

Clinico-Pathological Profile of Adnexal Torsion Cases: A Retrospective Analysis from A Tertiary Care Teaching Hospital

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ABSTRACT

Introduction: Torsion of the adnexa is a rare condition which can be potentially lethal for the women. The clinical presentation can be varied and can be seen in any age group. Understanding the clinical and pathological profile of patients suffering from adnexal torsion can guide the clinicians in diagnosing and managing the condition.

Objective: To analyze the clinical and pathological profile of adnexal torsion cases in a tertiary care teaching hospital.

Materials and Methods: The study was a retrospective analysis of hospital records. It included all cases of adnexal torsion that underwent laprotomy between January 2007 to December 2012 in a tertiary care teaching hospital. The study was approved by the Institute's human Ethics Committee.

Results: A total of 18 patients were included in the study. Majority (66.7%) of participants were in the reproductive age group. Abdominal pain was the most common symptom seen in 77.8% of patients. The other symptoms were abdominal distension,

back ache and dysuria. Majority of the women belonged to Para 2 (44.4%) and Para 3 (27.8%). The proportion of women with one and two LSCS was 11.1% and 16.7% respectively. Tenderness (38.9%), mass (22.2%) were the common per abdomen findings. Per speculum findings were normal in majority (88.9%) of the participants. About 39.2% of the patients presented with a mass in either fornices or pouch of Douglas on pervaginal examination. The side of lesion was only on right in 9 (50%), only left in 7 (38.9%) and both sides in 2 (11.1%) of cases. On histopathological examination, of the lesions there were mucinous cystadenoma (33.3%) serous cystadenoma (16.7%) and benign cystic teratoma (16.7%) as most common lesions.

Conclusion: Adnexal torsion, though a rare clinical condition can present as an emergency most of the times. High index of suspicion is required for diagnosis, as the clinical presentation can be varied. But the diagnosis can be made certain only on the operating table, either by laparoscopy. Avoiding a delay in operating upon the patient will help prevent complications, and aid in conserving the ovary.

Keywords: Adnexa uteri, Laparotomy, Torsion

INTRODUCTION

Torsion of the adnexa is a rare condition which can be potentially lethal for the women. It can be seen in any age group [1], from pre-teens, to women well into their menopause. Adnexal torsion is mostly unilateral, bilateral torsion being extremely rare. Adnexal pathology like ovarian cyst or tubal enlargements like hydrosalpinx, predispose to torsion [2,3]. The clinical presentation varies depending upon the type of torsion whether partial or complete. Complete torsion produces acute symptoms like severe abdominal pain, nausea and vomiting [4]. The symptoms usually coincide with some physical exertion by the woman like hard physical work, lifting, straining or sexual intercourse. A high index of suspicion is required when women present with these type of symptoms.

Pelvic ultrasound with colour doppler is the mainstay in the diagnosis of torsion, with an ultrasound finding of adnexal enlargement and the appropriate clinical features. Other differential diagnosis that have to be considered include appendicitis, gastroenteritis, pelvic inflammatory disease or ruptured corpus luteum. In most centers

Age group	Frequency	Percent
Below 45	12	66.7
46 to 60	4	22.2
Above 60	2	11.1
Total	18	100.0

[Table/Fig-1]: Age distribution of study participants

laparotomy is performed on women presenting with symptoms of acute abdomen and adnexal torsion. Laparoscopy is an alternative procedure that may be done, but it requires surgical expertise in operative laparoscopy and availability of instruments and trained support staff. Understanding the clinical and pathological profile of patients suffering from adnexal torsion can help the clinicians in better diagnosis and management of this condition.

Objective: To analyze the clinical and pathological profile of adnexal torsion cases in a tertiary care teaching hospital.

MATERIALS AND METHODS

Study design: A Retrospective analysis of hospital records.

Study setting: A tertiary care teaching hospital located in sub urban metropolitan area of Chennai, Tamil Nadu, India.

Sampling of study population: All cases of adnexal torsion which underwent laparotomy between January 2007 to December 2012 were included in the study. No specific sampling method was followed.

Ethical approval: The study was approved by the Institute Ethics Committee, Chettinad Hospital and Research Institute. Informed consent was obtained from all the participants for laparotomy at the time of surgery as part of the institute's protocol. Confidentiality of the study subjects was maintained.

Statistical analysis: Detailed descriptive analysis of socio demographic, clinical and pathological parameters of the adnexal torsion cases was done. Mean, standard deviation, percentages

Symptoms	Frequency	Percent
Abdominal pain	8	44.4
Abdominal pain with vomiting	5	27.8
Abdominal pain, vomiting & fever	1	5.6
Abdominal distension	1	5.6
Back ache	1	5.6
Dysuria	1	5.6
Pain & distension	1	5.6
Total	18	100.0

[Table/Fig-2]: Clinical presentation of adnexal torsion cases (n=18)

Parity	Frequency	Percent
0	2	11.1
1	2	11.1
2	8	44.4
3	5	27.8
6	1	5.6
Total	18	100.0

[Table/Fig-3]: Parity of adnexal torsion cases (n=18)

Number of LSCS	Number	Percentage
0	13	72.2
1	2	11.1
2	3	16.7

[Table/Fig-4]: Number of LSCS in study participants (N=18)

Parameter	Frequency	Percent
Temperature		
Afebrile	17	94.4
Febrile	1	5.6
Per abdomen		
Mass	4	22.2
Mass & Tenderness	2	11.1
Mass, Tenderness & Guarding	1	5.6
Tenderness	7	38.9
NIL	4	22.2
Per speculum		
Healthy	16	88.9
Vaginal septum	1	5.6
Bleeding	1	5.6

[Table/Fig-5]: Clinical examination findings of study participants

Parameter	Frequency	Percent
Bulky Uterus	2	11.2
Mass in LF	3	16.8
Mass in RF	3	16.8
No Tenderness & No Mass	5	27.8
Tender uterus	3	16.7
Tender & Bulky Uterus	1	5.6
Tenderness & Mass in POD	1	5.6
Total	18	100.0

[Table/Fig-6]: Per vaginal findings in study population

were used appropriately. Microsoft Excel 2007 and IBM SPSS version 21 were used for the statistical analysis.

RESULTS

A total of 18 patients underwent surgery for adnexal torsion during the study period. All the 18 patients were married at the time of

Parameter	Frequency	Percent
I. Side of lesion		
Right	9	50.0
Left	7	38.9
Bilateral	2	11.1
Total	18	100.0
II. Size of lesion (Diameter in cm)		
Less than 5	4	22.2
5 to 10	6	33.3
More than 10	8	44.4
Total	18	100
III. Number of twists		
One	12	66.7
Two	4	22.2
More than 2	2	11.1
Total	18	100

[Table/Fig-7]: Per-operative findings in patients with adnexal torsion (n=18)

Type of lesion	Number	Percentage
Mucinous cystadenoma	6	33.3
Serous cystadenoma	3	16.7
Cystic teratoma	3	16.7
Hydrosalpinx	2	11.2
Simple serous cyst	2	11.2
Corpus luteal cyst	1	5.6
Simple cyst with hemorrhagic infarction	1	5.6

[Table/Fig-8]: Histo pathological examination findings

surgery. Out of the total number of patients, 12 (66.7%) had regular menstrual cycle and 6 (33.3%) had irregular menstrual cycle. The age of the study participants ranged from 25 years to 72 years with the mean age of 39.7 years (mean 39.7, SD 14.3). Out of the 18 patients, 66.7% of them were in the reproductive age group (less than 45 years). The proportion of subjects between 46 to 60 years was 22.2% and 11% of the patients were postmenopausal for more than ten years, being over 60 years [Table/Fig-1].

Out of total 18 patients, 8(44.4%) of them had presented with only abdominal pain, 5 (27.8%) of them presented with abdominal pain and vomiting, 1(5.6%) patient with pain, vomiting and fever and another patient with abdominal pain and distension, thus making abdominal pain with or without other associated complaints the most common presenting symptom. The remaining cases presented with abdominal distension, back ache and dysuria [Table/Fig-2].

Out of total 18 patients, two women (11.1%) were nulliparous, another two women were Para one. Majority of the women belonged to Para two (44.4%) and Para three (27.8%). There was one woman with parity six in the study participants [Table/Fig-3].

Majority of the women in the study (72.2%) had never undergone lower segment cesarean section (LSCS) and 11.1% of them undergone one LSCS and the remaining 16.7% undergone two LSCS [Table/Fig-4].

Almost all the study subjects were afebrile (94.4%) on clinical examination. Per abdomen findings included tenderness (38.9%), Mass (22.2%), Mass and tenderness (11.1%) and mass, tenderness and guarding (5.6%). Per abdominal examination was normal in four (22.2%) of them. Per-speculum findings were normal in majority (88.9%) of the participants, one (5.6%) patient had bleeding per vagina and another patient had a septum on per speculum examination [Table/Fig-5].

The per vaginal findings showed that about about 39.2% of the patients presented with a mass in either fornix or pouch of Douglas.

27.8% of the patients had no mass or tenderness on per vaginal examination. Bulky uterus was found in 11.2% of the subjects [Table/Fig-6].

Only right side was involved in 9(50%) of the patients, only left side was involved in 7(38.9%) of the patients and in the remaining 2 cases (11.1%) both adnexa were involved. Peroperative findings showed that 44.4% of the patients had an adnexal mass of size more than 100mm, while 33.3% of the patients had masses of size between 50mm to 100mm. about 22.2% of them had masses less than 50mm. Most of the cases (66.7%) showed only one twist of the adnexa. About 22.2% of the cases showed two twists of the adnexa and only 11.1% of the cases showed more than two twists [Table/Fig-7].

An analysis of the histopathology of the patients who underwent laparotomy shows that 33.3% of the lesions were mucinous cystadenoma. Serous cystadenoma and benign cystic teratoma were seen in 16.7% cases each. Other lesions encountered were simple serous cyst (11.2%) and corpus luteum cyst (5.6%), Hydrosalpinx was also seen in 11.2% of the cases [Table/Fig-8].

DISCUSSION

The adnexa of the uterus, formed by the ovaries and fallopian tubes is one of the organs in the body that is prone for torsion. The ovary lies in the ovarian fossa attached medially to the uterus by the ovarian ligament and laterally by the infundibulopelvic ligament that holds it in its place. The infundibulopelvic ligament carries the vascular supply of the ovary. It has a wide variation in length. It may be a short ligament in some women and in others it is fairly long. The long Infundibulo pelvic ligament predisposes the ovary to torsion.

Adnexal torsion or primarily ovarian torsion is a relatively rare condition. It ranks fifth among the gynecological related surgical emergency seen in practice [5]. It has a prevalence of 2.7–3.0%, usually underestimated [5-7].

Abdomino-pelvic or pelvic ultrasound is the primary diagnostic modality that aids in the diagnosis. Adnexal torsion remains as one of the most challenging conditions to diagnose pre-operatively [8]. The presence of lower abdominal pain and symptoms like nausea and vomiting, in association with an ovarian enlargement (solid, cystic or complex) usually implies torsion. The use of Doppler ultrasound also helps in the diagnosis to a great extent. Shadinger et al., [9] in a retrospective study of 39 adnexal torsion cases found a positive predictive value of 94% for the doppler finding of absent venous flow. The sonographic findings which may predict adnexal torsion are visualisation of a cystic, solid or complex mass at the location of the adnexal, cranial to the uterine fundus, thickening of the adnexal wall, unilateral ovarian enlargement, peripherally enlarged follicles, cystic hemorrhage and free pelvic fluid. The location of the torsed ovary is mediosuperior to its original location [10]. In many cases, it has been noted that in torsion adnexa, when the ovary is enlarged, the neoplasm has been found to be benign [3,5-8,11-12].

Torsion of the adnexa is seen in adolescent girls and parous women in reproductive group. In a study by Murat Ekin et al., [13] most of their patients were in their early reproductive age group and hence detorsion was attempted in more than fifty percent of their cases. The early diagnosis of this condition, especially in young women, can help save the ovary from extirpation. In our study we have done an analysis of the clinical and pathological profile of the patients who had undergone laparotomy for an acute abdomen. We found most of our women being in, either their reproductive age group having completed their family or in their peri-menopausal and post-menopausal age groups.

Most of our patients were parous. Forty-five percent of them were para 2 and 28% were para 3. There was just 5 % nulligravida. A study by Gerome Descargues et al., [12] showed a higher rate of nulliparity of 42%. This is due to the fact that most women in India have an earlier age at marriage and reluctantly accept family planning.

Analysis of our patients records showed that abdominal pain was the predominant presenting symptom with nearly 90% of the patients exhibiting it. In a study by Ming Chen et al., [14] they found that in an analysis of 69 cases of adnexal torsion, all of them presented with abdominal pain during presentation. In a study by Brooke Rossi et al., [15] done on the Pediatric and adolescent population nearly 91% of the patients presented with acute abdominal pain.

The site of the pathology was found to be on the right side in 58% of our cases. It is in line with reports from the literature review which show a right sided predilection [5,14,16]. In the study by Brooke Rossi et al (sample size 83) there was 64% right Adnexal torsion and only 36% percent had left sided torsion. There was no bilateral adnexal torsion in their series [15]. In our series there was a 11% incidence of bilateral Adnexal torsion.

Ninety five percent of our patients were afebrile at the time of admission. Only five percent of the patients (n=1) was febrile at the time of admission. Review of literature reveals that fever at the time of presentation is a pointer to extensive ovarian necrosis [17] Examination of the patients preoperatively showed an Adnexal mass in either of the fornices in 88% of the cases. The sizes of the mass on examination ranged from 5cms up to around 20 cms. In his study Ming Chen et al., [14] has shown sizes ranging from 4cms to 14cms.

Our study has shown that the majority of the patients had just one twist at the pedicle at the time of surgery. The range of the twists were from one to a maximum of four turns. Most of the literature shows a 1 to 2 spiral turns [12]. The more the number of turns the adnexa undergoes, poorer is the possibility of salvaging the adnexa.

The histopathologic correlation of the cases showed that 33.3 % of the patients had benign mucinous cystadenoma, 16.7% had serous cystadenoma and 16.7% cystic teratoma. Our study also showed 11 % of the lesions were hydrosalpinx. In a study by Philippe Galinier et al., [18] performed on pre pubertal and adolescent girls it was found that cystic teratoma was the predominant pathology comprising about seven cases out of 19.

CONCLUSION

Adnexal torsion, though a rare clinical condition can present as an emergency most of the times. History and clinical examination can provide adequate information to make the right diagnosis. But the diagnosis can be made certain only on the operating table, either by laparoscopy or laparotomy. In our series of 18 cases all the ovaries were diseased and also found in patients who were parous, nearing menopause or post menopausal, hence extirpation was done in all cases. Six patients also underwent a total abdominal hysterectomy with salpingo oophorectomy in addition to removal of the adnexa that had undergone torsion. Avoiding a delay in operating upon the patient will help prevent complications, and aid in conserving the ovary.

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