Rectocele Complicating a Double Anterior Lumbar Interbody Fusion: A Case Report

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The advantages of using the anterior approach are as follows: its ability to restore foraminal height, local disc angle, and lumbar lordosis¹⁾, absence of neural retraction, and the sparing of paravertebral muscles. However, some complications associated with anterior lumbar interbody fusion (ALIF) have also been documented, and these are commonly visceral and vascular lesions. The rate of vascular complication is determined to be between 6.1% and 7.8% following ALIF^{2.3)}. Meanwhile, the rate of incidental peritoneal opening was found to be at 3.9%, 4.3% for infection, and 3.3% for other complications³⁾. We present here an unusual case of rectocele in a female patient who underwent a double ALIF, and we also try to explain possible alterations that could contribute to rectocele formation.

A 39-year-old woman, with gravida 3 para 2 and had a previous surgery for ectopic pregnancy, had initially underwent double ALIF with Sovereign cage device (Medtronic) by pararectus approach for L5-S1 spondylolisthesis and L4-L5 discopathy. Her previous complaints included refractory low back pain and bilateral leg pain. On postoperative day 5, the scores for low back pain and leg pain were both at 2 on a visual analog scale. The postoperative computed tomography (CT) scan has demonstrated good placement of the cages at both L4-L5 and L5-S1 (Fig. 1). Pelvispinal balance was also examined by EOS X-ray. The patient was then discharged home. However, she later complained of functional constipation associated with pelvic pressure and urinary leakage, and a physical examination revealed a prolapse in the posterior wall of the vagina two months after lumbar surgery. Dynamic pelvic magnetic resonance imaging (MRI) was obtained in restraint and thrust and revealed a rectocele associated with cystoptosis (Fig. 2). The patient was referred to a gastroenterologist and visceral surgeon for follow-up and management.

The normal position of the uterus, bladder, and rectum constitutes an interdependent system formed by the pelvic bones, muscles, and suspension elements such as ligaments (Fig. 3). Sphincteric and supportive systems in the female prevent incontinence and genital organ prolapse when abdominal pressure increases during daily activities⁴). The uterosacral ligaments connect the posterolateral aspect of the cervix to the second, third, and fourth sacral vertebrae⁵). The levator ani muscles provide a muscular shelf on which the pelvic organs are supported⁶).

Rectocele is defined as the bulging of the front wall of the rectum into the vagina due to the alteration of the system. The underlying causes remain undetermined. But, only the levator ani muscle avulsion has been associated with pelvic organ prolapse⁷.

The occurrence of rectal prolapse, in this case, can be explained as follows. First, denervation of the pelvic floor may have occurred due to excessive traction on the viscera, causing damage into the sacral roots. The innervation of the pelvic floor comes from the second, third, and fourth anterior sacral roots⁸.

Second, during the fat dissection of Bogros space, the rectosigmoidal muscle of Nelaton, which is a rectosigmoid sphincter at S2-S3, may have been sectioned. This muscle participates in attaching the upper rectum.

Third, dysfunction of the abdominopelvic viscera can oc-

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Figure 1. Postoperative sagittal CT view (left) and coronal CT view (right) showing a double anterior interbody fusion with cages at L4-L5 and L5-S1.



Figure 2. Postoperative dynamic pelvic MRI: midsagittal T2-weighted image in restraint (left) and in thrust (right) showing a rectocele with cystoptosis.



Figure 3. Illustration showing female pelvic ligaments (lateral view).

cur when the superior hypogastric plexus is damaged during an anterior approach to the lumbosacral spine⁹⁾. Mustain et al.¹⁰⁾ described that pelvic surgery and conditions that chronically increase intra-abdominal pressure such as constipation can contribute to rectocele development. Lastly, the uterosacral ligaments of the cervix seem to reinforce not only fixation of the genital system but also of the pelvic rectum.

Therefore, it is important to report this unusual complication immediately to the attention of spine surgeons. Few things should be taken into consideration to avoid this disadvantage. For one, reducing the time of surgery may lessen the time of pressure effects on the viscera. In addition, prevention of postoperative constipation with less use of narcotic substances in patients with a history of bowel dysfunction is also seen to prevent pelvic organ prolapse.

Conflicts of Interest: The authors declare that there are no relevant conflicts of interest.

Ethical Approval: This study does not require any approval from the relevant institutional ethical review board because it is not a clinical and biomedical research involving human subjects.

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Informed Consent: Informed consent was obtained in this study.

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