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Trauma and reconstruction

Robotic sacrocolpopexy with medial umbilical ligament autologous graft to treat neovaginal prolapse in a transgender woman

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ABSTRACT

Vaginoplasty is commonly performed to treat gender dysphoria in transgender women. Neovaginal prolapse is a late complication of vaginoplasty, and there is minimal literature regarding its surgical management. We report a case of robotic sacrocolpopexy using medial umbilical ligament autologous graft to treat neovaginal prolapse in a transgender woman, which is a novel technique that has not been previously described. The procedure resulted in a good postoperative outcome for the patient. The innovative use of medial umbilical ligament autologous graft enabled the patient to benefit from a fully minimally invasive procedure whilst avoiding the risks associated with synthetic mesh.

1. Introduction

Genital reconstructive surgery (GRS) is an important aspect in the management of gender dysphoria for some transgender women. One of the commonest procedures for feminising GRS is vaginoplasty, which involves the creation of a neovaginal cavity, bilateral orchidectomy, penectomy, shortening of the urethra, and construction of a neoclitoris and labia.

Neovaginal prolapse is a late complication of vaginoplasty, with an incidence of 2.4 %–2.85 %.[1] There is minimal literature regarding the surgical management of neovaginal prolapse in transgender women, with fewer than 10 case reports in total.

The use of synthetic mesh in the surgical management of pelvic organ prolapse (POP) has been scrutinised in recent years due to complications of mesh erosion, such as chronic pain and dyspareunia. In the United Kingdom, the use of transvaginal mesh for POP procedures was prohibited in 2020. As a result, there has been an urgency to develop surgical techniques to treat POP that do not involve mesh.

We report a case of robotic sacrocolpopexy using medial umbilical ligament autologous graft to treat recurrent neovaginal prolapse in a transgender woman, which is a novel technique that has not been previously described.

2. Case presentation

A transgender woman in her 50s presented to our GRS clinic with a recurrent prolapse of the neovagina. She reported that the prolapse was causing her pain, and she had difficulty with neovaginal dilatation.

She had undergone vaginoplasty three years previously. She had presented with symptoms of neovaginal prolapse two years following the vaginoplasty and at that time underwent a vaginal repair of prolapse without mesh; however, she re-presented with recurrent prolapse one year later.

She had no other significant past medical history, and her regular medications consisted of hormone replacement therapy and vitamin supplements only.

On examination, there was visible prolapse of the neovagina to the level of the introitus without straining. The management options were discussed with the patient in clinic and, following discussion of the risks and benefits, the patient opted to proceed with sacrocolpopexy.

2.1. Preparation

The procedure was performed under general anaesthesia with intravenous antibiotics administered at induction. A urethral catheter was placed. Pneumoperitoneum was established, and a five-port approach was used, as is used for a robotic transperitoneal cystectomy.

Abbreviations: GRS, genital reconstructive surgery; POP, pelvic organ prolapse.

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2.2. Operative steps

The parietal peritoneum covering the neovagina was opened. The peritoneum was mobilised over the anterior, posterior, and lateral vaginal walls as close to the perineum as possible. The space between the distal end of the neovagina and the sacral promontory was measured.

The medial umbilical ligaments were identified and dissected out bilaterally. The ligaments were removed via the port, and a Y-shaped graft was created on the bench.

The peritoneum was opened over the right side of the sacral promontory, ensuring to note the position of the right common iliac artery, the right internal iliac artery, the right ureter, and the rectum. A tunnel was made under the peritoneum over the sacral promontory to the neovagina.

The Y-shaped graft was re-delivered into the abdomen and passed retrogradely under the tunnel. The posterior arm of the graft was sutured to the posterior vaginal wall starting as distally as possible. The anterior arm of the graft was sutured to the anterior vaginal wall starting as distally as possible. The single arm of the graft was sutured to the sacral promontory and the excess graft excised.

2.3. Closure

The openings in the peritoneum over the neovagina and the sacral promontory were closed. The peritoneum on the anterior abdominal wall was closed. The port sites were closed.

2.4. Outcome and follow up

Operating time was 214 minutes and blood loss was minimal. The urinary catheter was removed on postoperative day one; however, she experienced urinary retention and was catheterised. The postoperative course was otherwise uneventful, and she was discharged on postoperative day one. She underwent a successful trial without catheter one week postoperatively.

At a follow up appointment four weeks postoperatively, she had a healthy appearance of the neovagina and no evidence of postoperative complication or recurrent prolapse. At six month follow up she was satisfied with the outcome of the procedure, and she will be followed up again at one year.

3. Discussion

Based on a PUBMED search from 1994 to 2022, this is, to our knowledge, the first reported case of robotic sacrocolpopexy using medial umbilical ligament autologous graft to treat neovaginal prolapse in a transgender woman. There are several novel aspects arising from this case, including: the management of complications of GRS, the use of medial umbilical ligament autologous graft, and the robotic approach.

There is limited literature on the surgical management of neovaginal prolapse in transgender women, and the existing literature consists of case reports only. Roslan describes the case of a laparoscopic sacrocolpopexy using a synthetic mesh in a transgender woman with good outcomes.[2] Condous et al. describe a laparoscopic total pelvic floor repair for a transgender female patient.[3] Loverro et al. and Frederick and Leach describe case reports of open abdominal sacrocolpopexy for this condition in transgender women using synthetic mesh.[4]

Following the pelvic mesh scandal, there has been an emerging practice of using autologous tissue grafts in place of mesh for sacrocolpopexy. The commonest autologous graft described for sacrocolpopexy in cisgender women is rectus fascia.[5] However, the harvesting of rectus fascia requires an incision on the abdomen, therefore, this technique has only been described in open abdominal sacrocolpopexy. As the medial umbilical ligament is harvested internally, our technique enabled a fully minimally invasive approach for a robotic sacrocolpopexy with autologous graft, which is a procedure that has not been previously reported.

4. Conclusion

With minimal evidence to support best practice in the management of neovaginal prolapse in transgender women, our case report indicates that robotic sacrocolpopexy with medial umbilical ligament autologous graft appears safe and effective in this case of neovaginal prolapse. This innovative approach enabled the patient to benefit from a fully minimally invasive procedure whilst avoiding the risks associated with synthetic mesh.

Consent

Written informed consent was obtained from the patient.

Declarations of competing interest

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.eucr.2023.102580.

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