



Vesico-Ovarian Fistula Formed In Infected Endometriotic Cyst: Case Report

Avantika Gupta¹  · Jayalakshmi Durairaj¹ · Deepthi Nayak¹

Received: 28 September 2020 / Accepted: 11 January 2021 / Published online: 25 February 2021
© Federation of Obstetric & Gynecological Societies of India 2021

Introduction

Tubo ovarian abscess is a sequelae of pelvic inflammatory disease which constitutes an infectious, inflammatory complex involving fallopian tube and ovary. There are various complications of tubo-ovarian abscess but rupture into bladder and forming vesico-ovarian fistula is an extremely rare complication. Diagnosis as well as management of vesico-ovarian fistula can be challenging. We report a rare case of vesico-ovarian fistula formed in an infected endometriotic cyst.

Case

A 24-year-old nulliparous woman presented with lower abdominal pain and lump in the abdomen for the past one year. One year back, she had undergone laparoscopic surgery and was diagnosed stage IV endometriosis. A right-sided endometriotic cyst around 10 × 8 cm was noted on right side along with a 6 × 5 cm left-sided endometriotic cyst. There were dense pelvic adhesions, and pouch of Douglas was completely obliterated. Right-sided endometriotic cyst was drained without cystectomy. One month after surgery, patient developed increased abdominal pain and could still

feel the mass. At the time of presentation to us, she had high grade fever for one month along with dysuria and passage of cloudy urine. She had toxic look and had a pulse rate of 120 per minute, temperature of 102°F and blood pressure of 120/80 mmHg. She had a haemoglobin of 9gm/dL, total leucocyte count of 12,000/dL with normal liver and renal function test. Ultrasound showed a huge right-sided thick-walled adnexal mass with echogenic contents. MRI showed a 16 × 15 × 10 cm thick-walled cystic lesion arising from right adnexa with few internal thick septations along with bilateral hydrosalpinges. Lesion showed hypointense signals on T1 (Fig. 1) and hyperintense signals on T2 suggestive of ovarian abscess.

Patient was started on broad-spectrum antibiotics. However, these findings did not explain her passage of cloudy turbid urine. Upon bladder catheterisation before surgery, 300 mL frank pus was drained. Cystoscopy revealed 2 cm rent in the bladder from where pus was seen coming through which increased on giving pressure over the mass. Patient underwent emergency laparotomy, and the abscess was drained followed by ovarian cystectomy, debridement of the fistulous tract and repair of bladder. The abscess was densely adherent to the small bowel, sigmoid colon and omentum. Pouch of Douglas was completely obliterated by dense adhesions. Left adnexa was buried under dense adhesions and could not be visualised. Right-sided ovarian cystectomy was done after draining 1.5 L pus from ovarian abscess.

After difficult adhesiolysis, the fistula communicating with abscess was identified and dissected followed by bladder repair. Pus culture grew *Escherichia coli* for which broad-spectrum antibiotic (Injection Meropenem) was continued for 10 days. Suprapubic as well as self-retaining urethral catheter was kept for 21 days after which a cystourethrogram was taken which showed no residual fistula. Both the catheters were subsequently removed. Histopathology of cyst wall showed dense infiltration with lymphocytes, plasma cells, and foamy macrophages. Acid fast bacilli were not detected. Patient recovered well and was discharged in

Dr. Avantika Gupta is Assistant Professor at Department of Obstetrics & Gynaecology, Jawaharlal Nehru Institute of Postgraduate Medical Education & Research (JIPMER), Puducherry, India; Dr. Jayalakshmi Durairaj is Professor at Department of obstetrics and gynecology, JIPMER, Puducherry; Dr. Deepthi Nayak is Senior resident at department of obstetrics and gynecology, JIPMER, Puducherry.

✉ Avantika Gupta
dravantikagupta@gmail.com

¹ Department of Obstetrics & Gynaecology, Jawaharlal Nehru Institute of Postgraduate Medical Education & Research (JIPMER), Old MSR no 1, Gorimedu, Puducherry 605006, India



Fig. 1 Right-sided huge TOA showing hypointense signals on T1-weighted image in MRI

good health. On two-month follow-up, patient resumed her periods and had no symptoms. Her day 2 serum FSH was 5.6 IU/L, and serum AMH was 1.8 ng/mL, which were similar to her preoperative values, done during infertility workup.

Discussion

Among all gynaecological fistulas, ovarian-vesical fistula is the most uncommon. It can be formed when a large distended abscess drains into bladder. Another extreme rare possibility is formation of spontaneous fistula formed due to deep infiltrating endometriosis which can get secondarily infected due to urine contamination. In the present case, there is history of surgical intervention causing secondary infection of endometriotic cyst which would have ruptured between the leaves of broad ligament dissecting down towards the base of the bladder and finally eroding it. The presence of dense adhesions between the abscess and the bladder makes erosion into the bladder faster.

In a large study done by Chen MJ et al. in 83 patients with tubo-ovarian abscess, it was found that women who had stage III–IV endometriosis and who were nulliparous were much more likely to develop tubo-ovarian abscesses than those without endometriosis [1]. *E coli* was more frequently observed in patients with endometriosis than in those without endometriosis. Women who had a previous pelvic surgery were at a higher risk to develop tubo-ovarian abscess in those with endometriosis than in those without endometriosis [1].

Till now, seven cases of vesico-ovarian fistula have been reported in the literature. The earliest case reported in 1950s was due to underlying tuberculosis; subsequently, it has been noted following secondary infection with

intrauterine device, endometriosis, iatrogenic following hysterectomy and endometriotic cystectomy in advanced endometriosis [2, 3].

As learnt from the previous cases reported in the literature [2, 3], any surgical intervention including laparoscopy can lead to secondary bacterial infection, especially if adhesions are present. Any patient who underwent surgery and presents with high grade fever and tender mass in postoperative period should be evaluated for the presence of pelvic abscess. Delayed diagnosis can lead to formation of ovarian abscess which if untreated can rupture into surrounding structures like bladder. Voiding cystogram or cystoscopy can identify even a small fistula; however, it can get missed on MRI or CT scan [2, 3]. So, whenever any fistula is suspected communicating with the bladder, cystoscopy or voiding cystogram should be preferred.

Standard treatment for such large abscess with fistula remains surgical, i.e. removal of cyst/adnexa, debridement of fistulous tract and repair of bladder [2]. Conservative treatment or treatment with embolisation [3] is reserved only for very small fistulas, and patient responds well to antibiotics.

Acknowledgement Nil.

Funding This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Compliance with Ethical Standards

Conflict of interest The authors declare no conflict of interest.

Consent for publication We hereby transfer, assign, or otherwise convey all copyright ownership, including any and all rights incidental thereto, exclusively to the journal, in the event that such work is published by the journal.

Ethical approval Ethical approval was not required for case reports as per the Institutional Ethics Committee guidelines.

Informed consent Informed consent was obtained from the patients, and their identity was not disclosed.

References

1. Chen MJ, Yang JH, Yang YS, Ho HN. Increased occurrence of tubo-ovarian abscesses in women with stage III & IV endometriosis. *Fertil Steril*. 2004;82(2):498–9.
2. Tran C, Even M, Carbonnel M, et al. Vesicoovarian fistula on an endometriosis abscessed cyst. *Case Rep Obstet Gynecol*. 2014;2014:240596.
3. Al-Omari MH, Hamid AS. Vesico-adnexal fistula treated with transurethral embolization under fluoroscopic guidance. *Am J Case Rep*. 2017;18:949–52.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Young Turk award. She has various national and international publications to her name.

About the Author



Avantika Gupta Dr. Avantika Gupta is currently working as Assistant Professor in Department of Obstetrics and gynecology, JIPMER, Puducherry. She did her MBBS from Lady Hardinge medical college, Delhi, and MS obstetrics and gynecology from Maulana Azad Medical College, New Delhi. She has completed MRCOG from UK. She has been awarded with FOGSI imaging award and