

Case report

## Twisted fallopian tube in pregnancy: a case report

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### Abstract

**Background:** Isolated twisted fallopian tube is an uncommon event, isolated twisted fallopian tube in pregnancy is also very rare. The diagnosis is often difficult and established during the operation. The right fallopian tube is most common affected.

**Case presentation:** We report an uncommon twisted left fallopian tube in pregnancy. A 34-year-old G<sub>3</sub>P<sub>2</sub> 28 weeks pregnant woman presented with acute left lower abdominal pain. The clinical and ultrasonographic findings led to diagnosis of twisted left ovarian cyst. Emergency exploratory laparotomy was performed. A twisted left fallopian tube and paratubal cyst was noted and left salpingectomy was performed. The postoperative course was uneventful and the pregnancy continued until term without complication.

**Conclusions:** Although isolated twisted fallopian tube during pregnancy is very rare, it should be included in the differential diagnosis of acute abdomen in pregnancy. Early surgical intervention will decrease obstetric morbidity and may allow preservation of the fallopian tube.

### Background

Isolated twisting of a fallopian tube is an uncommon event. The incidence from previous reports is 1/1,500,000 women [1]. The diagnosis of isolated twisted fallopian tube in pregnancy is also very rare, only 12% of cases are found during this time [2]. The condition is frequently misdiagnosed as acute appendicitis or ovarian torsion [3–8]. The right fallopian tube is most commonly affected. We report a case of twisted left fallopian tube during pregnancy and review the relevant literature.

### Case presentation

A 34-year-old woman, gravida 3, para 2, presented at 28 weeks gestation complaining of constant left lower abdominal pain with intermittent cramping that had been

radiating to her left flank for 2 days. It happened after changing the position. She also had nausea and vomiting. Her past medical history was significant for chronic hypertension and  $\beta$ -thalassemia trait. Her prenatal course had been unremarkable except for a 5-cm, hypoechoic left ovarian cyst noted incidentally on 18-week ultrasonography. Her past obstetric history was unremarkable with two uncomplicated vaginal deliveries.

On examination, her temperature was 37.2°C and blood pressure was 130/80 mmHg. The uterine size was consistent with gestational age, and fetal heart beat was 160/min. Abdominal examination revealed tenderness at the left paraumbilicus. The admission hematocrit was 30 %,

white blood cell count was 15,000/mm<sup>3</sup> with 81.4% neutrophil, platelet count and urine analysis were normal. Ultrasonographic examination demonstrated a hypoechoic cystic mass with the dimensions of 65 mm, 61 mm and 60 mm, in the left adnexal region. Laparotomy was performed for the diagnosis of the twisted left ovarian cyst. A gangrenous, 6 × 6cm paratubal cystic mass was found during the exploration. The cystic mass and the distal two third of the left fallopian tube had twisted 3 times around themselves.

As the right fallopian tube, both ovaries and appendix had no abnormality, left salpingectomy and extirpation of the left paratubal cyst were performed. Histologic examination showed severe congestion and recent hemorrhage in the wall of the fallopian tube and paratubal cyst. Postoperatively the patient required intravenous tocolysis for 2 days which was then weaned. She was discharged on the 5<sup>th</sup> postoperative day. The rest of the pregnancy was uneventful and she gave birth to a healthy male baby with birth weight 3.910g at the 38<sup>th</sup> week by cesarean section due to cephalopelvic disproportion. No fetal or maternal complication was observed during the postpartum period.

## Discussion

Isolated twisted fallopian tube in pregnancy is a rare event. Regad reported that only 12% of isolated tubal torsion was associated with pregnancy [2]. We have found only 1 case in 120,000 pregnancies from a 10 years period (1991–2000) in our institute.

The etiologies of the development of twisted fallopian tube in this case were paratubal cyst, pregnancy and sudden body position changes. Other etiologies have been proposed [3–11] including: anatomic abnormalities (long mesosalpinx, tubal abnormalities, hematosalpinx, hydrosalpinx, hydatids of Morgagni), physiological abnormalities (abnormal peristalsis or hypermotility of the tube, tubal spasm from drugs and intestinal peritalsis), hemodynamic abnormalities (venous congestion in the mesosalpinx), Sellheim theory (sudden body position changes), trauma, previous surgery or disease (tubal ligation, pelvic inflammatory disease), and gravid uterus.

The most presenting symptom is pain, which begins in the affected lower abdomen or pelvis but may radiate to the flank or thigh [5–8,10,11]. The onset of pain is sudden and cramp-like and may be intermittent [5,7,11]. Other associated symptoms include nausea, vomiting, bowel and bladder complaints, and scant uterine bleeding [5–8,10,11]. The body temperature, white blood cell count and erythrocyte sedimentation rate may be normal or slightly elevated [5–8,11]. Pelvic examination may reveal a tender, tense adnexal mass associated with cervi-

cal tenderness [12]. The present case presented with only left lower abdominal pain and nausea and vomiting.

Because these signs, symptoms and physical findings are associated with other common diseases, the diagnosis is never established before operation [3–11,13,14]. The differential diagnosis includes acute appendicitis, ectopic pregnancy, pelvic inflammatory disease, twisted ovarian cyst, ruptured follicular cyst, urinary tract disease, renal colic, degenerative leiomyoma, and abruptio placenta [3,5,7,8,10,11]. There have been reports of using ultrasound in the diagnosis of twisted fallopian tube [15]. The ultrasonographic appearance includes an elongated, convoluted cystic mass, tapering as it nears the uterine cornu and demonstration of the ipsilateral ovary [15]. In this present case, clinical and ultrasonographic findings led to a diagnosis of twisted ovarian cyst.

Many reports indicate that twisted fallopian tube is more common on the right than the left [3–11,13,14]. This may be due to the presence of the sigmoid colon on the left [3,5,7,8,11], or to slow venous flow on the right side, which may result in congestion [8]. The other reason is that more cases of right-sided pain are operated because of the suspicion of appendicitis [5,10], whereas left-sided cases may be missed and resolve spontaneously. But the unique aspect of our case that contrasted with other reports [3–11,13,14] was that the left fallopian tube was affected. This may have been related to the left paratubal cyst.

The management of this condition consists of early surgery [5,8,11]. Laparotomy is often performed [3–9,11,13], but laparoscopic surgery has recently been described in the management of twisted fallopian tube [10]. A recent report confirmed that laparoscopic surgery is safe for use in the first trimester of pregnancy [16]. If the tube is beyond recovery, salpingectomy is necessary. However, if twisting is incomplete or recent, untwisting may be possible and the tube may be preserved [3–5,7–9,11]. In our case laparotomy was suitable because of the enlarged 28-week uterus and salpingectomy was performed due to the gangrenous fallopian tube.

The English language literature concerning twisting or torsion of the fallopian tube and pregnancy available from Cumulative Index Medicus from the year 1962 to 1965 and Medline from the year 1966 to 2000 were reviewed. There have been 7 publications reporting 13 cases, including present case (Table 1). All cases occurred in reproductive age (age ranged from 20 to 41 years). The condition occurred in the first trimester in 1/13 (7.7%) case, second trimester 3/13 (23.1%) cases, third trimester 8/13 (61.5%) cases, and intrapartum 1/13 (7.7%) case. All of the cases were not able to be diagnosed as twisted

**Table 1: characteristic of twisted fallopian tube in pregnancy [5-9], [13], [14].**

Author (year)	Age (years)	Gravida & Parity	Gestational age (weeks)	Preoperative Diagnosis	Operative findings	Associated finding	Operation	Pregnancy outcome
Walker PA (1962)[13]	24	G <sub>1</sub> P <sub>0</sub>	37	Acute abdomen	Twisted right fallopian tube	No	Right salpingectomy	Term pregnancy (Vaginal delivery)
Lewis EC (1962)[14]	22	-	30	Acute appendicitis	Torsion of right fallopian tube	Cyst in broad ligament	Right salpingectomy	Term pregnancy (Cesarean section)
Chambers JT et al(1979)[5]								
Case 1	25	G <sub>1</sub> P <sub>0</sub>	30	Acute appendicitis	Torsion of right fallopian tube	No	Right salpingo-oophorectomy	Term pregnancy (Vaginal delivery)
Case 2	27	G <sub>1</sub> P <sub>0</sub>	36	Urinary tract infection and abruptio placentae	Torsion of right fallopian tube	No	Right salpingectomy	36 week pregnancy (Cesarean section)
Isager-Sally L & Weber T (1985)[6]								
Case 1	26	G <sub>1</sub> P <sub>0</sub>	15	Appendicitis	Torsion of right fallopian tube	Twisted right ovarian cyst	Right salpingo-oophorectomy	Term pregnancy (Vaginal delivery)
Case 2	25	G <sub>1</sub> P <sub>0</sub>	39	Fetal indication	Twisted right fallopian tube	Cyst of the mesosalpinx	Right salpingectomy	Term pregnancy (Cesarean section)
Case 3	20	G <sub>2</sub> P <sub>1</sub>	32	Fetal indication	Twisted right fallopian tube	Sactosalpinx	Resection of lateral part	36 week pregnancy (Cesarean section)
Case 4	30	G <sub>1</sub> P <sub>0</sub>	29	Acute appendicitis	Twisted right fallopian tube	Right ovarian cyst	Right salpingo-oophorectomy	-
McKenna P] & Gerbert KH (1989)[7]	33	G <sub>6</sub> P <sub>4</sub>	32.5	Acute appendicitis	Twisted right fallopian tube	Paratubal Cyst	Right salpingectomy	37 week pregnancy (Vaginal delivery)
Sorem KA et al (1991)[9]	26	G <sub>3</sub> P <sub>2</sub>	39 (in labor)	Early uterine rupture or adnexal torsion	Twisted right fallopian tube	No	Right salpingectomy	39 week pregnancy (Cesarean section)
Yalcin OT et al(1997)[8]								
Case 1	24	-	26	Acute abdomen	Twisted right fallopian tube	Right hydrosalpinx	Right salpingectomy	37 week pregnancy (Vaginal delivery)
Case 2	31	-	34	Torsion of an ovarian cyst	Twist right fallopian tube	Paratubal cyst	Right salpingectomy	39 week pregnancy (Vaginal delivery)
Present case	34	G <sub>3</sub> P <sub>2</sub>	28	Twisted left ovarian cyst	Twisted left fallopian tube	Paratubal cyst	Left salpingectomy	38 week pregnancy (Cesarean section)

fallopian tube before surgery. All of the cases except present case (92.3%) occurred in the right fallopian tube. There were no associated findings during operation in 4/13 (30.7%) cases, while reported associated findings were paratubal cyst in 3/13 (23.1%) cases, ovarian cyst 2/13 (15.4%) cases, cyst of mesosalpinx 1/13 (7.7%) case, cyst in broad ligament 1/13 (7.7%) case, sactosalpinx 1/13

(7.7%) case, and hydrosalpinx 1/13 (7.7%) case. Most of the cases were treated with salpingectomy of the affected tube. In all of the cases the pregnancies ended with a favorable outcome.

## Conclusions

Although twisting or torsion of fallopian tube during pregnancy is uncommon, it should be included in the differential diagnosis of acute abdomen in pregnancy. Early surgical intervention will decrease obstetric complications and may allow preservation of the tube.

## Competing interests

None declared

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