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Temporary Ligature of the Uterine Artery "Shoelace Knot"

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Study Objective:

To demonstrate the technique of temporary ligature of the uterine artery applied to minimally invasive uterine procedures to reduce blood loss. Design:

Step-by-step instructional video demonstration of surgical technique

Setting:

Department of Gynecology and minimally invasive unit Hospital Vita Batel Curitiba, Paraná, Brazil.

Interventions

The main steps of the uterine artery ligation by the posterior approach at laparoscopy are described in detail.

Case Report

A 35-year-old woman, G2/P0, with a history of infertility. She had complaints of dysmenorrhea, dyspareunia, and dyschezia, desiring pregnancy. The ultrasonography exam shows multiple myomas FIGO 3-6.

The patient underwent a laparoscopic myomectomy under general endotracheal anesthesia. Pneumoperitoneum was achieved by entry of a Veress needle into the umbilicus.

The laparoscopic trocars were placed according to the French technique initially as follows: a 10-mm camera port in the umbilicus, a 5-mm port in the right anterior superior iliac spine, a 5-mm suprapubic port, and a trocar. 5 mm in the left anterior superior iliac spine.

Posterior uterine artery ligation approach:

Step 1: Identification of anatomical landmarks (pelvic wall and the ureter attached to the peritoneum of the ovarian fossa).

Step 2: Opening of posterior peritoneum should be made medially to the infundibulo pelvic ligament, as the

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assistant grasps the infundibulo pelvic ligament creating a peritoneal tent.

Step 3: Identification of the ureter by its peristalsis and dissection, having access to the lateral pararectal space (Latzko space)

Step 4: Identification of the uterine artery, the first medial branch of the anterior division of the internal iliac.

Step 5: Blunt dissection around the uterine artery and ligation. The temporary occlusion is performed with 2-0 polyester suture with a double thread loop creating a shoelace knot (1,2). Both uterine arteries were ligated with the technique described. The posterior approach, just above the ureter, is indicated for myomectomy.

Myomectomy of multiple fibroids was completed and the uterine incision was sutured in two layers with polydioxanone sutures. Once the suturing was carried out, the knot was untied by pulling one end of the thread to restore the blood supply to the uterus. The intraoperative blood loss was 40 ml and the total time of the operation was 120 minutes.

Discussion

As previously described by Pisat and Desai et al temporary ligation of the uterine arteries at the time of myomectomy is a useful technique to minimize intraoperative blood loss and blood transfusion in patients who wish to preserve fertility (1,2).

Conclusion

The technique of temporary uterine artery ligation with a shoemaker's knot is a simple, reproducible, economical, and accessible procedure for the minimally invasive surgeon with knowledge of the anatomy being mandatory.

Standardization of the technique steps may help reduce the laparoscopic learning curve.

Key words: Laparoscopy, Myomectomy, Uterine artery ligation

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