Gore-Tex mesh pelvic occlusion and secondary colpopexy: A new surgical technique for posthysterectomy vaginal vault prolapse

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Abstract

Objective: This article presents and discusses a new surgical abdominal technique for the treatment of posthysterectomy vaginal vault prolapse.

Method: It provides support of the peritoneal surface of the pelvic floor by means of a Gore-Tex mesh, which closes this space. The vaginal vault is fixed to the centre of the mesh.

Study design: Descriptive study.

Results: Sixteen patients with vaginal vault prolapse were operated on and postoperative follow-up time ranged from 16 to 46 months. There was only one case in which the mesh had to be removed due to infection and posterior erosion of the vaginal wall, and no cases of recurrent vaginal vault prolapse.

Conclusion: A Gore-Tex mesh, placed at the top of the vaginal vault and extending across the pelvic floor, can effectively treat posthysterectomy vault prolapse.

Keywords: Vaginal vault prolapse; Pelvic occlusion; Gore-Tex mesh

1. Introduction

Massive vaginal vault prolapse (VVP) may occur secondary to abdominal and, more frequently, vaginal hysterectomy. At present, the surgical treatment of VVP can be performed using either the vaginal [1] or the abdominal approach [2,3]. Laparoscopy has also been proposed [4]. In order to obtain a vaginal fixation to pelvic wall tissues without tension, autologous [5] or prosthetic materials like Gore-Tex [6], Mersilene [7], Prolene [8], etc., have been used. All these operative procedures have the disadvantage of a relatively high rate of recurrence [9] and of long-term complications post-surgery such as dyspareunia [10].

The aim of the present report is to describe a new colpopexy technique using a synthetic mesh, which produced excellent results with very few complications.

We believe that VVP behaves in a similar fashion to postlaparotomy hernia (a procedure in which microperforated Gore-Tex DualMesh is used), and is consequently treated accordingly.

2. Materials

The colpopexy was performed on 16 unselected patients who had already undergone a total abdominal hysterectomy (seven cases) or a vaginal hysterectomy (nine cases) and had experienced a VVP, between December 1999 and March 2004. All cases had total VVP and were staged as POP-Q 4 [11]. In three cases, the patients had had previous unsuccessful surgery using other types of technique (sacral colpopexy in two cases, vaginal cleisis in one case). The time elapsed between the previous hysterectomy and the surgical Gore-Tex mesh pelvic occlusion ranged from 6 months to 15 years. The age range was 36–82 years (average...
58.5 years). Two patients had had no sexual intercourse. This study was approved by the Institutional Ethics Committee and performed at the San Cecilio University Hospital, Granada, Spain. All patients gave informed consent.

3. Operative procedure

The antimicrobial Gore-Tex DualMesh® (Gore, Flagstaff, AZ, USA) is previously trimmed into a semi-circular shape in order to accommodate the rectum (Fig. 1).

The abdomen is opened through a hypogastric laparotomy to access the peritoneal cavity. The vaginal vault peritoneum is then pulled back, elevating the vault from below with a sponge on a ring forceps. Two non-absorbable monofilament number 0 Gore-Tex sutures are placed through each lateral fornix of the vault of the vaginal wall, avoiding the vaginal mucosa, and then threaded through the central part of the mesh, without making a knot.

With the same type of suture, the mesh is then fixed to the pelvic peritoneum by means of three running sutures: two lateral ones from the mesorectum to the anterior wall at the middle line behind the bladder, following the ileopectineal and arcuate lines, and the third suture closes the hiatus between the mesh and the anterior wall of the rectum. Finally, the other two sutures of the wall of the vaginal vault are tied to the mesh (Fig. 2).

4. Results

Total operating times ranged from 40 to 90 min (average 50 min). No complications occurred during the operation. All patients had prophylactic antibiotic and antithrombotic therapy.

Mean follow-up after surgery was between 16 and 46 months. Subsequent clinical examinations, which were carried out by a gynaecologist who had not performed the operation, checked for the persistence of an elevated vaginal vault (cases were staged as POP-Q 0). Preoperative symptoms such as chronic pelvic pain or dyspareunia had disappeared. All patients answered a sexual activity questionnaire, which had a favourable response in all except the two patients who had not had sexual activity.

Only one patient had vaginal apex dehiscence with erosion, and a bacterial culture revealed a *Proteus mirabilis* infection. The mesh was easily removed through the re-laparotomy, but without recurrence of VVP.

5. Comment

Massive vaginal prolapse following hysterectomy has required various surgical techniques [1–4]. Their aim is to reposition the prolapsed vault, which must be attached to a solid pelvic structure such as a bone or ligament.

This new surgical technique uses the prosthetic porous Gore-Tex mesh, introducing it into the pelvis in an intraperitoneal position, which strengthens the pelvic diaphragm; this had not been previously achieved by any other technique. Intrapерitoneal Gore-Tex mesh has been extensively used with success in the treatment of abdominal hernia [12] without significant complications such as infections or erosion.

This new technique has two main objectives: to restore the optimal vaginal function and anatomy and to prevent prolapse recurrence.
Postoperatively, the vagina remains fixed in a medial position within the pelvis and is not restricted by fixation to pelvic structures, allowing it to retain the normal elasticity necessary for coital activity.

To minimize recurrence, the mesh is previously trimmed in order to adapt to the shape of peritoneal pelvic floor and consequently reinforces this structure and relieves it of the pressure exerted from abdominal viscera. Complications are minimal and in only one case did the mesh have to be removed due to secondary infection. This case was chronologically the second performed in this series and was possibly due to perforation of the vaginal cavity. We have had no further cases of mesh infection. There were no recurrent VVPs in any of the 16 patients.

We believe that this technique is easy to perform, is cost effective, and produces excellent results.

References


