

# Pregnancy and adnexal torsion: analysis of 20 cases

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## Summary

**Objective:** To study the clinical profile, management and outcome of pregnancy complicated by adnexal torsion. **Methods:** All pregnancy cases complicated by adnexal torsion admitted between January 2001 and January 2009 were analyzed. **Results:** The total number of pregnant cases was 20. Age range of pregnant women with adnexal torsion was 18 to 42 years. Of these cases 70% were seen in the first and second trimester. Seventy percent of cases were operated by the laparotomy route and 30% by laparoscopy. Salpingo-oophorectomy was performed in 70% of cases and detorsion in 30% of cases. Histopathologic examinations revealed five patients (25%) had serous cystadenoma, four patients (20%) mucinous cystadenoma, six patients (20%) dermoid cyst and five patients (25%) hemorrhagic cyst. **Conclusions:** Adnexal torsion as a differential diagnosis of acute abdomen in pregnancy should be considered and we recommend early surgical treatment that will save the adnexa.

**Key words:**

## Introduction

Adnexal torsion is a serious cause of acute lower abdominal pain in women. It is a relatively uncommon condition, with a prevalence of about 2.7% of gynecologic emergencies, but it often constitutes a challenging diagnostic problem in clinical practice [1]. Adnexal torsion may arise in women of any age, but particularly during the reproductive years. Adnexal torsion is rarely observed during pregnancy. Its incidence is approximately 1: 5,000 pregnancies, occurring more frequently in the first trimester after ovarian stimulation for in vitro fertilization (IVF) [2]. The clinical symptoms are non-specific and could be confused with other acute abdominal conditions, such as acute appendicitis, renal colic, and cholecystitis. Traditionally, abdominal complications during pregnancy have been treated by means of laparotomy. Today, laparoscopy is considered the preferable surgical option until approximately the 16<sup>th</sup> week of gestation [3]. A prompt diagnosis is essential for conservative, organ-preserving management, because after 36-48 hours of torsion irreversible lesions of the ovary are likely to occur.

## Material and Methods

This study was conducted at the Department of Gynecology in Dicle University, Diyarbakir. Twenty pregnant patients were evaluated for adnexal torsion between January 2001 and January 2009.

## Results

The total number of pregnant patients with adnexal torsion was 20. Age ranged between 18 and 42 years with a mean of 29.05 ( $\pm$  6.07) years and mean gravidity was 3.7 (1 to 12). Six (30%) of the patients were in the first

trimester, ten (50%) in the second trimester and four (20%) in the third trimester. Mean gestational weeks were 18.5 (10 to 36 weeks). Ten patients (50%) were operated for a diagnosis of acute abdomen, eight patients (40%) were operated for a diagnosis of pelvic mass and two were operated for a diagnosis of intraabdominal hemorrhage. Laparotomy was performed in 17 patients (85%). Three patients (15%) were operated by laparoscopy. Three of 17 patients who underwent laparotomy had cesarean sections performed at the same time.

Salpingo-oophorectomy was performed in 14 cases (70%) and in six cases (30%) cyst extirpation and detorsion were performed. Adnexal masses were torsioned on average three times (1 to 5). Postoperative histopathologic examinations revealed five patients (25%) had serous cystadenoma, four patients (20%) had mucinous cystadenoma, six patients (20%) a dermoid cyst and five patients (25%) a hemorrhagic cyst (Table 1).

Table 1. — Findings of the adnexal masses.

Size	< 6 cm	6-12 cm	> 12 cm	
	6 (30%)	8 (40%)	6 (30%)	
Type	Cystic	Solid	Heterogeneous	
	12 (60%)	4 (20%)	4 (20%)	
Histopathologic examination	Dermoid	Serous cystadenoma	Mucinous cystadenoma	Hemorrhagic cyst
	6 (30%)	5 (25%)	4 (20%)	5 (25%)

Three (15%) of the patients were delivered by cesarean section. The mean gestational week was 35 (33 to 36 weeks), the mean birth weight of the newborns was 2,700 g (2,300 to 2,900 g), mean APGAR score 7.2 (6 to 9) and all the newborns were healthy.

We began oral nifedipine as tocolytic therapy in six of the 17 patients. Fifteen (88.23%) of the patients had a full-term pregnancy and delivered healthy infants, two (11.77%) of the patients did not have a full-term pregnancy and delivered preterm, and additionally these two preterm infants were healthy.

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## Discussion

Adnexal torsion is a rare cause of acute abdominal pain. It accounts for approximately 3% of gynecological emergencies and 10-20% of ovarian torsions occur during pregnancy. Adnexal torsion during pregnancy is a rare condition, more common in the first and early second trimester, and exceptional during the third trimester. In our study, ten (50%) of the cases were in the second trimester, six (30%) in the first trimester and four (20%) in the third trimester. Adnexal torsion is frequently associated with ovarian stimulation treatment for IVF or ovarian masses [4]. The majority of the tumors are functional cysts. In the first trimester of pregnancy these are luteum cysts, which regress spontaneously. This is the reason for delaying excision until the second trimester. Lesions surgically excised in the second trimester include persistent corpus luteum cysts (20%), cystadenomas (24%), dermoids (37%), paraovarian cysts (5%), endometriomas (5%) and leiomyomas (5%) [5]. Malignant tumors are found in 5.9% of the cases [6]. Cystadenomas (45%), dermoid (30%) and hemorrhagic cysts (25%) were detected in our study but endometriomas, leiomyomas and malignant tumors were not detected.

Hasiakos *et al.* reported four cases with adnexal torsion during pregnancy and all of their cases were in the first trimester and operated by laparoscopy [7]. Fourteen of our cases were in the second and third trimester, thus we performed laparotomy in 17 cases and laparoscopy in three.

The preoperative diagnosis is difficult, especially in pregnant women. Torsion of the ovarian pedicle results in circulatory stasis that is initially venous, but becomes arterial as the torsion and the resultant edema progress. When complete torsion with hemorrhagic necrosis is suspected, immediate surgery is necessary. If there is a delay in the diagnosis and the torsion persists for more than 36-48 hours the lesions of the ovary are irreversible and a conservative, organ-preserving approach is not possible. However, it has been described that viable ovarian tissue can be detected even after 48 hours of torsion [8]. We performed salpingo-oophorectomy in 14 cases and cyst extirpation and detorsion in six cases.

## Conclusion

Adnexal torsion is a rare event during pregnancy which requires a differential diagnosis from other diseases presenting with abdominal pain. It necessitates prompt surgical intervention because any delay leads to irreversible ovarian necrosis, so that salpingo-oophorectomy is ultimately necessary.

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