

# Annex Torsion and Pregnancy: About Two Cases

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## Abstract

Annex torsion is a true surgical emergency, it is a rare pathology, secondary to the total or partial rotation of the appendix around its vascular axis, which can lead to hemorrhagic necrosis of the ovary. Its frequency is estimated at 1/5 000 pregnancies. It can occur during the entire pregnancy, although the increase in the size of the uterus in the 2nd-3rd trimester reduces the mobility of the appendix. Its clinical signs are usually acute and sudden pain, nausea and vomiting secondary to peritoneal irritation and the existence of an adnexal mass. Ultrasound is the paraclinical reference examination, it allows to visualize an annexial pathology that can be at the origin of the torsion and look for the indirect signs of ischemia. The treatment of appendix torsions during pregnancy can be done by laparoscopy, while respecting the safety instructions in relation to the pregnant uterus, laparotomy remains the most evaluated surgical technique. The treatment must be conservative if the recovery of the appendage after untwisting allows it. Only an ipsilateral recurrence can make discuss prevention by an annexed pexy.

**Keywords:** appendix torsion, pregnancy, annexectomy, ovariopexia.

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## INTRODUCTION

Annex torsion is a diagnostic and therapeutic emergency that occupies the 5th rank of gynecological emergencies [1], it is secondary to the total or partial rotation of the appendix around its axis causing a vascular obstacle responsible for ischemic lesions of the trunk or ovary. Its occurrence during pregnancy is a rare situation whose frequency is estimated at 1/5 000 pregnancies [2, 3].

We report on this work two cases of twisting of appendix occurring during the second trimester of pregnancy and we discuss, in light of the data of the literature, the different clinical, radiological and therapeutic aspects of this pathology.

## OBSERVATION 1

It is a 26-year-old primigest, with no particular pathological antecedents, consulted at the emergency room of the military hospital for lateralized pelvic pain on the right of brutal installation and associated with nausea and vomiting.

The clinical examination found a patient in good general condition, normotensive, apyretic, with normally colored conjunctiva, a supple abdomen with a slight defense at the level of the right iliac fossa, a neck of gravid aspect with speculum and vaginal touch a

increased uterus reaching two fingers across below the umbilicus with right lateralized pain without a papillary latero-uterine mass.

The ultrasound performed shows a progressive pregnancy of 18 AS, a left ovary normal size 37 / 21mm but a right ovary voluminous 76 / 40mm seat of a stromal thickening with vascularized peripheral follicles, and the presence in para-ovarian right of a formation of 26 mm corresponding to a vascular winding (Fig-1).

The diagnosis of torsion of right annex was then evoked. Urgent laparotomy was indicated for detorsion, and revascularization, translated by ovarian recoloration, was judged to be of good quality, allowing conservative treatment (Fig-2). Immediate operative follow-ups were simple without obstetrical resonance.

## OBSERVATION 2

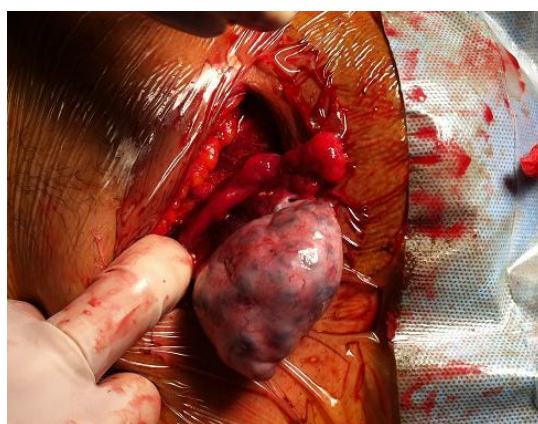
A 33-year-old patient G4P1, having a history of cholecystectomy, admitted to the emergency department for intense right acute pelvic pain with a patient in good general condition at 12/6 mmHg, an abdominal defense and palpation pain of the right flank; uterus increased volume without palpable mass, has 24SA pregnancy ultrasound with suspicion of right appendix torsion. therefore an emergency laparotomy for detorsion and ovarian revascularization, good

recovery of the ovary, the consequences were simple,

and the pregnancy was completed.



**Fig-1: Bulky right ovary 76 / 40mm seat of stromal thickening, with vascularized peripheral follicles, and the presence of a vascular coil**



**Fig-2: Ovarian Revascularization after Straight Annex Detorsion**

## DISCUSSION

During pregnancy, twisting is a rare emergency that occurs between 8 and 28% during pregnancy [4], preferentially in the first trimester but can be diagnosed at any gestational age [4], although the increase in uterine size in the 2nd-3rd trimester reduces the mobility of the appendix. Usually torsion occurs on a pathological ovary: malignant or benign tumor, corpus luteum cyst and some rare cases have also been described following ovarian stimulation [4, 5].

### Clinical Signs

The clinical symptoms are characterized by a sudden pelvic pain in stabbing (98% of cases) associated with nausea and vomiting (78% of cases) secondary to peritoneal irritation, and the existence of an adnexal mass (82% of cases) [2]. Its diagnosis during pregnancy is complicated because it requires the elimination of traditional differential diagnoses but also those that may be related to pregnancy (miscarriage, preterm birth, pregnancy vomiting). In addition, both clinical and radiological examination become more difficult because of the uterine volume and the concomitant ascension of the ovary into the abdominal cavity.

Adjunct torsion predominates on the right side (60% of cases) and is favored by benign lesions of the ovary (60-90%), especially dermoid cysts (60%). Twisting on ovary neoplasia is estimated at 2% of cases [6].

### The Radiological Assessment

Ultrasound is the reference examination, it allows to visualize an annexial pathology which can be at the origin of the torsion and look for the indirect signs of ischemia:

- The first interruption of the venous flow leads to a reaction edema which is detectable by the increase of the ovarian volume compared to the contralateral side [7].
- The increase in the number of cortical follicles is a nonspecific aspect but has often been found in the case of healthy ovarian torsion. It is due to fluid transudation secondary to ovarian congestion [7]. This aspect was found in our case (Fig-1).
- Images of hemorrhagic infarction can be visualized late, and an aspecific ascites blade is often associated [8].
- The color Doppler study is very controversial, and it is actually the combination of +/- Doppler ultrasound that leads to diagnosis and leads to laparoscopy [9].

IRM is a satisfactory complementary exploration technique in pregnant women, which has the same interest as ultrasound with greater precision. It can visualize tubal thickening secondary to adnexal torsion [10].

### Surgical Treatment

- The practice of laparotomy during pregnancy to manage adnexal torsion is possible, however, the development of laparoscopic techniques has reduced the indications for laparotomy. In particular, Oelsner *et al.*, compared the follow-up of 197 laparotomies and 192 laparoscopies in 17 centers [11]; Laparoscopy does not increase the risk of spontaneous abortion, premature labor, intrauterine growth retardation or fetal malformation compared to laparotomy. It also presents a significantly lower risk of postoperative complication [11].
- The French National College of Gynecologists and Obstetricians (CNGOF) recommends in these recommendations that laparoscopy be performed up to 17 years, indicating that, even if laparoscopy is feasible, laparotomy remains the most evaluated surgical technique. [12]. But several retrospective series have shown the safety and efficacy of laparoscopy in the 3rd trimester [13, 14].
- The majority of anesthetic drugs can be used during pregnancy because they are not teratogenic.
- All authors recommend insufflation in the left hypochondrium, after placement of a gastric tube for some, by Vèrès-Palmer needle or open laparoscopy [14].
- Pneumoperitoneum should not exceed 12 mmHg and the duration of the intervention should be reasonable because intraperitoneal hyperpressure may be deleterious for fetomaternal exchanges [15]. The change of position of the patient should be adapted case by case, combining the moderate Trendelenburg and the lateral decubitus to facilitate the exposure of the appendix.
- The choice of conservative treatment (adnexal detorsion) or radical treatment (adnexectomy) is the same whether during pregnancy or outside of pregnancy. Mage [16] described three stages of gravity after untwisting:
- Stage 3: contains lesions of necrotic appearance, black, sphacelate, friable, very bulky, with false membranes, without recovery of the appendix 10 minutes after détorsion despite the irrigation of this one with hot physiological saline. This stage deserves an annexectomy.
- Stage 2: involves severe ischemia lesions with a dark red or purple appearance. A total or partial recovery of the normal appearance of the annex 10 minutes after untwisting is observed. This stage allows a conservative treatment (Fig-2)
- Stage 1: does not have an ischemic aspect and the recovery is total after detorsion. For this stage, conservative treatment is the rule.

- It should not be forgotten that the surgical treatment of an ovarian cyst, if it exists, will be done at the same time.

### Prevention

The prevention of a recurrence proceeds initially by the etiological treatment: cystectomy, follicular puncture or annexectomy. In the case of healthy ovaries, the situation is different; from a retrospective study of Pansky *et al.* shows in post-pubertal women a recurrence rate of 67% when the ovary is healthy versus 8% when the ovary is pathological [17]. Bilateral ovariopexy seems to be necessary [17, 18]. However 2 cases of ovarian fixation during pregnancy have been reported in the literature [19], and according to the recommendations of the CNGOF Only an ipsilateral recurrence of torsion can make discuss an annexed pexy.

### The Evolution of Pregnancy

For some authors, pregnancies with torsion of the appendage treated by detorsion evolved without particular gravidic problem [20], whatever the trimester of the pregnancy concerned. For others, there is a significant increase in abortions, intrauterine growth delays and prematurity without any difference between laparotomy and laparoscopy [21].

### CONCLUSION

During pregnancy, the torsion of appendix is a rare emergency, whose symptomatology is nonspecific. Her preoperative diagnosis is difficult, evoked by ultrasound, which remains the para-clinical reference examination.

The torsion treatment can be either conservative, if the state of the appendage after untwisting allows it, or radical.

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