effects from the cyst. The mother developed polyhydramnios towards the end of pregnancy.

Baby was delivered at 40 wk gestation by normal vaginal delivery. Postnatal USG revealed a cystic lesion of 8.6 X 4 cm in size arising from the right ovary extending up to the right iliac fossa [Table/Fig-1a]. The cyst was thin walled and anechoic without any debris or septations. The baby was asymptomatic and feeding well with no complications arising from cyst. Baby was managed without any medical or surgical intervention. Close clinical monitoring and serial USG monitoring was done in the first week of life to look for haemorrhage or torsion. A gradual reduction of the cyst size to 4.6 x 3.7 cm was noted by the end of 1st week of life [Table/Fig-1b]. Baby was discharged and weekly USG monitoring was continued with cyst reducing to 4 x 2.5 cm by the end of four weeks. There was complete resolution of cyst without any sequelae at 10 wk of age. Follow up USG done at 14 months of age demonstrated prepubertal uterus and ovaries with a normal adnexa on both sides.

DISCUSSION

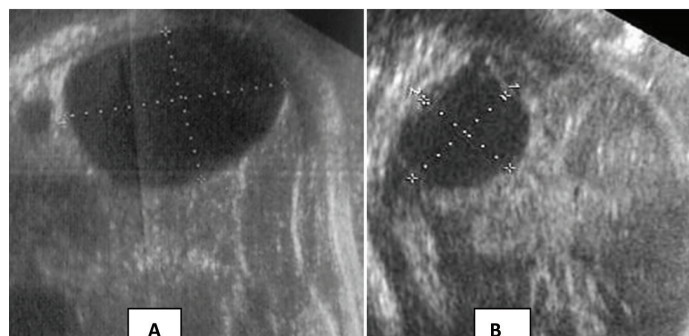
Neonatal ovarian cysts (NOC) are one of the most common tumours seen in female fetuses and newborns. The exact incidence is not known, but estimated to be one in 2,600 pregnancies [1]. Exact etiopathogenesis for development of NOC is unclear but it is hypothesised that formation of the cyst is caused by germinal epithelial secretion in a dysgenetic gonad [2]. During maturation of gonads, the ovary descends in the neonatal pelvis. The position of the NOC is usually high in the abdomen attached to the pelvis by a thin stalk, resembling the pattern of ovarian development suggesting that these cyst are actually dysgenetic gonads which are still in their initial position and have not descended to the pelvis [3]. Another theory suggest role of hormonal imbalances in utero for cyst formation, related to excess gonadotropin, placental hCG or placental oestrogen release [4]. There is a higher incidence of NOC in pregnancies with increasing placental chorionic gonadotropin levels such as in diabetes, pre-eclampsia and Rh incompatibility [5]. Another hypothesized cause of NOC especially in preterm

babies is the immaturity of the gonadostat mechanism, which causes ovarian hyperstimulation [6]. A change in hormonal milieu after birth causing fall in maternal-placental estrogens and β -hCG along with hypothalamic-pituitary-ovarian axis maturation leads to spontaneous resolution of the cysts. Experimental studies would be required to prove this aetiopathologic hypothesis.

The cysts are classified as: *simple*, which are anechoic with smooth walls, and *complex* which may be twisted, with fluid levels, blood clots or septations. The cyst are also classified as large (>4cm) or small. At present there are no guidelines for treatment or monitoring of NOC. Current consensus is based on anecdotal experiences and case series, which suggest conservative management of small simple cyst and operative management for complex cysts. Treatment of a large simple cyst remains controversial [7].

An ovarian cyst is not normally recognised until the third trimester and a diagnosis is usually made based on exclusion of a male fetus and a demonstration of an adnexal rather than mid-line mass with normal renal and gastrointestinal anatomy [8]. This observation was in concordance with our case where second trimester USG was normal. The appearance of polyhydramnios in mother of our case appears unexplained although search of literature suggest a correlation between NOC and polyhydramnios with a possible mechanism could be partial obstruction of the gastrointestinal tract and ascites resulting in transudation [5].

NOC can cause symptoms like pain, irritability, vomiting, fever and abdominal distension in the newborn. Ovarian torsion is the most frequently encountered complication (25-75%) of NOC, and occurs mostly in large cysts. Complications of torsioned cyst include



[Table/Fig-1a,b]: Depicts sonographic pictures of ovarian cyst. A shows the cyst immediately post birth measuring a size of 8.6x4 cm. there was spontaneous resolution to B after 1 week of conservative management to a size of 4.6x3.7 cm

hemoperitoneum, ascites, urinary and intestinal obstruction and auto-amputation. Ovarian torsion is rare in the postnatal period and seen more frequently in the intrauterine period and during birth [9,10]. No complications were noted in our case.

Modalities of operative management includes inutero aspiration of cyst, per cutaneous aspiration postnatally, laproscopic cystectomy or oophorectomy or salpingo-oophorectomy or an open surgery depending on the situation. The major goal of both surgical treatment and non-invasive monitoring is optimal ovarian preservation. However, long-term outcome and risk to future fertility remains unknown [11,12].

Simple small asymptomatic cysts showing no rapid growth can be monitored by serial USG during the pre and postnatal period [7], but as our case was asymptomatic throughout and serial USG monitoring was available with parental willingness of follow up, baby was managed conservatively.

The risks of conservative approach could include a wrong initial diagnosis of an ovarian cyst. Mesenteric, omental and urachal cysts, duplication anomalies, renal cysts, cystic meconium peritonitis, hydrometrocolpos, duodenal atresia, as well as anterior meningocele should be considered in the differential diagnosis of a cystic abdominal mass in a female fetus [10,12]. Conservative management of these conditions could be devastating. Another concern with conservative treatment of a large cyst is the risk of postnatal complications specially torsion which may lead to an acute abdomen. Nonetheless the benefit of sparing the infant of an unwanted surgery along with preservation of a potentially normal gonad may outweigh the risks associated with such a management.

Enriquez et al., in their study managed nine NOC surgically and 11 NOC patients conservatively, noted loss of ovarian tissue in all surgically managed cases [2]. Ben-Ami et al., reviewed records of 23 children diagnosed prenatally with NOC, treated by either conservative management (n = 13) or surgical intervention (n = 10) postnatally. The ipsilateral ovary was not detected in eight of 10 children in complex cysts managed surgically [13].

We suggest that conservative management with sonographic re-evaluation could be an acceptable alternative to surgical therapy in uncomplicated large cysts. Percutaneous aspiration of a large

cyst could be another potential therapeutic approach. Whatever approach is taken, we recommend that sonographic follow up is a must in order to assess the ovaries and identify possible recurrence during the first year of life. We urge investigators for a long-term prospective study for enhancing our knowledge on main outcome of interest (fertility).

CONCLUSION

Conservative management of a large simple ovarian cyst is associated with less morbidity and probably better fertility outcomes in future life.

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