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Case Report

Lizard on the wall appearance-total laparoscopic hysterectomy on a ventrofixed uterus

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ABSTRACT

Hysterectomy is one of the most performed procedures for gynecological conditions worldwide. Ventrofixation of the uterus, a surgical technique where the uterus is fixed to the anterior abdominal wall, can complicate routine gynecological procedures, including hysterectomy. Performing a total laparoscopic hysterectomy (TLH) on a ventrofixed uterus presents unique challenges due to altered anatomy and the presence of adhesive tissues. Adhesions during surgery are associated with increased morbidity due to prolonged operating time and organs injuries. A ventrofixed uterus can often be suspected in patients with a history of CS, based on specific clinical symptoms and ultrasonographic findings described by Sheth et al. Surgeons should be aware of the altered anatomy and the potential for adhesions when performing laparoscopic hysterectomy in such cases. Appropriate preoperative workup and planning of surgery reduces complications and improves the outcome. Some of techniques for dissection of ventrofixed uterus is discussed in this paper.

Keywords: Cervico-fundal sign (sheth), Lateral window technique, Cytosufflation technique

INTRODUCTION

The caesarean rate in India has been increased from 8.5% (NFHS-III) during 2005-06 to 17.2% (NFHS-IV) during 2015-16 with up to 40.9% in 2022.[1] Therefore our total laparoscopic hysterectomy in patients with previous caesarean section is becoming increasingly common. Studies have reported 60% occurrence of intra-abdominal adhesion in patients with previous laparotomies and 46% with second caesarean delivery which increases to 75% and 83% with third and fourth caesarean delivery respectively.[2]

Challenges encountered during TLH in such cases are due to intra-abdominal and bladder adhesion to uterus which makes dissection and mobilisation of bladder off the cervix more difficult. Laparoscopy has advanced rapidly during past years and has become gold standard treatment for benign gynaecological conditions with numerous benefits including low morbidity and postoperative recovery.

CASE REPORT

We report a case of 63-year-old post-menopausal multiparous women with complaints of abdominal pain for 2 weeks. She was a hypertensive with autosomal dominant polycystic kidney disease. She had previous 2 caesarean sections and open appendicectomy 35 years ago. Clinical examination revealed a mass of 8×8 cm occupying right lumbar right iliac and suprapubic quadrants. Per vaginal examination revealed an atrophic uterus with cervix flushed to vagina. Ultrasound examination revealed enlarged kidneys-right side 14×5 cm with largest in mid pole 5×4.5 cm with thin septations and left kidney 12×4 cm. Uterus was 8.5×2.1 cm with right adnexa showing a multiloculated cyst with low internal echoes of 6.5×5.8 cm size with no abnormal vascularity. MRI pelvis revealed right simple adnexal cyst of size 6.9×5.7×5.4 cm with no solid components. Ca 125, ca 19.9 was within normal limits. Total laparoscopic hysterectomy with bilateral salpingo-oophorectomy was done for this patient. Primary

port was made in palmer's point using open Hassan technique. Intraoperative findings noted-uterus was completely stuck to anterior abdominal wall. Left tube and ovary was stuck to lateral pelvic wall. Right ovarian cyst 6*6 cm bluish coloured was stuck to right lateral wall. Hysterectomy proceeded by identifying. Round ligament in the left side. The Cornual structures was cauterised and cut using bipolar and harmonic scalpel. Anterior and posterior leaflet of broad ligament opened. Bladder dissection proceeded through lateral window technique. Left ovary was completely stuck to lateral pelvic wall and same was removed by fine dissection using bipolar cautery. Right adnexal and right tube was cut after cauterising Infundibulo-pelvic ligament. Right cyst was placed in endobag and contents was suctioned out without any spill. Both tubes and ovaries removed via endobag through vagina. Vault closed by endosuturing using v lock technique.

Post operatively patient was on injection Taxim and metronidazole. ERAS (Enhanced recovery after surgery) protocol followed and orals started on the day of surgery. Mechanical thromboprophylaxis given. Patient was discharged. Histo pathological report revealed mucinous cystadenoma right ovary and atrophic endometrium.

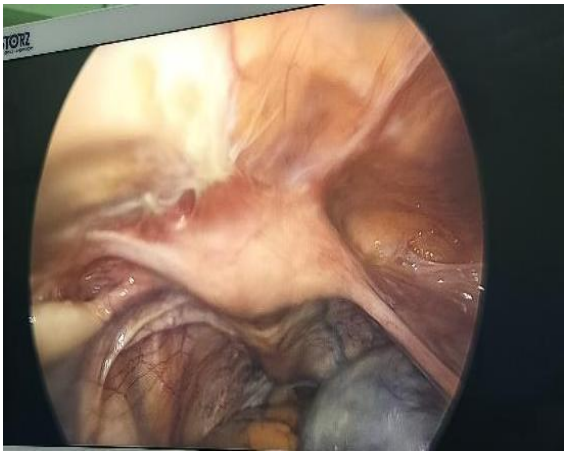

Figure 1: Intraoperative findings: ventrofixed uterus.

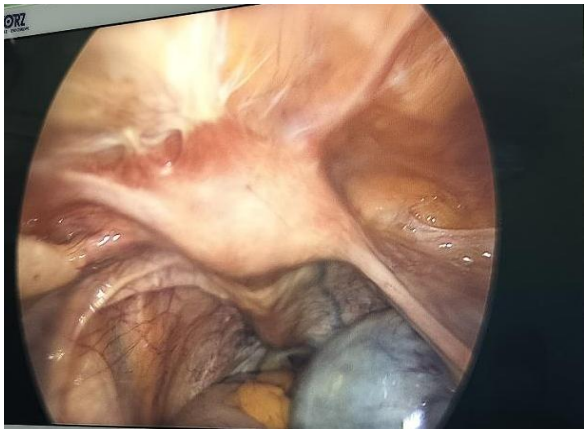

Figure 2: Uterus stuck to anterior abdominal wall and right adnexal cyst to right lateral wall.

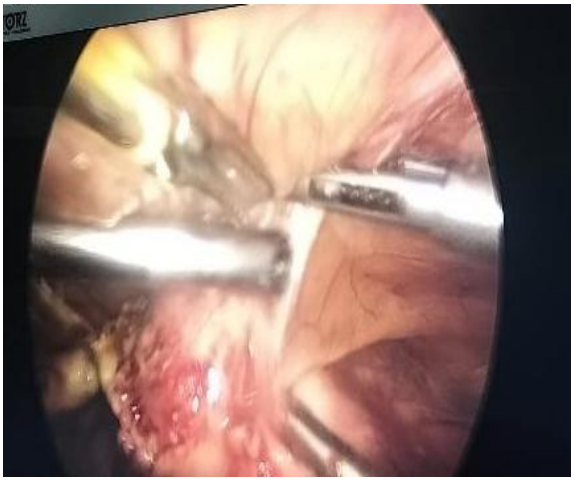

Figure 3: Release of right tube from lateral pelvic wall.

DISCUSSION

Ventrofixed uterus refers to an adhesion between the anterior surface of the uterus and the anterior abdominal wall, which typically develops following a Caesarean section (CS). This condition is associated with infertility, pelvic pain, and an increased risk of complications in future CS procedures.

Furthermore, the presence of ventrofixation can elevate the risk of intraoperative complications during hysterectomy, such as vascular injury and bladder damage.

It is estimated that a uterine niche, a potential complication, occurs in 56% of women with a history of CS when examined via gel instillation sonography, often leading to post-menstrual spotting.[3] The debate surrounding surgical factors that affect the formation and severity of postoperative adhesions includes whether to use a single or double-layer closure of the uterus and whether to close the peritoneum.

A ventrofixed uterus can often be suspected in patients with a history of CS, based on specific clinical symptoms and ultrasonographic findings. Sheth et al, noted that the cervix is difficult to visualize, even with the use of a retractor or vulsellum to retract the anterior vaginal wall.[4,5] The uterus is often challenging to palpate due to the high positioning of the fundus and reduced mobility. Under anesthesia, a test involving cervix traction or insertion of a probe into the uterus to mobilize it backward may cause a "dimple" in the anterior abdominal wall, which is known as the Sheth cervico-fundal sign.[4]

Ultrasound findings described by Sheth et al, reveal that the cervix appears elongated and can be easily identified. Even if the bladder is full or overdistended, it does not appear between the fundus and the anterior abdominal wall. The uterus may exhibit retroflexion when the bladder is full, pushing the cervix, while the body of the uterus

remains immobile.[6] Additionally, ultrasound can detect a fat tissue layer, if present, between the lower boundary of the adhered uterus and the upper boundary of the bladder. This layer can be measured, which helps guide the dissection during surgery. Mobilizing the uterus with a vaginal probe often shows a negative sliding sign between the uterus and the anterior abdominal wall. These adhesions can be identified through high-resolution ultrasonography and functional MRI, which also help detect any limitations in organ movement due to the adhesions.[7] During surgery, the presence of a ventrofixed uterus can complicate the procedure, resulting in extended operating times and an increased risk of bladder injury.[8] To minimize the risks during surgery, certain techniques are recommended.

First, the placement of the Veres needle and/or the initial trocar should be appropriately chosen to avoid adhesions, and the uterine fundus should be positioned for optimal visualization at the beginning of the procedure. Typically, the fundus is located halfway between the umbilicus and the pubic symphysis. It is recommended to insert the trocar slightly higher, about 4 to 5 cm above the umbilicus or laterally on the left.

However, careful attention must be given to the positioning of the trocars, as once the uterus is freed from the abdominal wall and falls into the pelvic cavity, the trocars may be too high, which could make it difficult to reach the vaginal level, particularly when using instruments like needle holders. To enhance the visualization of the bladder's boundaries, some surgeons employ the cystosufflation technique, which involves insufflating CO2 into the bladder, or alternatively, they may fill the bladder with saline solution or saline mixed with methylene blue.

The use of methylene blue is particularly advantageous as it not only outlines the bladder but also allows for immediate identification of any injuries that occur. If the bladder needs to be dissected, it can be emptied to facilitate subsequent surgical steps, particularly the closure of the vagina.

Utilizing retroperitoneal spaces to separate the uterus from the abdominal wall is another approach. Retroperitoneal spaces are invaluable in challenging pelvic surgeries. In cases where the uterus is adhered to the anterior abdominal wall, the paravesical spaces are often accessible and can be used to perform the dissection from the lateral side toward the center. In areas where the uterus is strongly fixed to the abdominal wall, the surgeon can enter the retroperitoneal space of the abdominal wall for further dissection. It is crucial during this process to recognize that the fat belongs to the abdominal wall, which should guide the dissection while preserving the fat tissue above.

The ultrasound can help measure the distance between the upper edge of the bladder and the lower edge of the adhered uterus. A lateral approach is often employed to dissect the bladder. Once the paravesical spaces are cleared, accessing the uterine vessels usually becomes less challenging, and these vessels can be coagulated and cut. In cases where there are adhesions between the bladder and the cesarean scar, the surgeon can use a lateral approach to dissect the vesicovaginal space at a point where the bladder is no longer adhered to the uterus. There is typically an untouched anatomical area with alveolar tissue that belongs to the bladder. This area provides access to the vesicocervical fascia located over the vaginal fornix. It can also be identified by gently manipulating the vaginal fornices with swabs on forceps.

Dissection of the bladder should proceed from below, moving upwards, with assistance from a moderately filled bladder. The fibrosis between the bladder and the uterine wall can then be sharply divided. At the end of the procedure, it is essential to fill the bladder if there is any concern about potential bladder injury. If an injury is suspected, prompt recognition and repair are crucial, as early intervention offers an excellent prognosis.

CONCLUSION

TLH in ventrifixed uterus demands meticulous preoperative diagnosis through clinical examination and ultrasound, emphasizing the importance of skilled sonographers. TLH in ventrifixed uterus requires a clear understanding of scar-related complications, requiring tailored surgical techniques to enhance patient safety.

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