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Case Report

Multipara with utero-vesical fistula following repeat cesarean section: a rare iatrogenic complication ☆,☆☆

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ABSTRACT

Utero-Vesical fistulas are the rarest of all urogenital fistulas, with most cases occurring after cesarean section. Its prevalence is increasing worldwide because of the increasing indications of cesarean section. Patient usually presents with urine leak, amenorrhea and cyclic hematuria. Herein, we present a case of patient presenting with complain of severe urinary tract infection following cesarean section. Review and update of recent literature regarding the diagnostic imaging of this entity are described.

Introduction

An abnormal communication between uterus and urinary bladder resulting in fistula formation is a rare, but serious urogenital complication of caesarean delivery. Utero-vesical fistulas are considered to be the least common type of urogenital fistulas. Among the various causes for these fistulas, the lower segment caesarean section is the most common.

The primary symptom of patients with these fistulas is usually urinary incontinence however patients may present with cyclic hematuria and amenorrhea. The symptoms are mostly varied and the location and size of the fistulas determine them. Different imaging modalities are used when patient presents with suspicion of utero-vesical fistula. Herein, we report a case of patient with presenting complaints of severe urinary tract infection following cesarean section which was diagnosed on ultrasound as a case of vesicouterine fistula.

Case report

Thirty one-year-old multiparous lady presented with complaints of burning micturition and per vaginal discharge. Patient has had a low-segment caesarean delivery 1 month back from a tertiary care hospital. She also had two caesarean sections previously. She had developed the above mentioned

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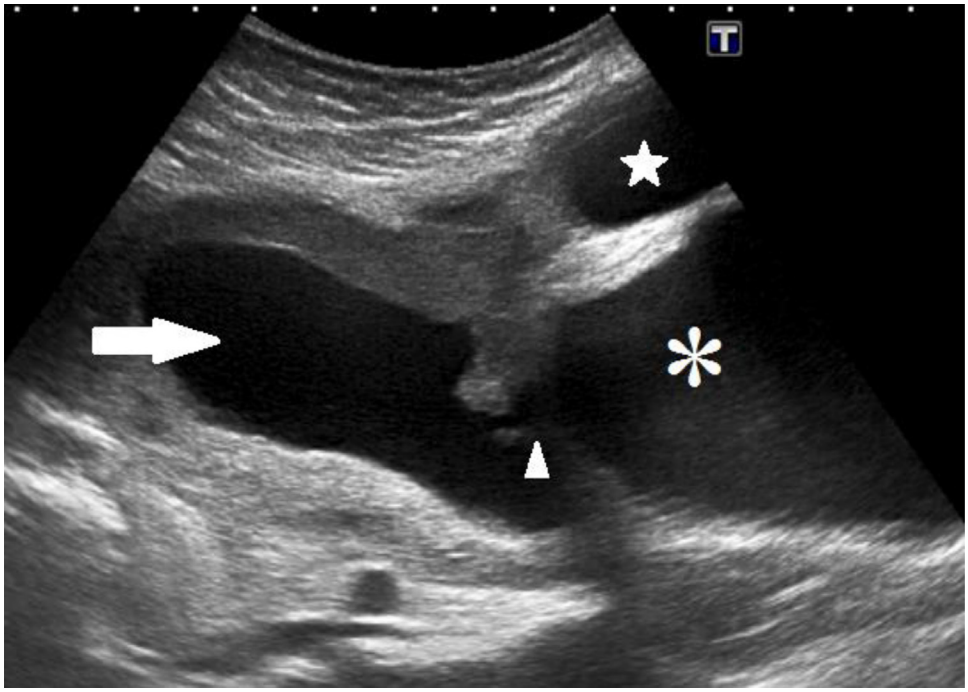

Fig. 1 – Gray-Scale Transabdominal Ultrasound Image showing distended endometrial cavity filled with anechoic fluid (arrow). Discontinuity of anterior wall of uterus (arrow head) demonstrating communication of uterine cavity with the urinary bladder (asterisk). Another anechoic fluid filled cavity (star) is noted antero-superior to urinary bladder in the anterior abdominal wall.

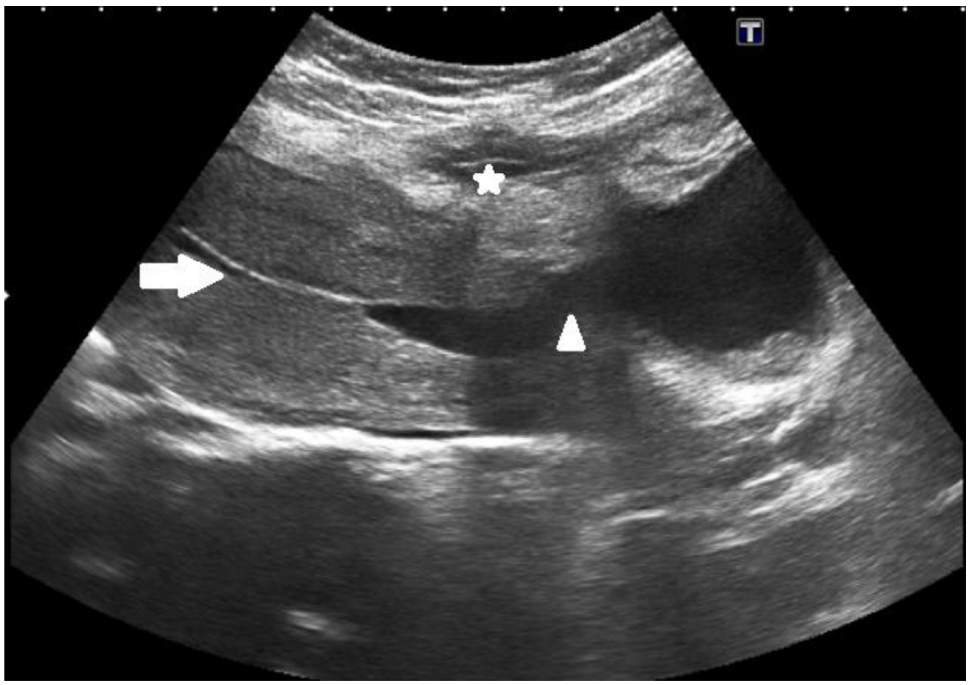

Fig. 2 – Gray-Scale Transabdominal Ultrasound Image. Post void image shows emptying of endometrial canal. Collapse of the fluid collection in anterior abdominal wall (star) also noted. Fistulous communication (arrow head) of uterus and urinary bladder remonstrated.

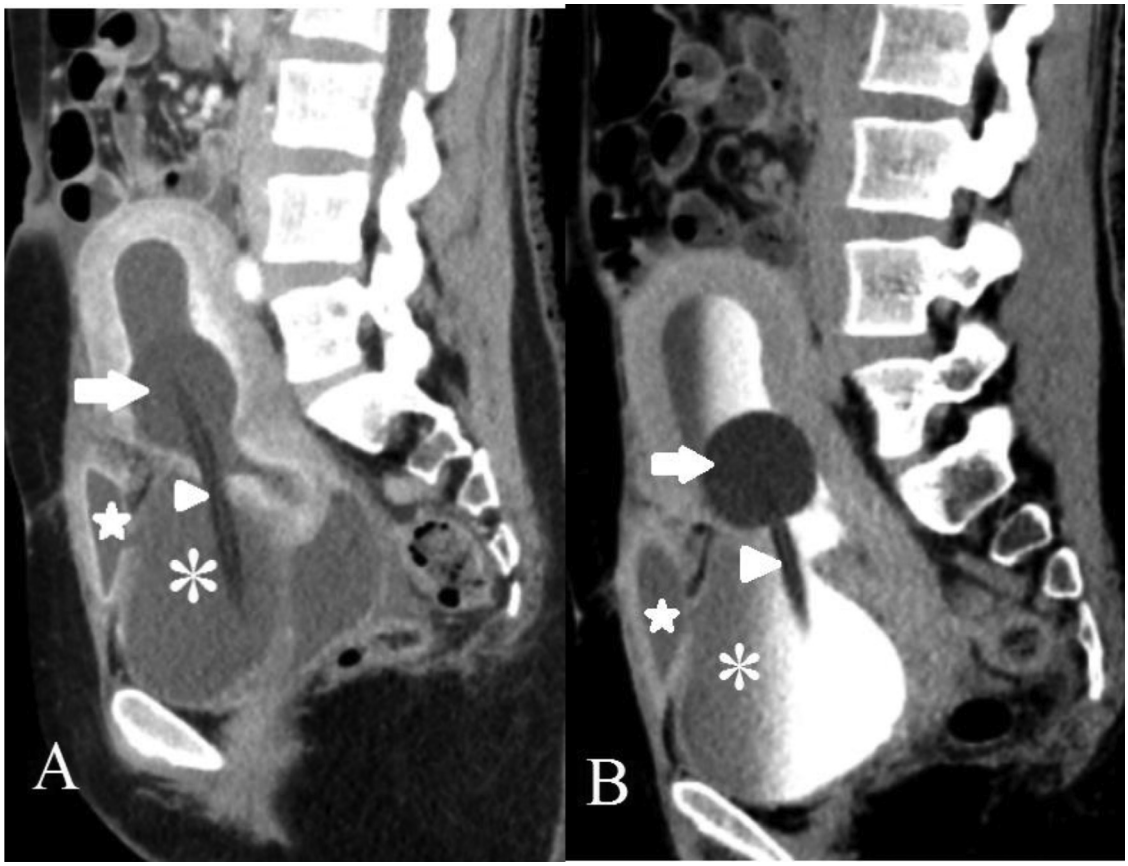

Fig. 3 – CT scan sagittal view portovenous (A) and delayed phase (B) images showing communication of uterus with urinary bladder (arrow head). Foley catheter passed from urinary bladder (asterisk) is passing through the fistulous tract and entering the uterine cavity (arrow). Hypodense fluid filled collection (star) is noted in the rectus sheath with communication to the urinary bladder.

symptoms 1 week after her caesarean section and symptoms continued since then.

On general physical examination, she was afebrile with normal pulse and blood pressure. She had soft and non-tender abdomen.

On per vaginal examination bulky uterus noted representing postpartum status. Thin and watery vaginal discharge admixed with blood was identified without any smell.

Her urine routine examination was performed which showed pale yellow slightly turbid urine. Blood was greater than 5+ RBC's and leucocytes noted greater than 20.

Preliminary diagnosis for urinary tract infection was made with suspicion of Utero-Vesical fistula.

Transabdominal ultrasound pelvis was performed which showed bulky uterus and distended endometrial cavity with anechoic fluid. Discontinuity of anterior wall of uterus was observed through which uterine cavity was communicating with the urinary bladder. Another anechoic circumscribed fluid filled cavity was noted along the antero-superior margin of urinary bladder in the anterior abdominal wall. However, no visible communication with urinary bladder was appreciated on ultrasound examination (Fig. 1). On post void imaging, the endometrial cavity and the cavity anterior to the urinary bladder collapsed (Fig. 2).

Subsequently CT scan (Fig. 3) was performed which showed focal discontinuity and communication between the lower anterior uterine endometrial cavity and the posterior bladder wall representing fistulous tract. Another direct fistulous communication was identified between the anterior urinary bladder wall with a contained leak into the anterior rectus sheath.

Patient was managed conservatively with intravenous antibiotics and analgesics. Patient remained stable throughout her hospital stay and was discharged with silicon catheter in place. On follow up, patient showed uneventful recovery with resolution of all symptoms.

Discussion

Fistula is an abnormal communication between two or more epithelial surfaces. Utero-vesical fistula is an abnormal communication between uterus and urinary bladder. These fistulas are secondary to intervention either to uterus or urinary bladder and most commonly encountered after Lower caesarean sections [1]. Although these fistulas are not so common but their incidence is increasing due to increase in the

number of lower Cesarean sections [2]. Other less common inciting causes includes induced abortion, dilatation and curettage, and vaginal birth after previous C-section, forceps delivery, and rupture of the uterus and bladder after obstructed labor. These fistulas also observed in malignant tumors, secondary to brachytherapy in gynecological malignancies and radiation therapy [3]. Kadiri et al published a case report in which the fistula formation was due to the migrated intrauterine conceptive device [4].

Presenting complaints of the patients depends upon the size and location of the fistula. Urinary incontinence is the commonest presenting complaint however if the fistula is above the uterine isthmus the patient presents with hematuria and amenorrhea, because the menstrual blood directly enters the urinary bladder rather to accumulate in the uterine cavity and exert pressure to open the isthmus for menstrual flow. It was very well described by Yousufi et al [5,6]. However normal menstrual flow ensues in patients with fistula below the isthmus.

Precise assessment of utero-vesical fistula is the main stay of treatment. Radiological investigations play pivotal role in the evaluation of size and location of fistula. The investigations used to see for the fistulous communications are cystography, hysterography, ultrasound, CT scan with sagittal reformation and MRI pelvis [7].

Cystography is the initial investigation but sometimes it fails because pressure in the uterus is high than the pressure in the bladder and small fistula are usually missed [4,6].

Hysterography is indicated when there is strong suspicion of utero-vesical fistula. Contrast in the uterine cavity when enters the bladder confirms the diagnosis. Study published by N Rajamaheswari [8] stated that all false negative outcomes from hysterogram were obtained when the cannula was advanced beyond the level of fistulous site.

Similarly, intravenous urography examination remains nonspecific in most of the cases as this test may not generate adequate intraluminal pressure within the bladder to opacify the fistula [9].

Ultrasound is not commonly indicated for the evaluation of fistula. However, the fistulous tract can be directly visualized as in our case. If the findings remain inconclusive and clinical suspicion of a fistula is high, further evaluation with cross-sectional imaging is generally warranted.

MRI can show abnormalities, but results from these examinations are not conclusive. Although, some authors have identified the fistulous tract on heavily T2- weighted MR sequences [10].

Helical CT appears as a valuable tool in depicting uterovesical fistula [9]. When a low uterovesical fistula is present, CT after IV contrast injection is a good method to show the fistula, but a high pressure in the bladder may be necessary. When a high uterovesical fistula is suspected, it is best shown on hysterosalpingography. However, helical CT with sagittal reformation, performed after hysterosalpingography, gives more information to the surgeon about the precise topography of the fistulous tract.

Treatment methods are expectant management with long term bladder catheterization, medical treatment and surgery. When the fistula is discovered just after delivery, conservative management by bladder catheterization for at least 4-8 weeks is indicated since there is good chance for spontaneous closure of the fistulous track. Medical treatment involves healing of fistulous tract by induction of amenorrhea in women presenting with Youssef's syndrome with hormonal treatment.

Surgery in most cases, especially for large uterovesical fistulas is the treatment of choice. Surgical repair of uterovesical fistulas are performed by different approaches, which include vaginal, transvesical, transperitoneal and laparoscopic or robotic procedures [11–14].

Conclusion

Increase incidence of utero-vesical fistulas is encountered especially with the wide-spread use of lower segment caesarean section. On reviewing literature, we found that utero-vesical fistulas have good prognosis however prompt and accurate diagnosis is important for appropriate treatment.

Patient consent statement

Written informed consent for publication was obtained from the patient.

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