## CASE REPORT

# Minimal Invasive Management of A Giant Neonatal Ovarian Cyst: A Case Report

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**ABSTRACT**

Incidence of antenatal and neonatal ovarian cysts is on a continuous rise due to the improvement in imaging techniques as well as routine use of antenatal ultrasound scanning. We discuss here the laparoscopy assisted management of a case of a giant neonatal ovarian cyst, presenting with obstruction and respiratory distress. The procedure was well tolerated by the patient. Moreover, this technique can be applied in a resource challenged setting and in the beginning of learning curve, as it is not completely intracorporeal. Laparoscopy is supposed to have both diagnostic and therapeutic value with minimal morbidity and ovarian salvage whenever possible. In the hands of an experienced and skilled surgeon, laparoscopy is a good alternative to laparotomy in neonates requiring surgical intervention for ovarian cysts.

**KEYWORDS**

Laparoscopy, Neonate, Ovarian cyst, Cosmesis.

**INTRODUCTION**

Ovarian cysts are the most frequently encountered abdominal tumors in female fetuses and newborns[1]. With the advancements in radiographic techniques and the extensive use and easy access to ultrasonography, ovarian cysts are easily detected in the antenatal scans[2]. It has been well validated in literature that an abnormal exacerbation of the physiologic process heralds the presence of ovarian cysts in the fetus and newborn[3]. However, at the time of birth, maternal hormonal stimulation is withdrawn, amounting to spontaneous resolution of ovarian cysts within the first year of life[4]. Giant ovarian cysts as described in literature are cysts measuring more than 10 cm in size in their largest diameter[5]. While most of the simple cysts resolve, lesions that are giant, complex, or symptomatic may cause complications and might need surgical intervention. This substantiates the role of postnatal ultrasound to re-evaluate the antenatally diagnosed lesions. Approach towards management, whether mini-laparotomy or laparoscopy, remains controversial. Laparoscopic management represents an evolution in management of this pathology. With this intent, author reports a case of giant simple ovarian cyst in a neonate managed with laparoscopic assistance and try to review the available literature.

**CASE REPORT**

We report a referred case of a 5 days old female neonate, birth order 1, antenatally not supervised, delivered by normal vaginal route, to non-consanguineous parents, after 39 weeks of uneventful gestation. The mother had no history of any drug intake, no history of gestational diabetes and no history of congenital anomalies in the family. According to birth records, the baby cried immediately after birth, and had an Apgar score of 10 at 5 minutes. The patient passed meconium (in small amount) immediately after birth; and passed urine 6 hours after birth. Feeds were initiated, but the patient developed complaint of bilious and non-projectile vomiting, abdominal distension and laboured breathing on day 2 of life.Feeds were withheld. The patient was referred on day 5 of life. Baby's weight on presentation was 3.2kg. The patient was dehydrated and had laboured breathing and tense and distended abdomen. The apex beat was located in 5$^{th}$ intercostal space, mid-axillary line anteriorly. However, there was no evident cyanosis and murmur. According to referral slip, there was very infrequent passage of stools over this span of 5 days.

A plain abdominal X ray showed the bowel loops

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shifted towards right. The electrolytes were deranged. Coagulation profile and liver function tests were within normal limits. Septic screen was negative. Ultrasound examination showed a hypo-echoic cystic lesion originating from left ovary, measuring 15×15 cm, shifting the whole bowel upwards and towards right side. Contrast enhanced computerised tomography (CECT) abdomen showed 15×15 cm cystic lesion originating from left ovary. (Figure 1)Tumor markers ( β human chorionic gonadotrophins, alpha fetoproteins) were negative.

The patient was rehydrated, electrolyte imbalance was corrected. Patient underwent laparoscopic surgery after 72 hours of optimization. Two 5mm ports were inserted (optical port-transumbilical and working port in left lower quadrant). Pneumoperitoneum was created. (Flow 2L/min and pressure 6 mm of Hg). A large well defined cyst originating from left ovary was identified. Right ovary and both the fallopian tubes were normal. Cyst was aspirated via working port and copious amount of serous fluid was aspirated. Adhesions to distal small intestine were divided. Cyst wall was delivered via working port and was excised. (Figure 2) Ovary was preserved.Hemostasis was ensured. Port closure was done in layers. Patient was reversed and extubated. Histopathological report of specimen was suggestive of simple follicular cyst. The patient is doing well and well healed scar with good cosmesis; and no evidence of recurrence on USG evaluation over a close follow up of 6 months.


**Figure 1 – CECT abdomen showing huge ovarian cyst occupying the whole abdominal cavity and and displacing the bowel loops.**

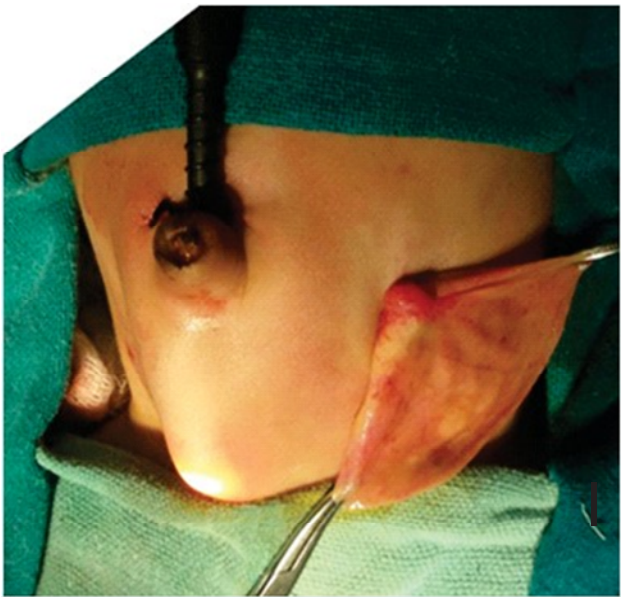

**Figure 2 – Operative photograph showing ovarian cyst wall retrieved via working port post needle aspiration.**

## DISCUSSION

Nussbaum's classification divides neonatal ovarian cysts into simple or uncomplicated (completely anechoic) and complex or complicated (characterized by fluid debris level, clot, septa, and echogenic wall) suggestive of torsion[6]. The presentation of ovarian cysts can range from being completely asymptomatic to the complications like compression of other viscera, torsion with loss of ovary, rupture or haemorrhage. Torsion is the most common (50-78%) complication as neonatal ovary is suspended over a relatively longer pedicle and is commoner in larger cysts[7]. Torsion is known to occur more frequently during fetal life than postnatally. Therefore, to effectively prevent torsion, treatment of fetal ovarian cysts should be performed antenatally, although criteria for prenatal decompression still need to be evaluated[6]. Antenatal aspiration is not routinely practised and deemed to be less successful as continued maternal hormonal stimulation is thought to lead to recurrence[7]. Ultrasound-guided needle aspiration of the cyst can also be a viable alternative to surgery, but this option is associated with more chances of cyst rupture and peritonitis. Also the chances of recurrence are more with needle aspiration[8]. A rare complication of ovarian cysts is autoamputation, which presents as a wandering mass in the abdomen[6]. In newborns, ultrasound has imperative role in evaluation of ovarian torsion; but the role of clinical evaluation cannot be underrated[6]. Symptomatic and complex cysts should

be excised regardless of the size[7]. The management of asymptomatic, uncomplicated cysts still stays controversial[9]. Small simple ovarian cysts under 4 cm in diameter can be observed carefully with serial ultrasonography. However, all complicated ovarian cysts and simple cysts over 5 cm in diameter in addition to smaller cysts less than 5 cm showing no decrease in size should be considered for surgical indication to rescue the ovarian tissue[10]. Laparoscopy is a new evolution in the management of ovarian cysts. However, the major goal of any treatment modality stays optimal ovarian preservation.

Laparoscopy is both diagnostic as well as therapeutic. It is well tolerated by newborns; with better cosmesis at the same time. Additionally, it allows aspiration of the cyst, cystectomy, decapsulation of the ovary, stripping of cysts and, if necessary, oophorectomy. It demands some adjustments in instruments and insufflation pressures (6-8 mm Hg) with constant monitoring of end-tidal CO2. In our case, operating time was 60 minutes. There were no intraoperative or postoperative complications. And the patient was discharged within 24 hours after surgery. Hence, our case demonstrated the feasibility of the minimally invasive technique using two ports for ovarian cystectomy in a neonate.

## CONCLUSION

The laparoscopic approach provides the advantages of early recovery, shorter hospital stay, good cosmesis and less propensity of adhesion formation. In addition to being diagnostic, it can also be used for aspiration, deroofing, cystectomy and oopherectomy in cases of ovarian cysts. Hence, laparoscopy is an important tool in the armamentarium of management of neonatal ovarian cysts.

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