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Case Report

Laparoscopic approach of a spontaneous vesico-ovarian fistula in an infected endometriotic cyst: an atypical presentation

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ABSTRACT

Spontaneous vesico-ovarian fistula is a sporadic occurrence. It can either occur as a result of a large abscess draining into the bladder or due to spontaneous fistula secondary to deep infiltrative endometriosis which might get contaminated with urine. Impaired immunity and bloody content of the endometrioma may facilitate the formation of tubo-ovarian abscess in endometriosis. This case report deals with a case of tubo-ovarian abscess with spontaneous vesico-ovarian fistula managed by minimally invasive surgery. A 40-year-old, parous lady presented with an incidental finding of endometriotic cyst with no associated symptomatology at our outpatient department. Hence, patient was planned for ovarian suppression with GnRH analogues. While on her second dose, patient had complaints of lower abdominal pain, dysuria and pyuria. On further evaluation, MR imaging was suggestive of bilateral tubo-ovarian abscess. Patient was planned for laparoscopic management of tubo-ovarian abscess. Intra-operative findings were suggestive of a frozen pelvis with frank pus draining in the urobag. Cystoscopy was done, suggestive of vesico-ovarian fistula involving the dome of the bladder. Trans-mesenteric drainage of the ovarian abscess was done, and patient was started on broad spectrum antibiotics which was culture sensitive. TB-PCR was negative for this patient. Catheterization for 3 weeks aided in the spontaneous healing of the fistula. Her final histopathology was suggestive of infected endometriosis. After suppression, with 2 doses of GnRH analogues, patient was planned for definitive surgery. MR imaging in endometriosis yields more information when the ultrasound is unclear, in cases of deep infiltrative endometriosis and in cases where surgery is planned as it provides larger field of view and better contrast resolution. Asymptomatic endometriosis if untreated might increase the risk of tubo-ovarian abscess, hence timely management is mandatory. An atypical presentation of tubo-ovarian abscess is noted in this report unlike other abscesses. Here, in our case, laparoscopic hysterectomy was done after the primary surgery of TOA drainage due to residual tubo-ovarian abscess and persisting endometriosis. Tubo-ovarian abscess can have varying presentation. Endometriosis is considered to be a risk factor for the development of tubo-ovarian abscess, hence timely diagnosis and management is necessary. Pre-operative MR imaging and laparoscopic approach with a multidisciplinary team in such cases would aid in decreased post-operative morbidity and quick recovery.

Keywords: Endometriosis, Tubo-ovarian abscess, Vesico-ovarian fistula

INTRODUCTION

The occurrence of tubo-ovarian abscess in endometriosis could possibly be due to various mechanism such as systemic immunological aberrance, impaired immunity in the pelvic cavity and bloody content of the endometrioma which serves as a culture medium, thereby facilitating the spread of infection.[1] With continuing infection, there may be inflammatory necrosis of the abscess wall and the adjacent vesical tissue leading to slow burrowing and

rupture of the abscess into the bladder. Vesico-ovarian fistula is a rare complication of tubo-ovarian abscess.[2] In this particular case report, the atypical presentation of an infected tubo-ovarian abscess and its subsequent management will be discussed in detail.

CASE REPORT

A 40-year-old, P1L1, previous LSCS, not sterilized lady presented to us with complaints of lower abdominal pain for the past 2 weeks associated with loss of appetite. Her cycles are regular with average flow and no associated dysmenorrhea. No complaints of dysuria or dyschezia during cycle or dyspareunia. Her bladder and bowel habits were normal. She was incidentally diagnosed to have pelvic endometriosis during a master health evaluation.

Her MR imaging was suggestive of a bulky uterus measuring 8×6×5.1cm with adenomyosis. Bilateral multiple endometriotic cysts – largest being 4.4×3.6 cm in right ovary and 2.9×2.3 cm in left ovary with mild right hydrosalpinx and left hematosalpinx. Both ovaries were adherent to uterus with normal POD. Sigmoidoscopy was done and was found to be normal as there was circumferential thickening of sigmoid colon with inflammatory changes. She was diagnosed to have diabetes recently was started on medication. On examination, her body mass index was 26.9 kg/m^2. Bilateral breasts were soft.

A Pfannenstiel scar was noted in the abdomen. Bimanual examination revealed bulky uterus with restricted mobility and firm mass with nodularity felt in the pouch of Douglas suggestive of endometriosis. Her CA 125 and CA 19.9 were 40.7 u/ml and 43.9 u/ml respectively. As symptoms were not proportional to the severity of pelvic endometriosis, she was planned for 3 doses of GnRH analogues followed by Dienogest if there was a reduction in size of the cysts.

During her second dose of GnRH analogue, she presented with complaints of lower abdominal pain associated with loss of appetite and loss of weight over the last few weeks. She also had new onset lower urinary tract symptoms such as dysuria/pyuria for the past 1 week. Her repeat MR imaging (Figure 1) was performed as her presentation was atypical and suspicious of a tubo-ovarian abscess. MR findings were suggestive of bilateral tubo-ovarian abscess measuring 10.2×7.2×7.2cm and 10.7×8.8×9.3cm.

Both lesions were in contiguity with each other with heterogenous T2 intermediate signal areas and hyperintensities. Both lesions were seen encasing the uterus with adenomyotic uterus (Junctional zone thickness 14 mm). Her total leucocyte count was normal but C-Reactive protein levels were raised. She was started on broad spectrum antibiotics after following the sepsis 6 bundle. After obtaining a proper consent, she was planned for laparoscopic drainage of tubo-ovarian abscess with anaesthetic clearance.

Intra-operative picture

Pneumoperitoneum was created using veress needle in the Lee Huang point. Dense extensive large bowel adhesions were noted in the midline completely obscuring the pelvis (Figure 2).

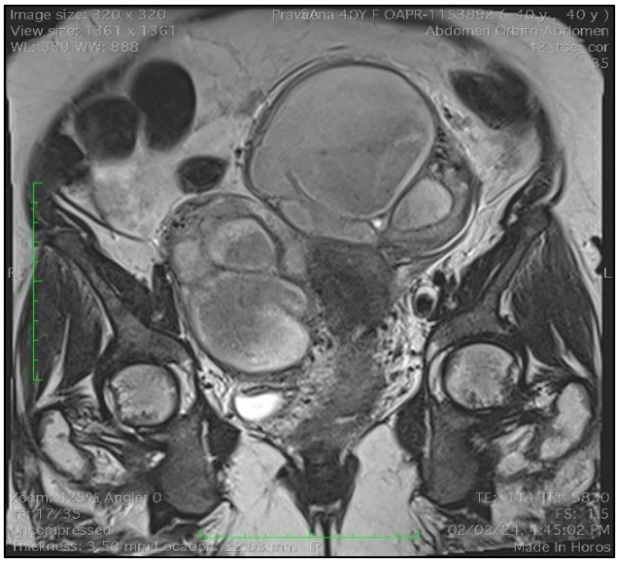

Figure 1: MR imaging showing bilateral tubo-ovarian abscess in the coronal plane.

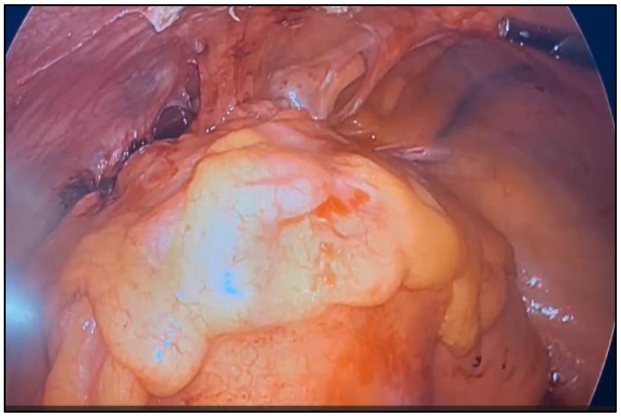

Figure 2: Frozen pelvis with tubo-ovarian mass distending the mesocolon.

Figure 3: Vesico-ovarian fistula on cystoscopy.

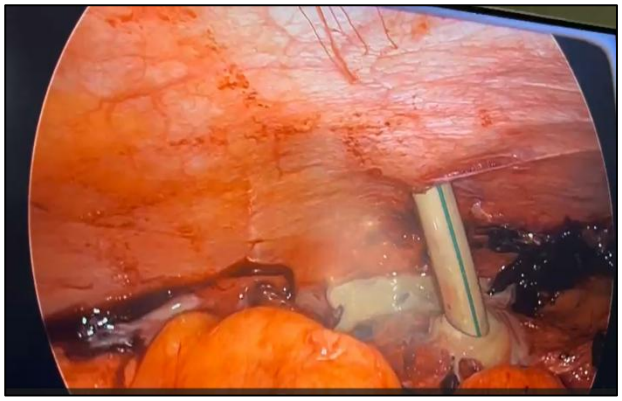

Figure 4: Drainage of tubo-ovarian abscess.

Figure 5: MR imaging showed bilateral residual tubo-ovarian abscess in sagittal plane.

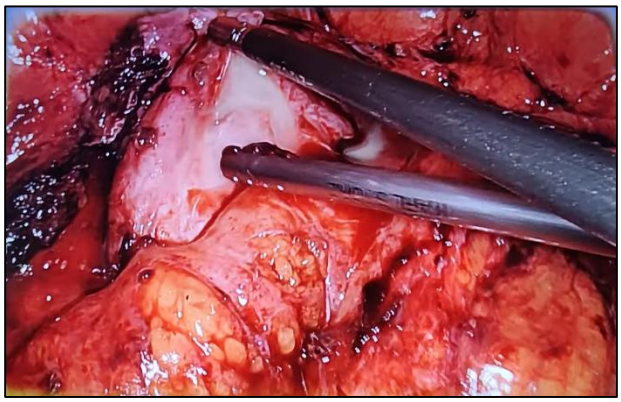

Figure 6: Residual tubo-ovarian with endometriosis in a second sitting surgery (TLH+BSO).

Tense suspected tubo -ovarian lesion was visible on the either side of large bowel adhesions. During the course of surgery, frank pus was seen draining in the urobag. Intra-operative cystoscopy was performed by the urologist. A fistulous tract emanating pus was noted in the edematous bladder dome which was suggestive of a vesico-ovarian fistula (Figure 3). Bilateral ureteric jet noted. Bilateral tubo-ovarian abscess was drained by Transmesentric and transperitoneal approach which gathered around 1.5 liters of fowl smelling purulent material (Figure 4). Samples were sent for culture and TB-PCR. Drains were placed directed towards the abscess wall. Patient was planned for suppression with injection Goserelin and catheterization for three weeks to aid in spontaneous healing of the fistulous tract. Patient was discharged with proper antibiotic coverage according to her culture sensitivity. Her Tb-PCR report was negative.

Meanwhile, catheter removed after CT KUB and patient had nil lower urinary tract symptoms and voided freely. After 3 doses of GnRH analogues, her repeat MR imaging findings (Figure 5) were suggestive of bilateral residual tubo-ovarian abscess measuring 56×38×34mm and 59×48×46 mm with right ovarian endometriotic cyst with t2 hyperintensity. Bilateral adnexa were adherent to each other and to the uterus. Loss of fat plane between the urinary bladder and uterus, left adnexal lesion and urinary bladder noted. Hence, after thorough counselling explaining the risk of bladder, bowel and ureteric injury, patient was planned for definitive surgery of total laparoscopic hysterectomy with bilateral salpingo-oophorectomy. Urologist opinion was sought and intra-operative assistance with cystoscopy if required was decided.

The intra-operative picture of her second sitting surgery showed residual tubo-ovarian abscess with severe pelvic endometriosis. Extensive adhesiolysis with bilateral ureterolysis was performed. Pararectal space and rectovaginal space dissected to release the rectal adhesions from the posterior uterine surface. Left adnexa was adherent to the bladder which was released by lateral window technique. Hysterectomy with bilateral salpingo-oophorectomy done by routine steps after releasing the adhesions. Bladder integrity ascertained by retrograde filling. Patient voided freely after 48 hours of catheterization and was planned for dienogest-a millennial molecule for suppression of occult endometriosis.

DISCUSSION

Incidental finding of endometriosis does not warrant surgical or medical treatment until there is evidence of disease progression which can be monitored by history, clinical examination and imaging.[3] In our report, her symptoms were inversely proportional to her disease severity and hence the decision to halt progression with GnRH analogues were taken.

The inciting event in the formation of tubo-ovarian abscess is the invasion of fallopian tube epithelium by a pathogen which could ultimately lead to tissue necrosis and damage. Impaired pelvic immunity, aberrant systemic immunity and altered blood of the endometrioma may act as a culture medium and facilitate the formation of tubo-

ovarian abscess in endometriosis.[4] Even though TOAs mostly with acute abdominal pain, fever, chills and abnormal vaginal discharge, some of them present differently from that of the classic scenario. Diffuse upper abdominal pain or altered bowel habits are some of the infrequent presentations.[5] Here, in our case, vague abdominal pain, loss of appetite, loss of weight and lower urinary tract symptoms were noted–an atypical presentation indeed!

Spontaneous rupture of an abscess into the bladder is a rare presentation. Prolonged inflammation secondary to an underlying pathology might leads to the formation of an encapsulated abscess which later becomes adherent to the bladder wall. With continuing infective etiology, there will be inflammatory necrosis of the abscess wall and the adjacent vesical tissue, finally rupturing into the bladder by a slow burrowing phenomenon.[6] Less commonly, there might be a spontaneous fistulous connection in the presence of a deep infiltrative endometriosis lesion which later gets contaminated by urine.[7] In our case report, the inciting event for the formation of vesico-ovarian fistula could be possibly be the presence of longstanding asymptomatic endometriosis which has gradually evolved into an abscess.

Laparoscopy drainage of tubo-ovarian abscess, salpingo-oophorectomy using aqua-dissection in acute cases and cold scissors or electrosurgery in chronic conditions is considered to be the gold standard in the management of tubo-ovarian abscess. Copious irrigation of the peritoneal cavity should be done.[8] Here, in our case, only drainage of tubo-ovarian abscess was possible. Furthermore, there was a surgical surprise of a spontaneous vesico-ovarian fistula. Adequate bladder rest with catheterization along with broad spectrum antibiotics and GnRH analogues aided in the healing of fistula and resolution of the acute inflammatory etiology.

A completion surgery of laparoscopic hysterectomy with bilateral salpingo-oophorectomy was performed in this patient as there was residual tubo-ovarian abscess with severe pelvic endometriosis.

CONCLUSION

Incidental endometriosis can lead to tubo-ovarian abscess formation which mandates the need for close follow up of such patients. In the long run, these abscesses can slowly burrow itself into adjacent organs as a result of inflammatory necrosis. An atypical presentation in tubo-ovarian abscess should raise the suspicion of vesico-adnexal fistula. Pre-operative /Intra-operative cystoscopy in TOA patients presenting with lower urinary tract symptoms is useful in recognizing vesico-ovarian fistula. In situations where complete drainage of abscess is not possible alongside stage 4 pelvic endometriosis, definitive surgical treatment with post operative progestins will be the management of choice.

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