

Pelvic Fluid Collection Post Vaginal Delivery Treated with Ultrasonic Aspiration: A Case Report.



Renad Mutlaq Alhanaki¹, AMINA butt²

¹college of medicine, Dar Al Uloom University, Riyadh, Saudi Arabia

²Master in clinical education leeds uk, Consultant obstetrician and Gynaecologist, Sulaiman AlHabib hospital

ABSTRACT

Background

Pelvic fluid collection can complicate a variety of abdominal surgeries and gynecological inflammations; nevertheless, it is considered a rare pathological consequence after normal vaginal delivery. It is characterized by a wall of thick fibrous tissue that delineate an area of pus and necrotic tissues.

Case presentation

A 31-year-old Saudi female presented with lower abdominal pain and dysuria 7 days following normal vaginal delivery. Apart from mild lower abdominal tenderness; the physical examination has been otherwise clear. The work-up showed leukocytosis and a high CRP level. The mild pelvic collection was shown on abdominal ultrasonography and the CT scan of the abdomen revealed an enhanced wall pelvic fluid collection measure of about 13*3.3 cm. The patient received injectable antibiotics, and the fluid was aspirated initially, via a transvaginal route under ultrasound guidance. Days later, further fluid was aspirated with the placement of a catheter inside.

Conclusion

Physicians and obstetricians should have a high rate of suspicion for diagnosing Pelvic fluid collection. Injectable antibiotics and fluid aspiration with or without catheter placement are the mainstays for treatment.

KEYWORDS: Pelvic fluid collection, fluid aspiration, Saudi Arabia.

INTRODUCTION

Free pelvic fluid plays an important physiological role in the female reproductive cycle; however, the accumulation of abnormal fluid within this area leads to pathological consequences. Pelvic abscess or other fluid collections following normal vaginal delivery is a rare clinical entity with a progressive presentation and a difficult therapeutic course [1]. It usually occurs following abdominal surgeries, genitourinary surgeries, inflammatory conditions such as appendicitis, Crohn's disease, diverticulitis, and complicated hysterectomy [2, 3, 4]. PFC is basically a wall of thick fibrous tissue that delineate an area of pus and necrotic tissues [5]. In pregnancy Young age group, prolonged labor, premature rupture of membrane and cephalopelvic disproportion are the major risk factors [6]. Lower abdominal pain, fever, and high white cell count after normal vaginal delivery should raise the susceptibility to pelvic fluid collection and necessities further workup [7]. Foul genital bleeding or discharge is another symptom for pelvic abscesses [8]. When PFCs suspected, empirical antibiotics should be started; however, sometimes antibiotics alone are not sufficient in most cases as it fails to reach adequate concentrations within the infected area [9]. Therefore, aspiration and drainage under ultrasound guidance are obligated in numerous cases [10]. Here, we report a rare case of a 31-year-old female who developed Pelvic fluid collection after normal vaginal delivery.

CASE PRESENTATION

A 31-year-old Saudi female was admitted in the our hospital obstetrics and gynecology department with complaints of lower abdominal pain and mild urinary symptoms (dysuria) 7 days after a normal vaginal birth. The pain was rated as 2-3 according to the numerical rating scale for pain intensity. The condition was not associated with vomiting, diarrhea, chest pain, or cough. Apart from mild lower abdominal tenderness; the physical examination has been unremarkable. Her investigations on admission showed raised C-reactive protein (CRP), 25 mg/L. leukocytosis (19000/mm³) and high CRP of 30 and 31 mg/L respectively. Her urine and blood cultures were negative. Post-partum changes in both the uterus and adnexa along with mild pelvic collection (ascites) were shown on abdominal ultrasonography. CT scan of the abdomen revealed an enhanced wall pelvic fluid collection measuring about

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13*3.3 cm in diameter seen in the vesicouterine region with stranding adjacent fat plan; suggestive of infected collection and abscess. However, the imaging rule out any suspicion of acute appendicitis or Retained products of conception (RPOCS). Intravenous Second generation cephalosporin were prescribed. Based on the above findings, she was referred to the interventional radiology department to aid in fluid drainage and appropriate management. Septated fluid was found in the anterior pelvic compartment during the Pre-procedure ultrasound. Under local anesthetic About 50 ml of serous fluid was aspirated using an 18 G needle under ultrasound guidance; no drain was inserted. Please note, that the post aspiration ultrasound shows almost complete resolution of the fluid, and she was commenced on Piperacillin/Tazobactam) injection on day 3 of admission as her CRP was rising with spikes of high grade fever. One day later, she complained of fever, mild lower abdominal pain, abdominal distention, and bloating. The physical examination was unremarkable, and her WCC was 19.68/mm³. On the following days (days 2 and 3 post aspiration), the patient's condition improved, the pain intensity decreased, fever subsided, and CRP declined. On the fourth- day post aspiration, the patient's abdomen was distended, and the CRP spiked to 65.1 mg/ L. Repeated Abdominopelvic ultrasound showed an anterior pelvic collection with separation volume 239ml and small pancreatic cystic lesion measured 0.6cm *0.45cm. Aspirated fluid culture showed no growth, as a result, Piperacillin/Tazobactam) was discontinued, and she was commenced on an ertapenem injection of 1g once a day. Two days later, an MRI abdomen revealed a loculated large vesicouterine collection of 13 cm which raised suspicion of possible defect in the urinary bladder wall. A voiding cystourethrogram (VCUG) with catheterization was organized after discussion with urologist, however it showed normal urinary bladder without any focal lesions, or leakage of contrast from the bladder. Furthermore, no vesicoureteral reflux was noted on the full bladder or during voiding, and no fistulas formations was seen. In light of these findings; the patient underwent a second aspiration procedure under ultrasound guidance, and an 8 Fr drain was inserted. Importantly, it drained 400 ml of dark serous fluid, which was sent for cytology .The intravenous antibiotic were continued. She started to improve on day 7 and on day 9 her repeat ultrasound showed minimal amount of fluid. She was discharged home on day 10 with follow up in clinic

DISCUSSION

Pelvic fluid collection is a potentially life-threatening condition if left untreated. Free fluid within the pelvic also called physiological free fluid was firstly reported by Novak et al in 1922 [11]. This fluid tends to play a fundamental role in transporting the ovum [12, 13]. It is most likely encountered during pregnancy and the menstrual cycle as a result of follicular rupture [13]. A high level of estrogen during these periods leads to a raise in the capillary permeability and hence, ovarian fluid exudation [14]. In normal cycle this fluid tends to subside near menstruation [14]. Our patient who was a 31-year-old female developed Pelvic fluid collection 7 days after a normal vaginal delivery without noticeable triggering factors. The absence of any histories of surgeries or inflammatory conditions, in this case, is distinctive; and demands a high rate of suspicion to diagnose such condition. A tubo-ovarian abscess is another common cause of Pelvic fluid collection [15]. It is complicated pelvic inflammatory disease, and presents in similar manner as Pelvic fluid collection; however, the presences of adnexal mass along with offensive vaginal discharge are unique for Tubo-ovarian abscess [16]. In our case, the absence of these manifestations made the diagnosis of Tubo-ovarian abscess unlikely. Day Tania and her colleague reported an interesting case of a 20-year-old female who developed pelvic abscess 20 days following normal vaginal delivery. Her patient presented with abdominal pain and constipation and was diagnosed with a pelvic abscess after a computer tomography scan [1]. MR Toglia and his colleague reported 38 females who developed post-hysterectomy Pelvic fluid collections. They experienced numerous presentations during the trial; nevertheless, they use pelvic examination and transvaginal ultrasound to make the appropriate diagnosis [3]. Interestingly, only one patient was evident prior to the sonography. In addition, the laboratory test particularly the white cell count, ESR, and CRP (inflammatory markers) are extremely helpful in both diagnosis and treatment response [5, 17]. Here, the combination of the clinical presentation of elevated white cell count and inflammatory markers along with the presence of pelvic fluid collections in imaging was highly suggestive of the diagnosis.

Antibiotics are usually the preferred first-line therapy but, medical therapy is usually insufficient in the majority of cases [5, 15]. Drainage of the pelvic fluid is a gold standard technique and usually leads to favorable outcomes. It can be achieved by numerous routes; such as transvaginally or through a percutaneous approach; and is usually under ultrasound guidance [5, 10]. The anterior percutaneous transabdominal approach can ease catheter placement and subsequently, post-procedure care, however, it is limited to certain cases because sometimes the fluid collections are obscure by the effects of bowel, bladder, or uterus. Therefore, transvaginal drainage under ultrasound guidance is preferred. It is usually performed by an interventional radiologist following administration of a foley catheter (or by asking the patient to empty the bladder) as in our case; then, under sterile aseptic conditions and ultrasound guidance; the fluid drainage is performed.[18, 19]. In the case of aspiration only, the whole fluid should be drained to minimize the risk of getting a life-threatening superinfection. After that, the fluids have to be sent for microscopic examination [18, 19]. The decision of making aspiration only or catheter drainage needs an expert operator. If the operator fails to aspirate the entire fluid, or the aspirated fluid contained purulent material; the catheter should be left in place for further

Pelvic Fluid Collection Post Vaginal Delivery Treated with Ultrasonic Aspiration: A Case Report.

drainage [15]. Our patient underwent fluid aspiration twice via abdominal route under ultrasound guidance. In the first attempt, the entire fluid was aspirated and no catheter was put in place. The second time, however, the fluid aspirated, and a catheter was put inside for additional drainage. Anuradha Saokar et al concluded in their report that the transvaginal route is generally safe; nevertheless, catheter drainage can be associated with future complications [15]. If the pelvic collections are due to a Tubo-ovarian abscess; broad-spectrum antibiotics are administered with or without the need for surgical intervention. In one clinical trial; Gjelland K et al reported a high success rate of using antibiotics alone to treat Tubo-ovarian abscess; however, in another study, Anuradha Saokar concluded that even patients who received the antibiotics to treat the abscess; later necessitated catheter placement for optimum fluid drainage [20]. Although it is a safe procedure; bleeding and bowel injury can occur. In our case no complications was developed.

CONCLUSIONS

Pelvic fluid collections following uncomplicated normal vaginal delivery is extremely rare. The development of lower abdominal pain and fever with a high white cell count should raise the susceptibility for pelvic fluid collections and necessitate further workup and imaging. Broad-spectrum antibiotics along with fluid drainage with or without catheter placement lead to favorable outcomes in the majority of cases.

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Pelvic Fluid Collection Post Vaginal Delivery Treated with Ultrasonic Aspiration: A Case Report.

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