

## TWO YEARS RESULTS OF A NOVEL TECHNIQUE FOR ANTERIOR VAGINAL WALL PROLAPSE REPAIR: ANTERIOR VAGINAL WALL DARN

### Hypothesis / aims of study

The aim of this study was to describe a novel technique for the repair of anterior vaginal wall prolapse; anterior vaginal wall darn (AVWD).

### Study design, materials and methods

The study included 47 patients that were enrolled between September 2011 and February 2012. Pre-surgery evaluation consisted of complete history, gynaecological examination, cough stress test (CST), voiding diary, daily pad use, Q-Tip test, and Incontinence Impact Questionnaire (IIQ-7) and Urogenital Distress Inventory (UDI-6) scores. Daily pad weight was used to quantify the patients' subjective complaints.

Exclusion criteria included a history of pelvic or vaginal surgery, predominant urge incontinence, pelvic or systemic infection, inguinal or vulvar abscess, pregnancy, urinary tract obstruction or renal insufficiency, pelvic pain (unrelated to prolapse), vaginal bleeding of unknown aetiology, blood coagulation disorders, pelvic malignancy or previous radiation of the pelvic region, vaginal erosion or severe vaginal atrophy, vaginal or urethral fistula, and a known allergy to the suture material. Patients requiring concomitant vaginal vault suspension, such as sacrospinous ligament fixation, sacrocolpopexy for vaginal prolapse, uterine procidentia, laparotomy, or laparoscopy for any reason, were also excluded.

During the AVWD technique, a midline incision was made beginning 1 cm proximal to the aspect of the external urethral meatus and extending to the vaginal apex. The anterior vaginal wall was detached from the urinary bladder beyond the anterior vaginal sulcus via a sharp and blunt dissection until arcus tendineus fascia pelvis (ATFP) was exposed. Continuous locking 2/0 polypropylene sutures were placed to the ATFP and the tissues that attach the lateral walls of the vagina to the ATFP from distal and to proximal as shown in the Figure 1. After six cm, at the spot where the ATFP exits the anterior vaginal wall, the sutures were placed medially to perivesical fascia for 2-3 cm. The running sutures were turned back from the cardinal ligaments without being tied and were extended continuously to the distal aspect to form a darn. The ends of the sutures were tied together. The traumatized vaginal mucosa was trimmed and the mucosa was closed.

Post-surgical evaluation, including POP-Q measurement, UDI-6, and IIQ-7 scores were performed for each patient, two years after the AVWD procedure. Pre- and post-operative questionnaire scores and POP-Q measurements were analyzed by using Wilcoxon signed rank test. SPSS 12.0 software (Chicago, IL, USA) was used for data analysis. The level of statistical significance was set at  $P < 0.05$ .

### Results

In total, 47 patients with anterior POP stage II-III were eligible to participate in the study. The patients ranged in age 35 to 67 years (median age 51 years). Median surgical duration was 40 minutes (range: 30-45 min), mean duration of hospitalization was 1.7 days (range: 1-2 days), and the average time to void was 1.4 days (range: 1-2 days). Pre- and post-surgery POP-Q measurements and symptom relief are shown in Table 1; there were significant improvements at points Aa and Ba. Similarly, UDI-6 and IIQ-7 scores were significantly lower post surgery ( $p < 0.001$ ).

Upon examination, CST was negative in 90.9 % of patients and vaginal examination were appeared normal in all patients.

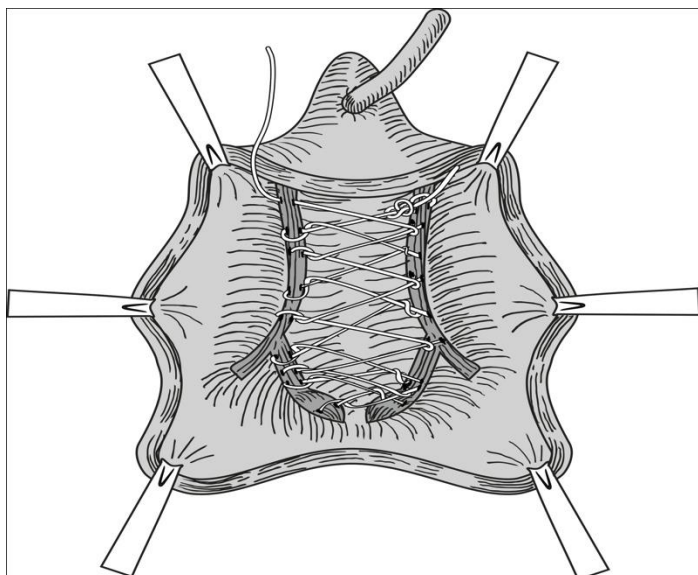
### Interpretation of results

The principle behind AVWD for the repair of prolapse is similar to that of nylon darn method, which was commonly used for the treatment of inguinal hernia before the advent of mesh and is still used by some general surgeons instead of mesh repair. The rationale for the darn procedure is that it forms a meshwork of non-absorbable sutures that is well tolerated by the tissues and fills the interstices with fibrous connective tissue, providing buttress across the weakened area of the anterior vaginal wall. This technique is, therefore, a compensatory repair, that facilitates repair of anterior vaginal wall prolapse without distorting the normal anatomy and without suture line tension and can be used for central, lateral and combined defects. The procedure is in harmony with the anatomical structure and creates a hammock that reinforces the native support tissue, it does not cause tension and possesses very a low risk for vaginal mucosal erosion and urinary bladder injury.

### Concluding message

The post-surgery findings indicate that grade II-III anterior POP was treated successfully with AVWD technique and that the complication rate was low; AVWD can be easily performed in patients that are concerned about serious adverse effects seen with meshes such as erosion, mesh shrinkage, bladder erosion, fistula, mesh exposure, and infection.

Figure 1 Surgical view of the ends of the suture



**Table 1.** POP-Q and incontinence-related quality values

	Before Operation	After Operation	P value
POP-Q measurements Aa (cm)	1.7±1.0	-1.9.1±0.7	<0.001
POP-Q measurements Ba (cm)	2.2±1.4	-2.3 ±0.6	<0.001
POP-Q measurements Ap (cm)	-2.2±0.7	-2.1±0.6	0.17
POP-Q measurements Bp (cm)	-2.67±0.4	-2.51±0.52	0.18
POP-Q measurements TVL (cm)	7.52-0.51-	7.13-0.42	0.53
POP-Q measurements C (cm)	-5.4±1.4	-6.1±1.2	0.046
UDI-6	8.8±3.6	1.6±1.2	<0.001
IIQ-7	10.5±5.3	0.9±0.8	<0.001
Q-TT	27.6±6.1	16.3±10.4	<0.017
Pad count (d)	4.9±1.2	0.6±0.2	<0.001
Residual urine volume (ml)	75.1±13.2	34.2±10.6	0.019

Disclosures

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