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The simplified version of laparoscopic lateral suspension: BalsAksin technique

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Abstract

Pelvic organ prolapse (POP) is a common issue affecting women. The development of minimally invasive surgical techniques has introduced a new era in POP treatment, with laparoscopic methods gaining popularity. This abstract highlights the simplified technique as an efficient alternative. BalsAksin technique aims to treat POP with a minimally invasive approach, eliminating the need for laparoscopic suturing. It provides a faster and more effective surgical option. In this technique, vaginally, the vesicouterine gap was opened. The mesh was fixed to the cervico-isthmic area vaginally, and the mesh arms were sent into the abdomen; then, the mesh arms were removed laparoscopically by pulling the bilateral trocar ports. The uterine position is adjusted vaginally. In summary, the BalsAksin technique offers a simplified alternative to laparoscopic suturing in pelvic organ prolapse surgery. Its ability to eliminate the need for laparoscopic suturing while reducing operation times makes it an appealing option for surgeons, ultimately improving patient care and surgical outcomes. In addition, the sending of mesh arms to the abdominal cavity through trocar ports and the strategic placement of the ports have increased the simplicity and effectiveness of the method.

Keywords: Uterine prolapse, laparoscopic lateral suspension, pelvic organ prolapse, vaginal approach, BalsAksin technique

Introduction

Pelvic organ prolapse (POP) is a widespread health issue worldwide, resulting from the displacement of pelvic organs from their normal anatomical positions (1). Epidemiological data indicate an increased prevalence of POP, especially among middle-aged and older women (2). Hormonal changes, aging, genetic factors, and multiple childbirths are believed to contribute to the development of this condition. POP can significantly affect the quality of life in women, underscoring the importance of developing and disseminating treatment options (3).

In recent years, the advancement of minimally invasive surgical techniques has brought about a significant transformation in the management of pelvic organ prolapse. Laparoscopic surgery has offered patients a less invasive option, reducing recovery times and lowering postoperative complications (4). These advancements have notably boosted the popularity of techniques such as laparoscopic lateral suspension, which offers an effective solution for supporting pelvic organs and enhancing patients' quality of life (5).

Laparoscopic surgery may pose challenges, such as the difficulty of suturing and a steep learning curve (6). However, for novice practitioners, vaginal surgical approaches can facilitate the learning process. This simplified technique, which applies laparoscopic lateral suspension with suturing through the vaginal route, aims to overcome these challenges and harness the advantages of laparoscopic surgery. In laparoscopic surgery, mesh integration with port placement provides a great advantage in terms of shortening the learning curve and reducing surgical time. The technique used in this study aims to optimize this integration.

Materials and Methods

A 37-year-old married woman with a history of three pregnancies and three deliveries presented to our hospital with complaints of third-degree pelvic organ prolapse (POP).

In December 2023, she underwent a simplified procedure. The procedural steps were as follows: Initially, the bladder was separated vaginally from the cervix, and an isthmic region was created before entering the abdominal cavity. Subsequently, a V-shaped polypropylene mesh measuring 25 cm in length with arms was prepared, with a base of 5*5 cm. The mesh base was sutured to the cervix using a 2-0 prolene suture. After securing the mesh to the cervix, a vaginal tampon was placed to prevent gas leakage, and the mesh arms were pushed from vesicouterin opening into the abdominal cavity, initiating laparoscopy.

A 10 mm infra-umbilical port was initially placed. Both the mesh arms were pulled from the trocar site, and the trocar placement was done bilaterally from the safe anatomic area 4 cm above and 2 cm medial to both spina iliaca anterior superior. No additional skin incision was made. A single 5 mm ipsilateral port was placed on the right side. After the incision in the vagina was closed, the cervix was adjusted to the level of the spina ischiadica by pulling the meshes on the sides. Passing the mesh arms through the trocar ports in the safe zone close to the anterior superior spina iliaca provides anatomical integrity and reduces surgical trauma without the need for additional skin incisions.

Written informed consent was obtained from the patient to publish these accompanying images. The stages of the operation technique are shown in Figure 1. This case report schematically illustrated in Figure 2.

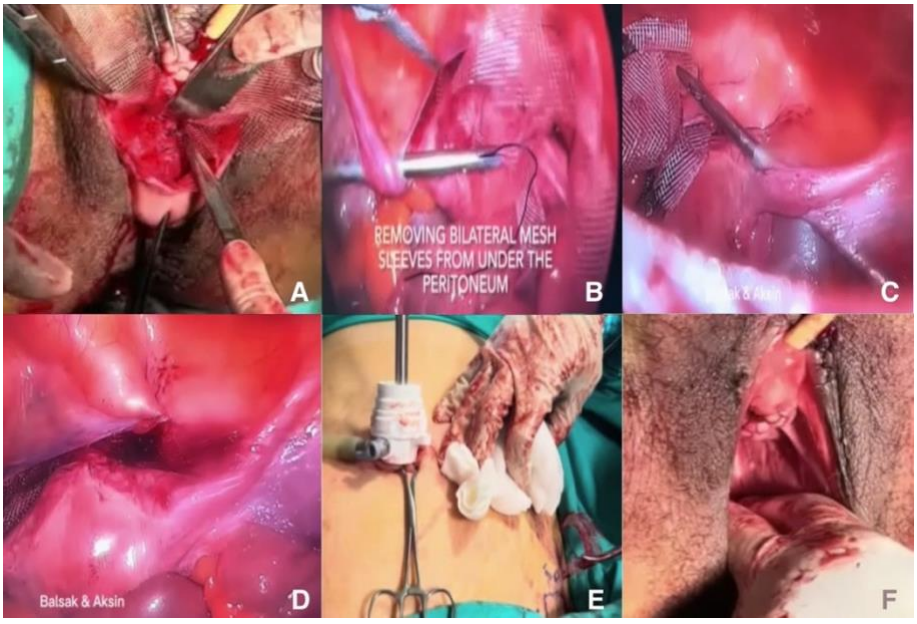

Figure 1. Operation Pictures: **A)** Opening of the vesicouterine area and Fixation of the mesh, **B)** Sending the mesh vaginally to the abdomen and then Pulling of the arms of the mesh along the left subperitoneal tunnel, **C)** Pulling of the arms of the mesh along the right subperitoneal tunnel, **D)** The final state of the uterus, **E)** Picture of the mesh removed from the inserted trocar (No additional incision), **F)** Vaginal repair and the cervix went back to the final stat.

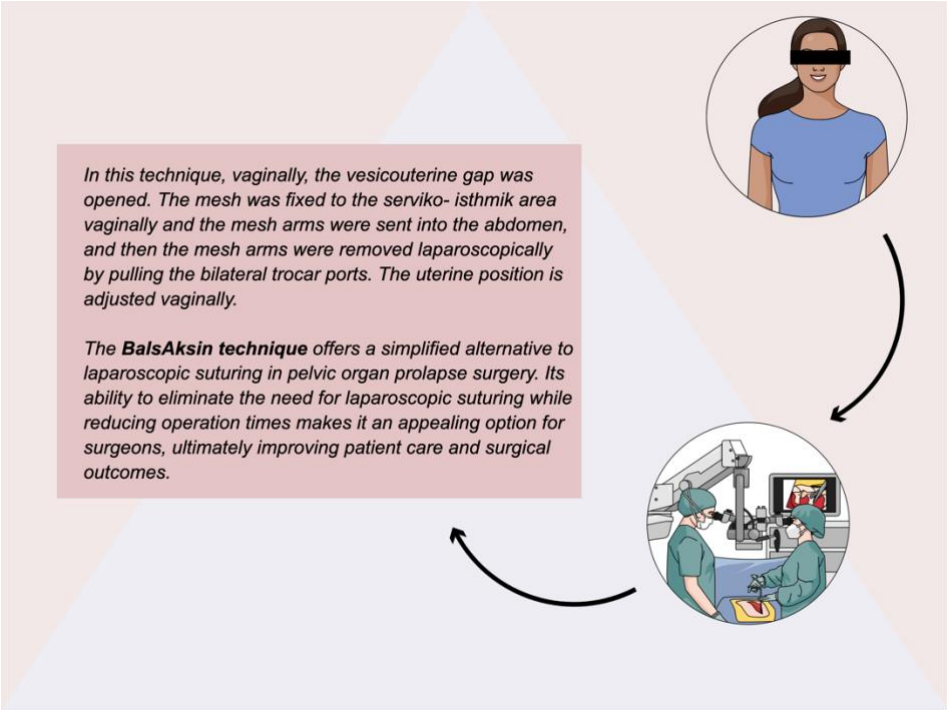

Figure 2. Graphical illustration of the study.

Results

The patient was 37 years old with a history of 3 pregnancies and three deliveries, and her POP-Q stage was classified as Stage 3.

The duration of the operation was 40 minutes, and her hospital stay lasted for 22 hours. Preoperatively, her hemoglobin level was 12.8 g/dL, while it measured 11.6 g/dL postoperatively. The estimated blood loss during the procedure was 350 cc, and no complications were encountered.

Discussion

Abdominal surgery has gradually given way to minimally invasive techniques over time, resulting in shorter hospital stays and reduced surgical trauma (7). These developments have notably increased the popularity of techniques like laparoscopic lateral suspension (5). However, more minimally invasive approaches, such as robotic procedures, have demonstrated increased operation times and costs (8). Conversely, vaginal approaches are preferred due to similar hospital stay durations and lower costs compared to laparoscopic surgery (9).

A review study comparing various minimally invasive techniques in prolapse surgery found that average operation times were generally over 100 minutes, with the shortest recorded laparoscopic pectopexy procedures taking 43 and 75 minutes. In contrast, this simplified procedure had a significantly shorter operation time of 40 minutes, surpassing all other procedures in the literature.

The integration of port placement with mesh increases the security and effectiveness of the method. The fact that additional skin incisions become unnecessary accelerates the patient's healing process by reducing surgical trauma. This approach can shorten the learning curve, especially in minimally invasive POP surgery, and has the potential for widespread use.

Conclusion

The BalsAksin technique has the ability to facilitate the surgical procedure and significantly reduce the duration of the operation compared to the classical method. This reduction can be regarded as a significant advantage for both surgeons and patients, potentially decreasing postoperative complication risks by shortening anesthesia exposure.

In addition, port placement and mesh integration have increased the effectiveness of the surgical procedure and optimized all the advantages of the minimally invasive approach.

Disclosures

Informed Consent: Written informed consent was obtained from the patient.

Peer-review: Externally peer-reviewed.

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