

# A Clinicopathological Study of Women with Adnexal Masses Presenting with Acute Symptoms

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## Abstract

**Background:** Abdominal pain is one of the most common presentations of adnexal pathology in gynecology. Early diagnosis and intervention is essential especially in adolescent girls and reproductive age group women to conserve reproductive function. **Aim:** The purpose of the following study is to assess the clinicopathologic outcome of women with adnexal masses presenting with acute pain. **Subjects and Methods:** A retrospective study of women with adnexal masses who had surgical intervention for acute symptoms from June 2007 to May 2012 was undertaken. During the study period, a total of 57 women were operated for adnexal masses as emergency, the most common pathology was teratoma 26% (15/57) followed by corpus luteal hemorrhage (16%) and endometriosis (14%). Laparoscopy was the initial surgical approach in just over 50% of patients, but surgery was completed laparoscopically only in about one-third of patients. Conservative surgery in the form of ovarian cystectomy was possible in 70% of patients. **Conclusion:** Complications of adnexal masses such as torsion and hemorrhage are common causes of acute abdominal pain. Timely diagnosis of the adnexal pathology and surgical intervention will help to preserve the reproductive outcome. Conservative surgery was possible in 70% of our study group.

**Keywords:** Acute, Adnexal mass, Benign, Histology, Symptoms

## Introduction

An adnexal mass (mass of the ovary, fallopian tube, or surrounding connective tissues) is a common gynecologic problem. Acute surgical emergencies of gynecological origin occur in women of reproductive age group and sometimes in adolescents. Early diagnosis and intervention is essential especially in adolescent girls to conserve the ovarian function. Pregnancy related conditions like ectopic pregnancy and miscarriages are diagnosed easily with a positive pregnancy test and necessary action taken. The causes of acute pain can also be due to rupture of ovarian cyst, torsion of adnexa with or without a tumor, hemorrhage into a cyst, acute pelvic infections and non-gynecological as well. Malignancy has to be kept in mind in perimenopausal and menopausal women. Clinical

diagnosis is based on symptoms like reverse renal colic and palpable mass but it can be challenging if there is torsion of normal adnexa and when pelvic examination is not possible in unmarried women. Cystectomy should be considered in young women whereas hysterectomy with the removal of the adnexa is possible in perimenopausal and postmenopausal women.<sup>[1]</sup> Ultrasound is the most common initial approach for diagnosis of adnexal mass with Doppler flow to rule out torsion. Computerized tomogram (CT) may not be always available in emergency or may be contraindicated due to pregnancy to make an optimal diagnosis and plan the type of surgery. There are many reports on the role of various imaging modalities like ultrasound, CT and magnetic resonance imaging in the diagnoses and management of acute adnexal pathologies like torsion, hemorrhage, cyst rupture etc., but clinicopathological studies are few.<sup>[2]</sup> This retrospective study was undertaken to study the clinicopathological aspects of adnexal masses presenting with acute symptoms.

## Subjects and Methods

This is a retrospective study of women surgically managed for adnexal pathologies who presented with acute symptoms, from June 2007 to May 2012. Information on age, parity, presenting

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symptoms, clinical and imaging (mainly ultrasound of the pelvis and abdomen) diagnosis, mode of surgical approach and histology was collected from the electronic patient records. CA 125 was the main tumor marker sent apart from  $\beta$  human chorionic gonadotropin in reproductive age group women. Serum alpha fetoprotein (AFP) and lactate dehydrogenase (LDH) was also done in women with suspected dermoids. Since this was descriptive study information is presented in tables. No statistical tests were done. The study was approved by the Institutional ethics committee.

## Results

The mean age of the patients was  $29.1 \pm 9.5$  and the median age was 28 years. Mature teratoma was the most common tumor followed by bleeding corpus luteum [Table 1]. Abdominal pain was the most common symptom followed by nausea and vomiting [Table 2]. The mean size of the tumor was  $8.5 \text{ cm} \pm 4.2 \text{ cm}$ . More than 50% were nulliparous women [Table 3]. CA 125 was elevated in 26%-15/57 women (including endometriosis, serous cystadenoma, mucinous cysts and hemorrhagic corpus luteum). Serum AFP and LDH were done in about 23% patients and all were normal.

**Table 1: Main histological diagnosis of the adnexal masses**

Histology	Frequency (%)
Mature teratoma	26 (15/57)
Ruptured corpus luteum	16 (9/57)
Endometrioma	14 (8/57)
Serous cyst	12 (7/57)
Follicular cyst	7 (5/57)
Malignant/borderline tumor	9 (5/57)
Others	16 (9/57)

**Table 2: Presenting symptoms and associations (more than one symptom may be present in a patient)**

Symptoms	Frequency (%)
Abdominal pain	98
Nausea	30
Vomiting	16
Vaginal spotting	5
Menstrual irregularities	8
Von Willebrand's disease	4
Sickle cell disease	4

**Table 3: Distribution of parity among the study group**

Parity	Frequency (%)
Unmarried (not sexually active)	33
Nulliparous	18
Para 1-2	19
Para 3-5	16
Parity >5	9
Pregnant	9

Laparoscopy was the initial approach in 30 of 57 patients but the procedure was completed laparoscopically in only 18 of them. The main reason for laparotomy in most patients was the size of the tumor more than 10 cm, suspicion of malignancy in three patients and unstable clinical condition of the patient in others.

Conservative surgery in the form of ovarian cystectomy was possible in 70% of patients. Salpingo oophorectomy was necessary in 24% patients due to necrosis of the tumor or large size of the tumor with the tube stretched over it. Three patients had hysterectomy with salpingo oophorectomy for suspected malignancy of which two were 50 years old and one was 60 year old. More than 50% of patients had no children; either nulliparous or not sexually active [Table 3]. Adnexal torsion was confirmed in eight patients intra-operatively, of which four had adnexectomy with impression of necrosis and pathological evaluation confirmed partial necrosis in all four of them. The histology of the tumor type according to age is presented in Table 4.

## Discussion

A retrospective study of women with pain due to adnexal masses excluding pregnancy related problems like ectopic pregnancy was undertaken in our hospital. The demographic features were comparable to Koo *et al.* in 2011.<sup>[3]</sup>

Women with adnexal masses can present with acute symptoms such as abdominal pain, nausea, vomiting etc., The common symptoms in our study were pain and nausea and this was similar to other studies.<sup>[4,5]</sup> There are a few studies on adnexal torsion and laparoscopic management of adnexal torsion in pregnancy<sup>[3,5]</sup> and without pregnancy as well.<sup>[6]</sup> Most of the studies reported mature teratoma as the most common tumor as in our study.

Conservative surgery was possible in 70% patients and that was necessary as just over 50% of our patients were either unmarried (not sexually active) or nulliparous and 19% were of low parity, given the mean family size is five in our country. Laparoscopy as an emergency approach to complete the procedure was possible only in about a third, either due to the acute clinical presentation or lack of instruments during out of hours. Mass size seemed to determine the success of laparoscopic approach in our study. Ultrasound was the first imaging of choice though CT was done after the ultrasound in 20% of the patients. Corpus luteal bleeding was the second most common adnexal pathology and an early decision to intervene helped to conserve the ovary. The prevalence of malignancy/borderline tumor was comparable to the report by Balci *et al.* The intra-operative diagnosis of adnexal necrosis upon failure of reperfusion correlates well with the pathological diagnosis similar to other studies.<sup>[7,8]</sup> Current recommendation is to perform conservative surgery for

**Table 4: Age distribution and histopathology types**

Age group	Teratoma	Follicular/luteal	Hemorrhagic corpus luteum	Endometriosis	Serous and mucinous cystadenoma	Others
11-19	1	1	3	1	1	-
20-40	13	4	7	7	9	3
>40	-	1	-	-	4	2

ovarian torsion even if the reperfusion is only partial after detorsion intra-operatively.<sup>[1]</sup>

## Conclusion

The commonest pathology in acute abdominal presentations secondary to adnexal masses not related to pregnancy was mature cystic teratoma of the ovary in the current study and conservative surgery (ovarian cystectomy) was possible in 70% of women.

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