

## LAPAROSCOPIC SACROCOLPOPEXY IN OVINE MODEL

### Introduction

Nearly forty per cent of the postmenopausal women will suffer some type of genital prolapse (1). According to the literature, abdominal sacrocolpopexy is the most effective method for the treatment of this pathology. However, laparoscopic colposacropexy is gradually gaining more interest, primarily due to their similar anatomical and functional results, less postoperative pain and a shorter hospital stay (2). On the other hand, the main drawback of the laparoscopic colposacropexy lies in its extended learning curve (3). Thus, the search for an effective method to reduce the learning curve and the variability of this technique among the different surgical teams is warranted.

### Design

The objective of this study was to develop an animal model for training on laparoscopic sacrocolpopexy, and thus to reduce the learning curve. For this purpose herein we present the main surgical steps of the laparoscopic sacrocolpopexy technique in ovine model.

### Results

The technique was performed uneventfully in the sheep. Two separate macroporous monofilament meshes were used. They were interposed between the vagina and the bladder anteriorly and the rectum posteriorly with sutures placed using an intracorporeal suture. A suture was pre-tied in each of the meshes, before they were introduced into the abdomen. The pneumoperitoneum was established with a Veress needle. During the surgery, the surgeon was on the left side of the patient and the assistant on the right. In order to facilitate the dissection of the rectovaginal and vesicovaginal spaces, a 32mm width ribbon retractor was introduced into the vagina. The second assistant holds the vaginal probe. The first trocar (10-mm), for the optic, was situated infraumbilical. A 10-mm trocar, for the surgeon's right hand, was situated in the midline and 10cm caudal to the first trocar. Two more trocars were inserted bilaterally, 10 cm lateral and caudal to the level of the first trocar. Initially, a subtotal ovariectomy was performed in order to prevent the uterus to intrude and to hinder the placement of the mesh. In addition, two retracting sutures were placed through the colon and the cervical stump, and brought out through the skin in the left lower quadrant and the suprapubic midline area, respectively. A peritoneal incision was made over the sacral promontory and the incision was extended caudally to the right parasigmoidal and para-rectal gutter. The dissection was performed by using monopolar scissors and atraumatic forceps. Once both levator ani muscles were identified, the fixation of the posterior mesh was performed. The posterior mesh was fixed by five non-absorbable sutures. The first sutures were placed distally over both levator ani muscles. Next, the mesh was attached laterally to each ipsilateral uterosacral ligaments and proximally over the dorsal aspect of the cervical stump. The retracting suture of the uterus was then removed, the peritoneum overlying the vaginal was incised, and the plane between the bladder and vagina was dissected. The dissection was continued as far as the bladder trigone. The anterior mesh was fixed over the anterior vaginal wall with four sutures: one at the level of the bladder trigone, two at each lateral aspects of the vagina and one at the vaginal vault. The tail of both meshes was sutured with an extracorporeal sliding suture to the sacral promontory using nonabsorbable sutures. Finally, the peritoneum was closed with an absorbable multifilament suture in a running fashion to completely cover the mesh.

### Conclusion

We consider the ovine model suitable for training on laparoscopic sacrocolpopexy. However, further studies of validation need to be done to objectively determine its utility.

### References

1. Barber MD, Maher C (2013) Epidemiology and outcome assessment of pelvic organ prolapse. *Int Urogynecol J* 24:1783–1790
2. De Gouveia De Sa M, Claydon LS, Whitlow B, Dolcet Artahona MA. Laparoscopic versus open sacrocolpopexy for treatment of prolapse of the apical segment of the vagina: a systematic review and meta-analysis. *Int Urogynecol J*. 2016 Jan;27(1):3-17.
3. Guillonnet B, Abbou CC, Doublet JD, et al. Proposal for a "European scoring system for laparoscopic operations in urology". *Eur Urol* 2001;40(1):2–6.

### Disclosures

**Funding:** The authors have nothing to disclose **Clinical Trial:** No **Subjects:** ANIMAL **Species:** Sheep **Ethics Committee:** Minimally Invasive Surgery Centre Ethical Committee