

THE PORCINE SMALL INTESTINAL SUBMUCOSA IN THE TREATMENT OF STRESS URINARY INCONTINENCE. RESULTS IN FIFTY CONSECUTIVE PATIENTS

Aims of Study

At present, the SIS is used for the correction, reinforcement and substitution of soft tissue as well as in urological, gynecological and gastroenterological surgeries. Preclinical tests have revealed biocompatible characteristics of the host and the absence of local and systemic allergic reactions¹. Recently, it was used as a suburethral support in a pilot study with a short follow up. All the cases were cured without any significant complications². In this study, we report on the early outcomes of the use of SIS for treatment of SUI.

Methods

From March 2000 to September 2001, 50 women with stress urinary incontinence underwent the pubovaginal sling surgical procedure using SIS. Their mean age was 52 years (ranging from 30 years to 77 years) and 64% had previously undergone surgeries for correcting incontinence. The most common procedure used was the Kelly-Kennedy procedure (78% of the cases). The clinical exam revealed that 44% of the women had some degree of cystocele (varying between degree I and II). The urodynamic examination showed the presence of bladder neck hypermobility in 46% of the patients with the mean Valsalva leak point pressure VLPP - 98cm H₂O (varying between 95 and 115 cm H₂O) and 54% of the women presented 57cm H₂O VLPP (varying between 38 cm and 90 cm H₂O) indicating intrinsic sphincteric deficiency². The material was used in a multi-layered sling that was 2X10 cm in size and 0.4 mm thick. The biomaterial was conserved in a dehydrated state at room temperature. Prior to implantation, it was soaked in an antibiotic solution to regain its natural properties of elasticity and tensile strength.

The procedure was performed under a spinal anesthesia. After antisepsis, an inverted U incision was made in the vaginal wall. This incision began 1 cm below the external urethral meatus and extended up to the bladder neck, which was identified with a number 18 Foley's catheter that had been previously introduced in the bladder. The dissection was performed, with a pair of scissors, lateral to the ascending ischium after which the endopelvic fascia was perforated to reach the Retzius space. Care was taken to place the scissors at a tangent to the ischium and pointing towards the patient's homolateral shoulder. Any bladder neck and urethral adhesences to the vaginal wall were removed. The collagen sling, which was about 10cm long and 2cm wide, was soaked in a mixture of 240 mg of gentamicin with 50 ml of saline solution. The antibiotic solution hydrated the sling, which regained its flexibility and tensile strength. It also prevented contamination and infection of the biological graft. The sling was sutured at its extremities with propylene and with a Stamey needle introduced into the suprapubic region and over the pubic periosteum up to the vaginal incision. The maneuver was repeated on the other side as well. The vaginal incision was sutured with 3.0 catgut and the Foley intravesical catheter that was introduced via the urethra was kept for 24 hours. The patients returned every month to the outpatient unit for clinical assessment and were asked to report on spontaneous miction, involuntary urination, irritative bladder symptoms, suprapubic pain and vaginal pain.

Results

The mean follow up was 13 months (range 2 to 18 months). Of the 50 patients, 46 (92%) were cured of stress incontinence and two reported significant improvement. Postoperative urinary retention was observed in five patients (10 %). Neither urinary nor wound infection was detected, and no patient developed postoperative urinary irritative symptoms. There was no evidence of local or systemic reaction to the material in any of the patients.

Conclusions

SIS is a simple, safe and effective, for sling procedures. It can be an attractive alternative for the surgical management of female urinary stress incontinence, should these good initial results prove to be long lasting.

References

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