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Case Report

Transvaginal echo-guided drainage of an ovarian tubo abscess in the gynecological emergency of Meulan Les Mureaux about a case and review of the literature

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ABSTRACT

Tubo-ovarian abscesses (TOA) complicate 10 to 35% of upper genital infections (UGI). The diagnosis is based on a clinical-bio-radiological tripod. Treatment requires surgery or interventional imaging. We report a case of TOA drained by transvaginal ultrasound guidance in the gynecological emergency room of the Meulan-Les Mureaux intercommunal hospital center. This treatment was associated with probabilistic antibiotic triage therapy. The evolution was marked by a regression of the clinical symptoms and by a regression of the biological markers of inflammation on the 3rd day post drainage. This approach, less invasive than laparoscopy, should be favored in the event of comorbidity or unavailability of endoscopy. It can be an alternative to classic laparotomy in the absence of any contraindication.

Keywords: TOA, Drainage-transvaginal ultrasound

INTRODUCTION

Upper genital infections (UGI) are serious conditions that can cause sequelae.[1] TOA include pyosalpinx, ovarian abscesses, TOA proper and abscessed collections of Douglas of genital origin. An increase in the incidence of UGI due to *Chlamydia* and TOA has been observed since the early 2000s according to the institute for health surveillance to combat HIV/AIDS and sexually transmitted infections (STIs) in France.[1] The number of new cases of curable STIs worldwide each year is estimated at 357 million.[2] Of these new infections, 92 million occur in Africa.[2] According to WHO, curable STIs were distributed as follows: chlamydia (131 million), gonorrhea (78 million), syphilis (6 million) and trichomoniasis (142 million).[2] The recommendation for the management of ATO is laparoscopy.[3] This approach is not without difficulty, both material and human. It requires material equipment and training of practitioners in endoscopy. Thus, we report a case of ATO managed differently by transvaginal ultrasound-guided drainage in the gynecology emergency department of the intercommunal hospital center of Meulan-Les Mureaux. The objective was to propose an alternative to laparoscopic management of ATO.

CASE REPORT

This was. MAB, 38 years old, hypertensive treated with Velsortan and Amlodipine. She had tubal surgery for hydrosalpinx. She is 4th procedure and 2nd parous. She had 2 vaginal deliveries and 2 early miscarriages, no contraceptive methods. The date of the last menstrual period was set for August 7, 2023. Her symptoms were pelvic pain evolving for about a week before her admission. The associated signs were foul-smelling leucorrhea, dysuria and vomiting for a few days. A cough had persisted for several days. The general examination revealed an asthenic patient, a temperature at 38.2°C, a blood pressure at 89/55 mmHg, a pulse at 93 beats / min.

The abdominal examination showed tenderness in the right and left iliac fossae and the hypogastrium. On physical examination, leukorrhea was scanty, whitish, non-fetid and pain caused by mobilization of the uterus. Gynecological vaginal ultrasound showed a non-gravid uterus with a 15 mm anterior corporeal type IV FIGO myoma (Figure 1) and the presence of two heterogeneous hypoechoic masses occupying the cul-de-sac of Douglas, measuring 51×34 mm and 41×41 mm respectively. These two masses suggested a tubo-ovarian abscess. There was no fluid effusion in the pelvis (Figure 2).

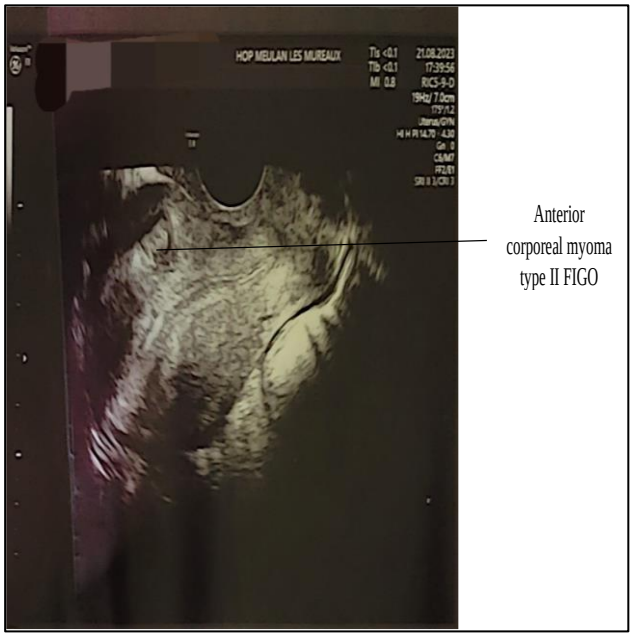

Figure 1: Pelvic ultrasound by engovaginal route showing an empty uterus with the presence of a 1.5 cm anterior corporeal type IV FIGO myoma.

Figure 2: Bilateral tubo-ovarian abscess on pelvic ultrasound via vaginal endovaginal way.

There was also an absence of vascularization of the two masses on color Doppler (Figure 3). The ultrasound images were similar to the abdominopelvic CT scan. The biological assessment was as follows: white blood cells at 2400 mm^3/element; hemoglobin at 10.7 g/dl; platelet count at 179,000 mm^3/elements; procalcitonin (PCT) at 110 mg/ml; C-reactive protein (CRP) at 334 mg/L; negative HCG and negative COVID PCR. It was concluded that there was an upper genital infection complicated by a bilateral tubo-ovarian abscess; associated with an acute dyspneic pulmonary infection probably bacterial in a hypertensive patient. The management consisted of hospitalization with intravenous probabilistic tri-antibiotic therapy: Ceftriaxone (2 gm in one daily dose), Metronidazole (500 mg three times a day) and doxycycline (100 mg twice a day). An analgesic with paracetamol 1g was given. A vaginal swab for *Chlamydia, mycoplasma, gonococcus* and common germs was taken. An indication for drainage of the tubo-ovarian abscess in the operating room was decided. Drainage consisted of ultrasound-guided evacuation via the transvaginal route in the operating room under loco-regional anesthesia instead of a laparoscopy. General anesthesia was not indicated for our patient due to the ventilatory risk related to the dyspneic pneumonia. This ultrasound-guided puncture brought back 100 ml of frank pus using an 18 G needle followed by aspiration lavage with physiological saline. This pus was sent to the laboratory for cytobacteriological examination. An ultrasound check carried out at the end of the procedure revealed a pelvis free of any tubo-ovarian abscess (Figure 4). The immediate postoperative course was simple. Bacteriology revealed *Pseudomonas pneumonia*. This was therefore a probable hematogenous contamination of the pulmonary germ. The evolution was marked by a regression of the clinical symptoms and by a regression of the biological markers of inflammation (CRP and PCT) on the 3rd day after drainage. Discharge was authorized on the 5th day of hospitalization with dual antibiotic therapy (Metronidazole and doxycycline) for 9 days. A follow-up appointment was scheduled for the 15th day.

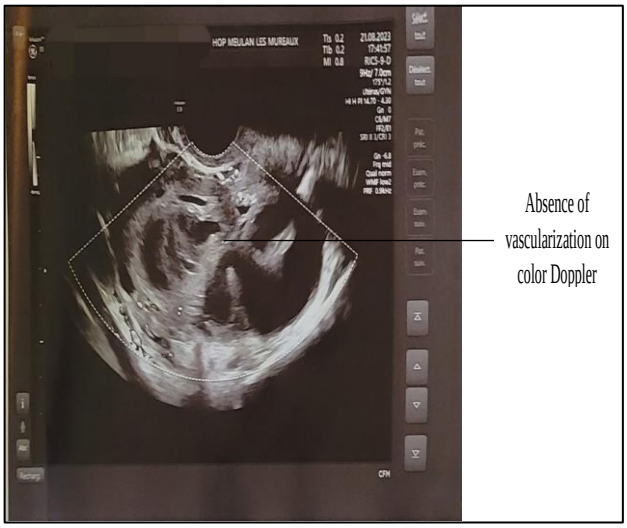

Figure 3: Color Doppler ultrasound of pelvic masses.

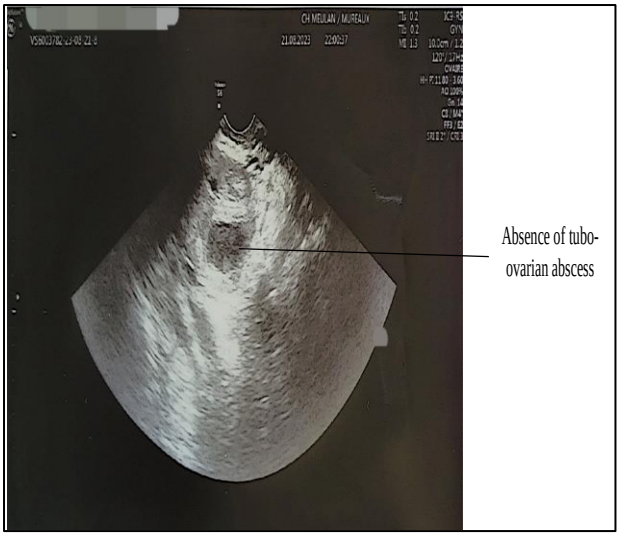

Figure 4: Ultrasound control after drainage of the tubo-ovarian abscess.

DISCUSSION

Incidence

TOA occur most often in women during the period of genital activity and complicate 10 to 35% of UGI. They are unilateral in 70% of cases.[1] In this present observation, it was a patient in genital activity without a contraceptive method with a history of tubal surgery for hydrosalpinx. The annual number of hospitalizations in France for ATO is estimated at 3000/year.[1] STIs remain a current issue in Africa. Indeed, in Côte d'Ivoire in 2015, 119,100 cases of STIs were notified by the ministry of health, with an incidence of 8.29 cases per 1000.[4]

Diagnosis

In our clinical case, the endo-vaginal pelvic ultrasound was sufficient to establish the diagnosis already guided by the clinical symptoms presented by the patient. According to the literature data, the diagnosis of ATO is made on the clinical-bio-radiological tripod.[1,3,5] It is recommended to perform a pelvic ultrasound in case of suspicion of IGH in order to look for signs of complicated IGH and to eliminate other differential diagnoses.[5] Abdomino-pelvic CT with injection of contrast product can be useful for differential diagnoses of urinary, digestive or gynecological origin (NP2).[5] MRI, a non-irradiating examination, can be performed as a second option because its diagnostic value and specificity are better than ultrasound and abdomino-pelvic CT in the diagnosis of ATO (grade B).[5] In our observation, the ultrasound performed allowed the diagnosis to be made. We also used abdominopelvic CT scan which showed images similar to ultrasound. An increase in CRP (334 mg/l) was found in our clinical case. Laparoscopy is considered the reference examination to confirm or rule out IGH in several studies.[6] It is indicated mainly in cases of diagnostic doubt. The systematic use of laparoscopy for diagnostic purposes only cannot therefore be recommended.[8] In this present clinical case, we did not use laparoscopy. The reasons were linked to the difficulty of performing general anesthesia because the patient presented signs of severe respiratory infections. In current practice, few CT or MRI scans are performed in Africa, due to their unavailability or the exorbitant cost of these examinations.

Management

The objectives of treatment of IGH are sterilization of infected sites, eradication of the infectious agent(s) involved, correction of symptoms and/or limitation of the risk of sequelae: tubal sterility, ectopic pregnancy (EP), chronic pelvic pain.[8] The absence of drainage of these suppurative collections exposes the risk of rupture and sepsis or septic shock that can lead to death. This evacuation of the ATO can be performed surgically or by puncture guided by imaging (size >3-4 cm). However, no study has prospectively compared the success rates between surgical approach and puncture under radiological control for the treatment of ATO.[1] A single small descriptive retrospective series carried out by Silva et al on the surgical approach to TOA, compared surgical treatment (coelioscopy (n=7) or laparotomy (n=23)) with ultrasound-guided drainage (n=17).[7] In this study, the author confirmed the significant increase in the risk of complications in the case of laparotomy and the high success and cure rate in the case of ultrasound-guided drainage (NP4). Thus, the strategy combining ultrasound-guided transvaginal drainage of the abscess with antibiotic therapy is developing and has given rise, in recent years, to several publications legitimizing this minimally invasive, safe and effective approach, limiting the risk of complications particularly observed when the treatment of the abscess is carried out by laparotomy or by coelioscopy with excision of infected lesions.[1] In the various recommendations, the recommended treatment regimens correspond to those proposed in the context of hospitalization, ATO being a systematic indication for hospitalization. The combination of ceftriaxone, metronidazole and doxycycline proposed in the French recommendations of 2012 has not been the subject of a comparative study with other regimens.[1] It remains current. This management reported in the literature was the one that we instituted, namely a tri-antibiotic therapy (ceftriaxone, metronidazole, doxycycline) coupled with transvaginal ultrasound-guided drainage (size of more than 3 cm). The advantage of transvaginal ultrasound-guided drainage compared to CT-guided drainage (posterior or transcutaneous) is the simplicity of implementation, the ease of performance under simple sedation, the non-irradiating nature, the lower risk of intestinal perforation (better visualization of digestive structures) when the abscess is located in the pelvis (recto-uterine or lateral cul-de-sac), the lower risk of trans-vesical or trans-intestinal passage.[3] The procedure can possibly be repeated. The placement of a drain is generally unnecessary, which can make the procedure more difficult and increase the risk of minor complications (poor positioning, displacement,

erosion of adjacent structures, fistula). However, irrigation with physiological or isotonic saline (2/3 of the volume of the collection aspirated) during puncture could improve drainage of the purulent collection when it has thick contents.[3] During our procedure, we did not insert a drain but performed a physiological serum aspiration lavage. The recommended total antibiotic treatment duration is generally 14 days, but it was determined on empirical bases of short-term clinical improvement and has never been specifically evaluated.[1,8] This treatment duration includes an initial parenteral phase followed by external antibiotic therapy, orally.[9] As was the case in our case where the treatment duration was 14 days with 5 days of parenteral administration.

Evolution

The evolution was satisfactory at the end of the 3rd day post-drainage with a regression of clinical signs and biological markers. A French study conducted by Vermersch et al also evaluating the efficacy of transvaginal puncture reported a success rate defined by obtaining apyrexia, regression of the inflammatory syndrome and regression of pain in 94% of patients.[10] In this study, 50 patients underwent puncture under GA (general anesthesia), ultrasound-guided, using an 18 G 30 mm needle combined with antibiotic therapy (ceftriaxone, metronidazole and cyclines).

CONCLUSION

As soon as ATO is diagnosed, a therapeutic approach should be considered combining parenteral probabilistic antibiotic therapy targeting the most frequently involved germs, a puncture-drainage of the suppurative collection if it is >3-4 cm in size, ideally by ultrasound-guided route. The laparoscopic route should be a second-line treatment. Ultrasound-guided transvaginal puncture of ATO is a conservative non-surgical approach that has shown high success and cure rates. This approach, less invasive than laparoscopy, should be preferred and taught especially in resource-limited countries.

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