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A COMPARISON OF TENSION-FREE VAGINAL MESH (TVM) TECHNIQUE VERSUS SITE-SPECIFIC REPAIRS FOR PELVIC ORGAN PROLAPSE PATIENTS

Hypothesis / aims of study
The tension-free vaginal mesh (TVM) technique is developed as a minimally invasive surgery by the TVM group [1]. This method provides total pelvic floor repair using non-absorbable prolene soft mesh (Gynemesh®) implant. The aim of our study was to evaluate retrospectively effectiveness and safety of this technique in comparison to site-specific repair without use of synthetic mesh.
Study design, materials and methods
Sixty-two female patients with stage more than 2 were enrolled. First 12 patients underwent the site-specific repair using a combination of procedures including the transvaginal hysterectomy, the McCall culdoplasty, the paravaginal and central defect repairs, the posterior wall repair. Subsequent 50 patients underwent the TVM technique with Gynemesh®. In TVM technique [1], the anterior compartment repair used anterior mesh anchored transversally between arcus tendineus fasciae pelvis with two arms each side through obturator foramen. The posterior compartment repair used posterior mesh anchored transversally between sacrospinal ligaments. In contrast to site-specific repair group, the transvaginal hysterectomy and the resection of the vaginal wall were not performed in the TVM group. Patients were evaluated by questionnaires (IPSS-QOL, ICIQ-SF) and clinical examination of vaginal profile and uroflowmetry before and 3 months after the surgery. The Baden-Walker classification was used for the examination of vaginal profile. Recurrence was identified as grade III prolapse or greater. All operations were performed by the same surgeon.
Results
The mean age in TVM and site-specific groups was 67.3 and 70.4 years, respectively. Follow up ranged from 9 to 16 months in the site-specific repair group and from 9 to 3 months in the TVM group. The mean operation time in the TVM group was 72 minutes (range, 40-120 minutes) compared with 165 minutes (range, 120-188 minutes) in the site-specific repair group ($P < 0.01$). Estimated blood loss was significantly lower in the TVM group (median, 50 ml) than in the site specific group (median, 280 mL) ($P < 0.01$). No major intraoperative complications were observed in either group. No patients had a recurrence after surgery in either group. In TVM group, 6 (12.0%) of the 50 patients revealed vaginal erosion. These patients were managed successfully with conservative treatment such as oral administration of estriol (1mg). No patients with mesh erosion require surgical intervention. In these patients with mesh erosion, the erosion site was localized in the proximal edge of the anterior vaginal incision. All erosion were < 2 x 2 cm. No symptomatic complaints were observed. No patients revealed vaginal erosion in site-specific group. There was a statistically significant improvement in all stages of prolapse regardless of method. However, the mean total vaginal length was significantly shorter postoperatively in the site-specific group than in the TVM group ($P<0.01$). In both groups, quality of life and storage and voiding symptom improved significantly after the procedures. However, the improvement of storage symptoms and the Qmax tended to be greater in the TVM group than in the site-specific group. No persistent postoperative pain was reported by the patients regardless of method.
Interpretation of results
Considering operation time and estimated blood loss, the TVM technique was less invasive procedure than the sites-specific repair. Both methods provided a satisfactory anatomical correction of POP during short observation period. Since the site-specific group underwent vaginal hysterectomy, the total vaginal length was significantly shorter than that in TVM group. It is speculated that anterior colporrhaphy with the resection of vaginal wall might affect storage and voiding function. The site of mesh erosion was the proximal edge of the vaginal incision, which was agreement with a previous study [2]. Since no symptom and infection were observed in the patients with mesh erosion, it could be managed by conservative treatment.
Concluding message
Although this study revealed that both methods were useful for the anatomical correction of POP during short observation period, the TVM technique may be more safety option for surgical correction of POP. However, it should be considered the risk of vaginal mesh erosion. Since the site and the size of erosion were similar, it is important to examine the pathophysiology of mesh erosion from the anatomical view point.
References
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