

**TORSION OF RIGHT OVARIAN DERMOID CYST IN A NEONATE: A CASE REPORT**Dr. Kamal Nain Rattan<sup>\*1</sup>, Dr. Rishabh Batra<sup>2</sup>, Dr. Omkar Manik Baridabad<sup>2</sup> and Dr. Deepali Garg<sup>2</sup><sup>1</sup>Professor and Head, Department of Pediatrics Surgery, Pt. B. D. Sharma PGIMS, Rohtak, India.<sup>2</sup>Junior Resident, Department of Pediatrics, Pt. B. D. Sharma PGIMS, Rohtak, India.**\*Corresponding Author: Dr. Kamal Nain Rattan**

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Article Received on 26/12/2018

Article Revised on 17/01/2019

Article Accepted on 08/02/2019

**ABSTRACT**

Dermoid cysts of the ovary are the most common ovarian masses in children. Due to slow growth rates, a large ovarian dermoid cyst with torsion is rare in neonates. We are reporting a case of giant dermoid cyst of right ovary undergoing torsion in a neonate. The case was successfully managed by surgical exploration and right oophorectomy alongwith the dermoid cyst.

**KEYWORDS:** Dermoid cyst, Large ovarian mass, Torsion, Mature cystic teratoma.**INTRODUCTION**

Ovarian masses are rare and generally benign in children.<sup>[1]</sup> They mostly originate from the germ cell line in children.<sup>[2]</sup> The most common germ cell neoplasm are ovarian teratomas which can be further classified as mature cystic teratomas (dermoid cyst), immature teratomas and monodermal teratomas.

Dermoid cysts can occur at various sites. When present in skin and subcutaneous tissue, the common sites are face, neck or scalp. In addition to the skin, dermoid cysts can be intracranial, intraspinal or perispinal. Apart from these, these can occur in ovaries and omentum as well.

During wide review of literature, we failed to find a very huge dermoid cysts of ovary in neonates undergoing torsion. They tend to have very slow rate of growth (app. 1.8mm per year).<sup>[3]</sup> Large size of the dermoid cyst predisposes to torsion which can occur in approximately 15% of the cases.<sup>[4]</sup>

**CASE REPORT**

A 22 day old neonate presented to our paediatric emergency department with the complaints of excessive crying and abdominal distension. On examination, the child was irritable. The vitals were within normal range. Per abdomen findings included a large palpable abdominal lump approximately 5 x 5cm in size. An ultrasonogram was done which showed a large intra peritoneal cystic lesion containing sediment debris and fluid level in abdomino-pelvic region on right side reaching upto the sub-hepatic space. An urgent CECT abdomen was done and the study revealed a well defined, intra peritoneal hypo-dense lesion measuring ~ 65 x 65 x 52mm along left lumbar region with mild wall thickening and wall calcification along medial aspect

with dependant debris and fluid levels-likely suggestive of ?Mesenteric cyst ??Duplication cyst ???Dermoid cyst of the ovary.



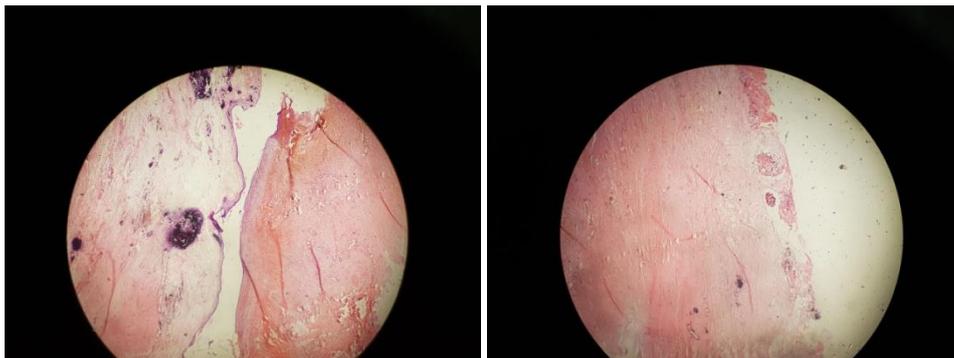
**Fig. 1: CECT Abdomen image showing a large well defined, intra peritoneal hypo-dense lesion along left lumbar region.**

After routine investigations which were within normal limits, the patient was taken up for surgery. Under general anesthesia, the abdomen was opened through right supra-umbilical transverse incision. A huge hemorrhagic cyst 8x8cm arising from right ovary was noted. Right oophorectomy alongwith the cystic haemorrhagic mass was done after ligation and division of the pedicle. Left ovary and uterus were normal. Abdomen was closed in layers.



**Fig. 2:** Excised specimen showing gangrenous dermoid cyst alongwith ovary.

The excised specimen was sent for histopathological examination which revealed a unilocular cyst containing hemorrhagic material and a solid area measuring approximately 2cm in size. Microsections showed infarction and hemorrhage in the wall of the cyst with areas of calcification. Wall was lined by cuboidal and stratified squamous epithelium confirming the diagnosis of torsed and infarcted right ovarian dermoid cyst.



**Fig. 3:** Microscopic picture showing infarction and hemorrhage in the wall of the cyst with areas of calcification. Wall is lined by cuboidal and stratified squamous epithelium.

The patient was discharged after 7 days. On follow up, the patient is well.

#### DISCUSSION

Ovarian teratomas are the most common neoplasm of germ cell origin. They may have mature or immature tissues of germ cell (pluripotential) origin. Of these tumors, the most common are dermoid cysts (also known as mature cystic teratoma) which characteristically contain mature tissues. These originate from at least two of the three germ layers (ectoderm, mesoderm and endoderm). They are most common in the reproductive age group.<sup>[5]</sup> However, from infancy to not infrequent appearances in postmenopausal women; their age distribution is quite broad, unlike other ovarian germ cell tumors.

Most of the mature cystic teratomas are asymptomatic. In minority of patients, abdominal pain or other nonspecific symptoms occur. Torsion of a large ovarian dermoid cyst is the most common complication. Peterson et al reported its occurrence in approximately 16% of cases.<sup>[6]</sup> Thus in any pediatric female patient presenting with abdominal pain or a pelvic or abdominal mass, it should be considered as a differential diagnosis. Torsion often leads to blockage of venous drainage but arterial perfusion continues which results in enlargement of the ovary and subsequent necrosis, infarction, and local

hemorrhage. This may further lead to peritonitis and in some cases systemic infection and inflammation and may prove to be fatal. Havlik et al reported a case of torsion of uterine adnexa in a 2 month old infant who died suddenly. At autopsy, the right ovary and right fallopian tube were twisted and were dark purple, swollen, and necrotic.<sup>[7]</sup> It is, therefore, essential to diagnose and treat ovarian masses as early as possible as delay may have catastrophic consequences. So, the use of emergency ultrasound and other imaging modalities is warranted. However, for a definitive diagnosis to be made, only surgery, most often via laparoscopy is advisable.<sup>[8]</sup>

Most mature cystic teratomas can be diagnosed on ultrasonography. However, as these tumors have varied appearances, the diagnosis may sometimes be difficult. Most commonly, it appears as a cystic lesion with a densely echogenic tubercle (Rokitansky nodule) projecting into the cyst lumen. Other than that, it may also appear as a diffusely or partially echogenic mass with the echogenic area usually demonstrating sound attenuation owing to sebaceous material and hair within the cyst cavity. Another appearance may be of multiple thin, echogenic bands caused by hair in the cyst cavity. Thus, the ultrasound appearance of cystic teratomas may be varied. However, the diagnosis of mature cystic teratoma at computed tomography and magnetic

resonance imaging is fairly straightforward because these modalities are more sensitive for fat.<sup>[9]</sup>

When torsion occurs in mature cystic teratomas they become larger than average in size (mean diameter, 11 cm versus 6 cm), uterus gets deviated to the twisted side and the blood vessels of twisted side engorge (9). Khalil et al in their study reported that the most common findings in ovarian torsion on ultrasound and MRI were edematous enlarged ovary with peripherally displaced follicles and pelvic collection. Other common MRI features included abnormal poor ovarian enhancement, tube thickening and twisted pedicle which had different patterns increasing the reliability of ovarian torsion diagnosis.<sup>[10]</sup>

Emergency open surgical management or laparoscopic management is must in a case of torsion of the ovary. If performed promptly, the viable ovary can even be salvaged by simply untwisting the pedicle. A conservative surgery as ovarian cystectomy can also be done in case no extensive tissue infarction has already happened as a result of torsion.<sup>[11]</sup> However, in our case, oophorectomy was the only possible line of treatment because there was no grossly visible healthy tissue left as a result of extensive hemorrhage and infarction of the adnexa.

## CONCLUSION

A large neonatal ovarian dermoid cyst although rare should be kept as one of the possibilities in cystic ovarian masses. These should be managed early so as to prevent the complications such as torsion, rupture and haemorrhage so as to reduce the morbidity and mortality.

## REFERENCES

1. Brown MF, Hebra A, McGeehin K, Ross AJ. Ovarian masses in children: A review of 91 cases of malignant and benign masses. *J Pediatr Surg*, Jul, 1993; 28: 930–2.
2. Skinner MA, Schlatter MG, Heifetz SA, Grosfeld JL. Ovarian neoplasms in children. *Arch Surg Chic Ill* 1960. Aug, 1993; 128: 849-54.
3. Caspi B, Appelman Z, Rabinerson D, Zalel Y, Tulandi T, Shoham Z. The growth pattern of ovarian dermoid cysts: a prospective study in premenopausal and postmenopausal women. *Fertil Steril*, Sep, 1997; 68: 501–5.
4. Watson A, Winter T. Torsed Ovarian Dermoid. *Ultrasound Q*, Mar, 2017; 33: 66–8.
5. Salem S, Wilson S. Gynecologic Ultrasound. In: Rumack C, SR W, Charboneau J, eds. *Diagnostic Ultrasound*. 1. St Louis, MO: Elsevier Mosby, 2005; 2080.
6. Peterson WF, Prevost EC, Edmunds FT, et al. Benign cystic teratomas of the ovary; a clinico-statistical study of 1,007 cases with a review of the literature. *Am J Obstet Gynecol*, 1955; 70: 368–82.
7. Havlik DM, Nolte KB. Sudden death in an infant resulting from torsion of the uterine adnexa. *Am J Forensic Med Pathol*, Sep, 2002; 23: 289–91.
8. Rousseau V, Massicot R, Darwish AA, et al: Emergency management and conservative surgery of ovarian torsion in children: a report of 40 cases. *J Pediatr Adolesc Gynecol*, 2008; 21: 201–06.
9. radiographics.21.2.pdf [Internet]. [cited 2017 Sep 8]. Available from: <http://pubs.rsna.org/doi/pdf/10.1148/radiographics.21.2.g01mr09475>
10. Khalil RM, El-Dieb LR. Sonographic and MRI features of ovarian torsion. *Egypt J RadiolNucl Med.*, Jun, 2016; 47: 621–9.
11. Ding DC, Chen SS. Conservative laparoscopic management of ovarian teratoma torsion in a young woman. *J.Chin. Med. Assoc*, 2005; 68: 37–9.