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Case Report

Advanced uterovaginal prolapse in the presence of dense ventral uterine fixation: highlighting the dominant role of pelvic floor support

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ABSTRACT

Uterovaginal prolapse is commonly attributed to multiparity and pelvic floor weakness, while dense anterior uterine fixation is generally presumed to limit uterine descent. We report a rare case of advanced uterovaginal prolapse occurring despite dense ventral uterine fixation. A 30-year-old multiparous woman presented with complaints of something protruding per vaginum for 1 year. Clinical examination revealed third-degree uterovaginal prolapse with associated anterior and posterior compartment defects. She was planned for laparoscopic uterine-preserving surgery. Intraoperatively, the uterus, along with both round ligaments, was found to be densely adherent to the anterior abdominal wall, consistent with ventral uterine fixation. Extensive adhesiolysis was required to restore uterine mobility, following which uterosacral ligament plication was performed. Due to distorted anterior anatomy, anterior compartment repair was completed vaginally. Postoperative recovery was uneventful with satisfactory anatomical correction. This case highlights that anterior uterine fixation does not necessarily prevent uterovaginal prolapse and emphasizes the dominant role of pelvic floor and apical support in maintaining uterine position.

Keywords: Pelvic organ prolapse, Ventral uterine fixation, Cystocele and rectocele, Pelvic floor, Apical support

INTRODUCTION

Uterovaginal prolapse is a common manifestation of pelvic floor dysfunction and is typically associated with multiparity, advancing age, and weakening of apical and pelvic floor support structures. The integrity of the uterosacral-cardinal ligament complex and pelvic floor musculature is considered fundamental to maintaining uterine position.¹ Anterior uterine attachments, including the round ligaments, are traditionally regarded as secondary stabilizers and are not thought to provide significant resistance to uterine descent.² Nevertheless, ventral uterine fixation – either surgically created or acquired following abdominal surgery – is often presumed to restrict uterine mobility and limit prolapse.³ Ventral suspension techniques have also been described as uterine-preserving surgical options for selected cases of prolapse.⁴

Reports of advanced uterovaginal prolapse occurring in the presence of dense ventral uterine fixation are rare. This case highlights an unusual clinical paradox and emphasizes the dominant role of pelvic floor and apical support in maintaining uterine position, even when strong anterior uterine fixation is present.

CASE REPORT

A 30-year-old multiparous woman presented with complaints of something protruding per vaginum for 1 year. She reported no associated urinary, bowel, or menstrual symptoms. Her menstrual cycles were regular, and there was no history of abnormal uterine bleeding or chronic pelvic pain. Her obstetric history revealed five pregnancies with four previous vaginal deliveries and one lower segment caesarean section performed three years

earlier. There was no history of any other pelvic or abdominal surgery, and she had no known chronic medical illnesses.

General and systemic examination was unremarkable. On pelvic examination, uterine descent with associated anterior and posterior vaginal wall prolapse was noted. The findings were consistent with clinically assessed third-degree uterovaginal prolapse with grade 2 cystocele, mild rectocele, and significant vaginal laxity. On POP-Q examination, findings were: Aa +1, Ba +2, C +2, Ap -2, Bp -1, and TVL 8-9 cm. The perineal body was deficient, measuring approximately 1.5 cm. In view of the patient's young age and desire for uterine preservation, a uterus-sparing surgical approach was planned. She was scheduled for laparoscopic uterosacral ligament plication with anterior and posterior compartment repair following routine preoperative evaluation and anesthetic clearance. The surgery was performed under general anesthesia. The patient was positioned in lithotomy. and pelvic examination findings were confirmed under anesthesia before starting laparoscopy. A four-port laparoscopic approach was used.

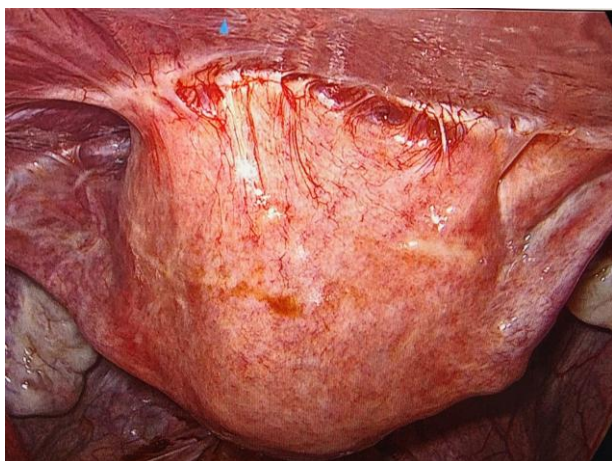


Figure 1: Laparoscopic intra-operative image showing – a uterus densely adherent to the anterior abdominal wall, with associated involvement of the round ligament – consistent with ventral fixation.

Intraoperatively, an unexpected finding of dense ventral uterine fixation was encountered. The uterus, along with both round ligaments, was found to be firmly adherent to the anterior abdominal wall. Despite this dense anterior fixation, the uterus remained significantly prolapsed. No additional pathology was identified. Careful and extensive adhesiolysis was performed to release the uterus and round ligaments from the anterior abdominal wall and restore uterine mobility. The bladder was found to be densely adherent to the lower uterine segment, resulting in loss of the normal vesicouterine plane. Careful adhesiolysis was performed to delineate the vesicouterine plane and safely separate the bladder from the uterus. The ureters were identified and noted to be laterally displaced, allowing safe dissection without the need for deliberate ureterolysis.

Following restoration of uterine mobility, bilateral uterosacral ligament plication was performed laparoscopically using non-absorbable sutures, incorporating the peritoneum over the pouch of Douglas to provide apical support. Due to persistent distortion of the anterior compartment anatomy, anterior vaginal wall repair was completed vaginally. Posterior compartment repair and perineorrhaphy were performed to address the rectocele and perineal body deficiency. Postoperative recovery was uneventful. The indwelling urinary catheter was removed after 36 hours, following which the patient voided spontaneously without difficulty. At follow-up one week after surgery, clinical examination revealed satisfactory anatomical correction with no evidence of uterine descent, cystocele, or rectocele.

DISCUSSION

Uterovaginal prolapse is primarily the result of failure of pelvic floor and apical support structures and is most commonly seen in multiparous women.⁵ According to the established levels of pelvic support, apical support provided by the uterosacral–cardinal ligament complex and pelvic floor musculature (Level I support) plays a dominant role in maintaining uterine position, whereas anterior attachments contribute mainly to positional support rather than true suspension.⁶⁻⁸ In the present case, the occurrence of advanced uterovaginal prolapse despite dense ventral uterine fixation represents an unusual clinical paradox. Intraoperatively, the uterus and both round ligaments were found to be firmly adherent to the anterior abdominal wall, yet significant uterine descent was present. This observation suggests that anterior uterine fixation alone does not prevent prolapse when the primary support mechanisms of the uterus are compromised.

Multiparity, marked vaginal laxity, and a deficient perineal body were prominent features in this patient, indicating significant pelvic floor weakness.⁹ These factors are likely to have played a dominant role in the development of prolapse, overriding any stabilizing effect provided by ventral uterine fixation.

This supports the concept that pelvic floor integrity and apical support are the principal determinants of uterine support, while anterior fixation cannot compensate for their failure.¹⁰ Ventral uterine suspension techniques have been described as uterine-preserving options in selected cases of prolapse.¹¹ However, the findings in this case raise important considerations regarding the protective role of ventral fixation alone, particularly in patients with advanced pelvic floor weakness. The coexistence of dense ventral uterine adhesions and significant uterovaginal prolapse highlights the need for a comprehensive approach to prolapse management that addresses apical support and pelvic floor defects rather than relying solely on anterior uterine anchoring.¹²

From a surgical perspective, this case also emphasizes the importance of intraoperative adaptability.¹³ Unexpected

anatomical findings, such as dense ventral uterine fixation, may necessitate modification of the planned surgical approach. In this patient, restoration of uterine mobility followed by apical suspension and compartment-specific vaginal repairs resulted in satisfactory anatomical correction. This case contributes to the limited literature on uterovaginal prolapse occurring in the presence of ventral uterine fixation and reinforces the central role of pelvic floor and apical support in maintaining uterine position.¹⁴

CONCLUSION

Uterovaginal prolapse can occur even in the presence of dense ventral uterine fixation, indicating that dense anterior uterine adhesions alone do not prevent uterine descent. Pelvic floor integrity and apical support are the primary determinants of uterovaginal support and play a dominant role in maintaining uterine position. Therefore, the presence of ventral uterine fixation should not lead to underestimation of prolapse severity, and definitive correction requires appropriate restoration of apical support.

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