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Case Series

Ovarian torsion: a case series

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ABSTRACT

Ovarian torsion is a common gynaecological emergency with nonspecific presentation, difficult diagnosis, delay in management leading to organ loss. Current approach is more towards detorsion and organ salvageability. This study was conducted to study the demographic data, clinical presentation, sonographic features, surgical and histopathological features in cases of ovarian torsion.

Keywords: Laparotomy, Haemorrhage, Necrosis, Ovarian torsion, Ovarian cyst, Imaging, Surgery

INTRODUCTION

Ovarian torsion is the 5th most common gynecological emergency. It is defined as a partial or complete rotation of ovarian vascular pedicle causing obstruction to venous outflow and arterial inflow.[1,2] It can affect any age group, but most of these instances occur in females of reproductive age with a cyst or tumor, most common out of which is mature cystic teratoma.[1-4] Due to its diverse imaging properties and unclear symptoms it can be challenging to diagnose, which can result in delay in diagnosis and high rate of misdiagnosis.[5] This is not a life-threatening emergency rather an organ threatening emergency. Risk factors for torsion includes ipsilateral adnexal masses>5cm, pregnancy, ovulation induction agents, PCOS, prior tubal ligation, hypermobility of adnexal structures.[6] It can occur in patient with normal ovaries, particularly in premenarchal girl who have long infundibulopelvic ligament.[7] Torsion will lead to venous outflow obstruction, leading to edema, congestion, inflammatory reaction, obstruction of arterial inflow and necrosis of ovary. Clinically patient present with sudden onset of abdominal and pelvic pain followed by nausea and vomiting due to peritoneal irritability. Fever generalized abdominal tenderness, tender mass in adnexa, guarding, rebound tenderness are found on examination. Initial imaging modality of choice is ultrasonography. Color doppler should be done to check the blood flow and viability of ovarian tissue. Despite imaging surgery is the gold standard for identification and treatment of ovarian torsion. Laparotomy and laparoscopy are both the surgical methods that can be utilized to perform the desired treatment.

Conventionally twisted ovary and adnexa are excised completely. Now a days adnexa preservation surgeries emerged as new alternatives. Conservative surgeries like detorsion, cyst aspiration and ovariopexy are preferred to preserve adnexa.

CASE SERIES

This was a retrospective study conducted in the Department of Obstetrics and Gynecology, of St. Stephen's Hospital, Delhi a tertiary care center from January 2022 to January 2023. In this study a total of 9 subjects who were diagnosed as adnexal/ovarian torsion surgically, who were retrospectively analyzed by utilizing medical records. Subjects were evaluated in terms of demographic data, clinicopathological features, sonographic and surgical outcomes. Both the clinical and radiological assessment were performed on patients

presented to emergency room as sudden acute abdominal pain and histopathology report were assessed after surgery.

Our study included 9 patients who came with complaint of pain abdomen as primary complaint and associated nausea vomiting in more than 70% cases. Most of the cases belonged to the reproductive age group. Only 2 were premenarchal age and 1 of them belonged to postmenopausal age. Median age was 25 years.

Mean size of cyst was 8.6 cm and all these patients underwent surgery. In only one patient ovary preservation was possible. Rest 8 patients underwent oophorectomy. The findings of all the patients are summarized in table 1.

Table 1: Relative risk of abnormal doppler indices with adverse perinatal outcome.

S.no.	Age (in years)	Parity	Symptoms				USG ((cyst size)	Tenderness
			Pain	Nausea	Vomit	Fever	Tenderness	
1	4	Nulli	+	+	+	+	+7 cm	Simple cyst features of ovarian torsion with extensive haemorrahage
2	15	Nulli	+	-	-	-	+7 cm	Simple cyst with features of torsion
3	16	Nulli	+	-	-	-	+10 cm	Complex cyst with torsion
4	22	Nulli	+	+	+	-	+8 cm	Right ovarian simple cyst with congestion c haemprrahage
5	25	Nulli	+	+`	+	-	+11 cm	Serous cystadenoma right ovarian torsion with necrosis
6	26	Nulli	+	+	-	-	+10 cm	Benign cystic teratoma
7	33	Multi	+	+	+	-	-5 cm	Serous cystadenoma with features of torsion
8	38	Multi	+	+	+	-	+7 cm	Right serous with cysadenoma
9	50	Multi	+	+	+	-	+13 cm	Poorly differentiated carcinoma

Table 2: Distribution of patient based on type of surgery.

Type of surgery	Number of patients	%
Laparotomy	6	66.66
Laparoscopy	3	33.33

Table 3: Distribution of patient based on histological outcome.

Histopathology report	Number of patients	%
Simple cyst	3	33
Complex cyst	1	12
Serous cystadenoma	3	33
Mature cystic teratoma	1	12
Carcinoma	1	12

Out of the 9 patients, 6 underwent laparotomy (66.6%) and 3 underwent laparoscopy (33.3%). On histopathology examination 3 were simple cyst (33%), 3 were serous cystadenoma (33%), one complex cyst, 1 mature cystic teratoma and 1 carcinoma (12% each).

DISCUSSION

From the above study, it was obvious that ovarian torsion although more common in reproductive age can occur in female of any age group. 2 out of 9 (22.2%) patients in our study were from premenarchal age group age and 1 out of 9 was postmenopausal female and 6 out of 9 were in reproductive age group. Median age in our study was 25 years which was comparable to Verma at al study (median age-24 years).[8] and Gupta et al study median age 26 years.[9] 6 out of 9 were nulliparous (66%) which was in contrast to Cherukuru Raja Nandini et al study in which 25% were nulliparous.[10] All of our patient were diagnosed torsion by pelvic ultrasonography, which is the first line investigation for torsion. In most of the patients, the ultrasound findings showed abnormally enlarged ovaries with or without cyst and abnormal blood flow mostly echogenic structure with or without vascularity. In our study almost 100% patient presented with abdominal pain. 7 out of 9 (77%) had

nausea and vomiting. Only one out of 9 had fever. Similar symptoms were seen in Verma et al study and Balci et al study, were 100% patients presented with pain and around 70% with nausea and vomiting. These symptoms are also seen in appendicitis, pelvic abscess, ectopic pregnancy, pelvic inflammatory disease which makes the diagnosis of torsion difficult.

Majority of our patient were having a large cyst of more than 5 cm. Mean size of cyst was 8.6 cm which was comparable to Verma et al study. One patient had recurrent ovarian torsion on other side. All underwent surgery. 3 out of 9 laparoscopically (33%) and 6 underwent laparotomy (66%). In Verma et al study all were managed by laparotomy and in Cherukuru R et al study 56% patient underwent laparotomy and 43.75% underwent laparoscopy.[9]

In only 1 patient we were able to salvage ovary rest all patients had oophorectomy done due gangrene. When we investigated the reason for gangrene, we found that the main cause was late presentation. Symptoms mimicking other conditions resulted in delay in diagnosis and subsequent management.

Histopathologically 33% cases were serous cystadenoma and 33% were simple cyst with size>5 cm. Mucinous cystadenoma, complex cyst, and carcinoma 12% each, were in contrast with Verma et al study where dermoid cyst was the commonest finding (33%).[8] The limitations of the study were that the number of cases were less as we took only one year period. As it was a retrospective study, patient follow up was not done.

CONCLUSION

A definitive diagnosis of ovarian torsion based on clinical symptoms is very difficult. Primary symptoms are pain in abdomen with associated nausea and vomiting in majority of cases. Preexisting cyst is a major risk factor. Pelvic ultrasonography with colour doppler in suspected cases should be done as early as possible. Because delay in diagnosis and treatment will lead to ischemic injury, gangrene to ovary and organ loss. Surgical treatment is best for both confirming the diagnosis and early management. Now a days laparoscopic treatment is preferred with detorsion and ovariopexy as compared to conventional laparotomy and oophorectomy. Hence prompt action should be taken instead of conservative management.

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