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Ovarian Endometrioma Torsion: Two Cases Report at the Department of Gynecology, Angre Teaching Hospital, Abidjan, Ivory Coast

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Abstract

Ovarian endometrioma torsion requires prompt surgical management to allow for conservative surgery. Therefore, early diagnosis is crucial. The authors report two cases of endometrioma torsion at Angre Teaching Hospital. In the first case, a 24-year-old G2P2 patient presented with subacute pelvic pain associated with a pelvic mass, without fever. Pelvic ultrasound revealed a large cystic pelvic mass suggestive of an endometrioma. Exploratory laparotomy confirmed a left endometrioma measuring 18 cm in its largest diameter, which had undergone torsion with two clockwise rotations. In the second case, a right ovarian endometrioma was diagnosed during emergency surgery for an acute surgical abdomen in a 43-year-old G2P0 patient. Ultrasound was highly valuable in establishing the diagnosis. Although the diagnosis was strongly suspected during the emergency laparotomy, definitive confirmation was provided by the histopathological examination of the surgical specimen. In both cases, this represented a diagnostic and therapeutic emergency due to the risk of severe complications, including tissue necrosis.

Keywords

Adnexal Torsion, Endometrioma, Pelvic Pain

1. Introduction

Endometriosis is a common chronic inflammatory condition affecting approximately 10% of women of reproductive age, with ovarian involvement commonly presenting as an endometrioma [1] [2]. Endometriosis is defined by the presence

of endometrial glands and stroma outside the uterus. Acute complications remain rare, with adnexal torsion accounting for approximately 3% of gynecological emergencies [3] [4]. However, torsion of an endometrioma is rarely reported in the literature. We report two cases of endometrioma torsion managed at Angre Teaching Hospital to illustrate the diagnostic and therapeutic challenges associated with this gynecological emergency.

2. Case Presentation

2.1. Case 1

A 24-year-old G2P2 female, a cashier, was referred for a pelvic mass associated with severe pelvic pain in the absence of fever. Upon admission, the patient was stable, conscious, and cooperative. Her vital signs were as follows: blood pressure 116/71 mmHg, heart rate 92 beats per minute, and temperature 36.7˚C. Abdominal palpation revealed a tender left pelvic mass. Speculum examination revealed a macroscopically normal cervix and vaginal walls, with no evidence of uterine or cervical discharge. On bimanual vaginal examination, the cervix was posterior, long, firm, and closed, with no blood or abnormal discharge on the examining glove. An emergency pelvic ultrasound revealed a large cystic pelvic mass highly suggestive of an endometrioma (**Figure 1**).

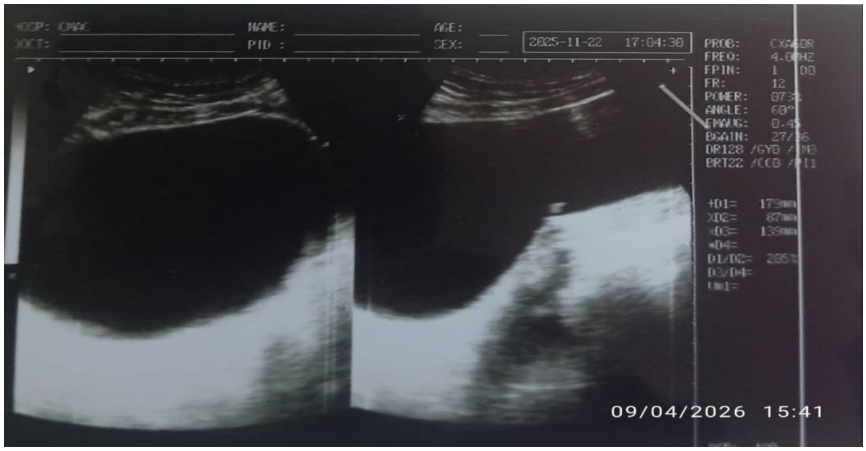


Figure 1. Cystic mass arising from the left ovary.

Emergency laparotomy revealed a large, endometrioma-like mass of the left ovary measuring 18 cm in its greatest diameter. The mass had undergone torsion with two clockwise rotations and exhibited focal areas of hemorrhagic suffusion (see **Figures 2-4**).

The large adnexal mass precluded the identification of healthy ovarian parenchyma.

Consequently, a left adnexectomy was performed (**Figure 5**). Surgical exploration revealed right adnexa of normal macroscopic appearance. The postoperative course was uneventful, and the patient was discharged on postoperative day 3. Histopathological examination of the surgical specimen confirmed the diagnosis

of an endometrioma.



Figure 2. Endometrioma of the left ovary.



Figure 3. Blackish-appearing areas of hemorrhagic suffusion within the adnexal mass, suggestive of endometriosis.



Figure 4. Torsed endometrioma demonstrating two complete rotations.

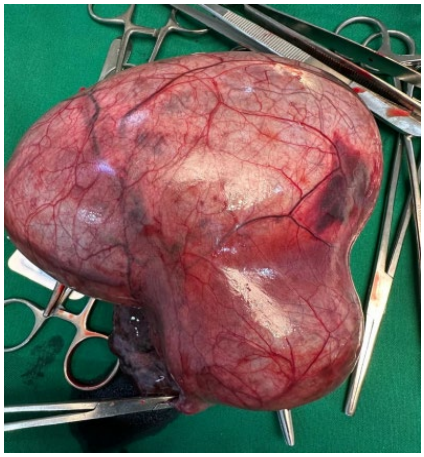


Figure 5. Left adnexectomy surgical specimen.

2.2. Case 2

This case involves a 43-year-old G2P0 patient seeking fertility. A few days prior to admission, she developed secondary amenorrhea (with a negative pregnancy test), followed by progressively worsening pelvic pain that persisted despite analgesic use, prompting her admission to the gynecological emergency department at Angre Teaching Hospital. Upon admission, she presented with signs of peritoneal irritation: the abdomen was slightly distended, with positive rebound tenderness at the umbilicus and flank dullness. Her hemodynamic parameters were stable. An emergency ultrasound revealed a right ovary containing a heterogeneous, multiloculated cystic mass measuring 54 mm × 42 mm × 49 mm, with hemorrhagic changes (**Figure 6**). A hemorrhagic ovarian cyst was suspected.

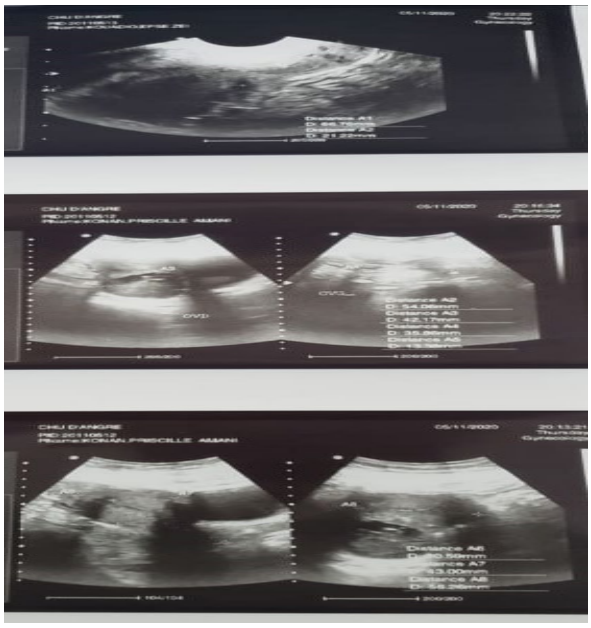
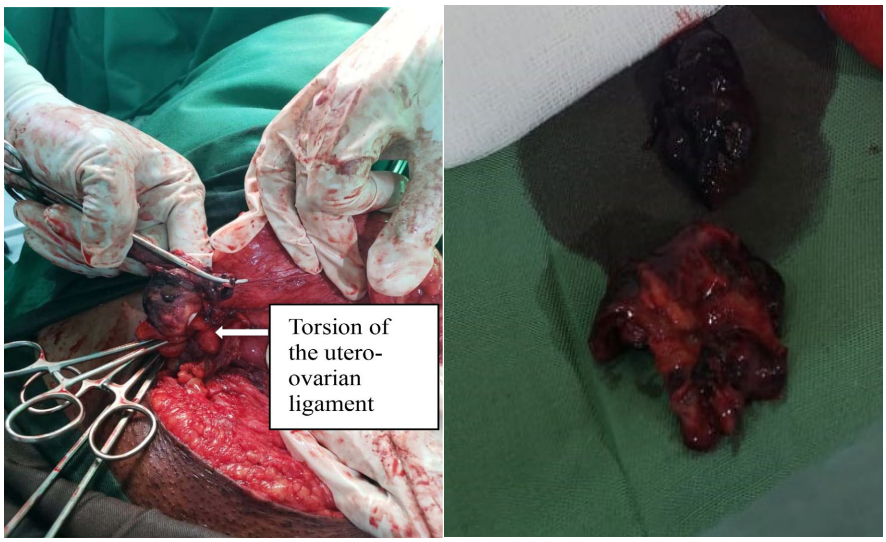


Figure 6. Pelvic ultrasound demonstrating a heterogeneous cystic mass in the right ovary with hemorrhagic changes.

Emergency laparotomy revealed a twisted and ruptured right ovarian cyst suggestive of an endometrioma (**Figure 7(a)**). Specifically, the right ovary exhibited dark brown to almost blackish granulations on its surface, and the cyst contained coagulated dark blood. Detorsion of the right ovary was performed, followed by a cystectomy (**Figure 7(b)**), as the ovarian tissue appeared visibly viable after the application of saline solution to the ovarian surface. The postoperative course was uneventful, with a return of bowel function on postoperative day 1. The patient was discharged on postoperative day 4. Histological examination of the surgical specimen confirmed the diagnosis of an endometrioma. Subsequently, the patient was placed on a GnRH analogue for 6 months.



(a) (b)

Figure 7. Torsed right ovarian cyst of endometriotic appearance, and cystectomy specimen showing blackish stippling and contents consisting of old clotted blood.

3. Discussion

The prevalence of endometriosis in the general population varies among authors, hovering around 10% [5] [6]. The endometrioma is the most frequent manifestation, occurring in 20% - 55% of patients with endometriosis [7]. The prevalence of endometrioma torsion is estimated to be between 2.5% and 7.4% of gynecological emergencies [8].

Torsion occurs preferentially in a pathological ovary, such as one containing a structural cyst. While adnexal torsion in general is the fifth most common gynecological emergency, torsion of an endometrioma is exceptional [9]. The rarity of this mechanical complication of ovarian endometriosis is likely related to the frequent pelvic adhesions associated with pelvic endometriosis, which restrict ovarian mobility.

According to the Hughesdon and Brosens theory, an endometriotic cyst forms either from endometrial implants in the ovarian fossa or from the inversion and invagination of the ovarian cortex. This cyst can grow to a size of up to 5 cm or

more. In such cases, it can induce rotation of the ovary bearing the cyst around the infundibulopelvic and utero-ovarian ligaments [10]. Indeed, in the context of endometriosis, the pathophysiology is complex and multifactorial, involving chronic inflammation, neoangiogenesis, fibrosis, adhesions, and modifications of the pelvic microenvironment. These elements can either stabilize the ovary (via adhesions) or, conversely, promote anatomical distortion that makes torsion possible. The symptomatology remains identical to that of classic adnexal torsion, notably acute, sudden, and intense pelvic pain, nausea, and vomiting [11] [12], as was observed in our two cases.

In many instances, paroxysmal pelvic pain serves as the revealing sign [4]. In our first case, the pelvic pain was the initial symptom; it could have been mistakenly attributed to the chronic pelvic pain typically associated with endometriosis if it had not been distinctly paroxysmal.

A predictive score developed by Huchon for ovarian torsion aids in diagnosis based on five criteria: unilateral pain, duration < 8 hours, vomiting, absence of abnormal vaginal discharge or bleeding, and the presence of a cyst larger than 5 cm on ultrasound [13]. The last two criteria were those identified in our observations. In addition to clinical findings, paraclinical investigations guide the diagnosis of endometrioma torsion. In this regard, pelvic ultrasound is highly valuable. According to the literature, color Doppler ultrasound of the ovarian vessels allows for the visualization of altered blood flow suggestive of ovarian torsion. Specifically, the "whirlpool sign" reveals a twisted vascular pedicle. Doppler ultrasound may show vessels arranged in a circular pattern within the mass [10]. Pelvic ultrasound with Doppler is the first-line imaging modality, although normal Doppler findings do not rule out the diagnosis [14]-[16]. This examination was not performed in our two cases. Although costly, magnetic resonance imaging (MRI) is also useful for diagnosis, as it delineates the components of a mass in greater detail than ultrasound [8]. However, the definitive diagnosis of an endometrioma remains the histopathological examination of the surgical specimen.

In our observations, the clinical presentation of an acute abdomen was sufficient to indicate laparotomy. Similarly, Hua *et al.* [17] reports a 25-year-old primigravida in the eighth week of gestation presenting with acute onset lower abdominal pain. Exploratory laparotomy revealed torsion of the right adnexa by 360˚.

Endometrioma torsion remains a diagnostic and therapeutic emergency. Indeed, torsion of the ovarian pedicle leads to ischemia followed by ovarian edema. If left untreated, ovarian torsion progresses to necrosis, thrombophlebitis, hemorrhage, or peritonitis [3] [5] [6], thereby compromising future fertility.

Torsion of an endometrioma raises the critical issue of ovarian preservation. Ovarian-sparing surgery, such as isolated detorsion, remains the preferred option whenever feasible, even though an ovary affected by endometriosis often has limited function. The priority must be to perform a cystectomy, as in the second case.

The European Society of Human Reproduction and Embryology (ESHRE) and other authors recommend laparoscopic cystectomy for endometriomas ≥ 4 cm [5]

[6]. ESHRE recommends emergency laparoscopic detorsion of the adnexa as the first-line treatment for all patients of reproductive age, in line with other professional societies such as the CNGOF and ACOG [18] [19].

Beyond torsion, cyst rupture can also occur, highlighting the value of cystectomy in the second case. This approach not only improves natural pregnancy rates postoperatively and confirms the histological diagnosis, but also improves the response to ovarian stimulation. To achieve this, complete excision of the cyst wall must be ensured, followed by meticulous bipolar electrocoagulation of bleeding vessels [2] [20] [21]. In the second case, cystectomy was indicated both because torsion had occurred as a complication and because the ovarian tissue was visibly viable. However, cystectomy and bipolar hemostasis risk impairing ovarian reserve.

In all cases, torsion of an adnexal mass suspected of being an endometrioma visible intraoperatively via the characteristic twisted appearance requires histopathological confirmation.

Recurrence rates for endometrioma are reported from 11% to 32% within 1 - 5 years after excision, some authors recommended as in case 2, to combine medical treatment, notably a GnRH analogue, when conservative treatment is used for a patient wishing to conceive [22]. This therapy may help control the progression of endometriosis.

4. Conclusion

Ovarian endometrioma torsion is a rare occurrence and a frequently overlooked complication of pelvic endometriosis. The diagnosis relies on clinical and paraclinical findings, which in our setting are primarily provided by ultrasound. However, the diagnosis is typically suspected intraoperatively and definitively confirmed by histopathological examination. The main challenge lies in the therapeutic decision of whether to preserve the ovary. For patients desiring future fertility, which is common in the endometriosis population, ovarian cystectomy is ideally recommended as long as the ovarian tissue remains viable, followed by the administration of a GnRH analogue.

Ethical Considerations

The patients provided consent for the publication of these cases. The Ethics Committee of the Angre University Hospital approved the publication of these cases in strict compliance with the obligations governing scientific research.

Author Contributions

The first three authors worked on the conceptualization, methodology, and drafting of this article. Funding acquisition, analysis, and supervision were carried out by all the other authors.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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