

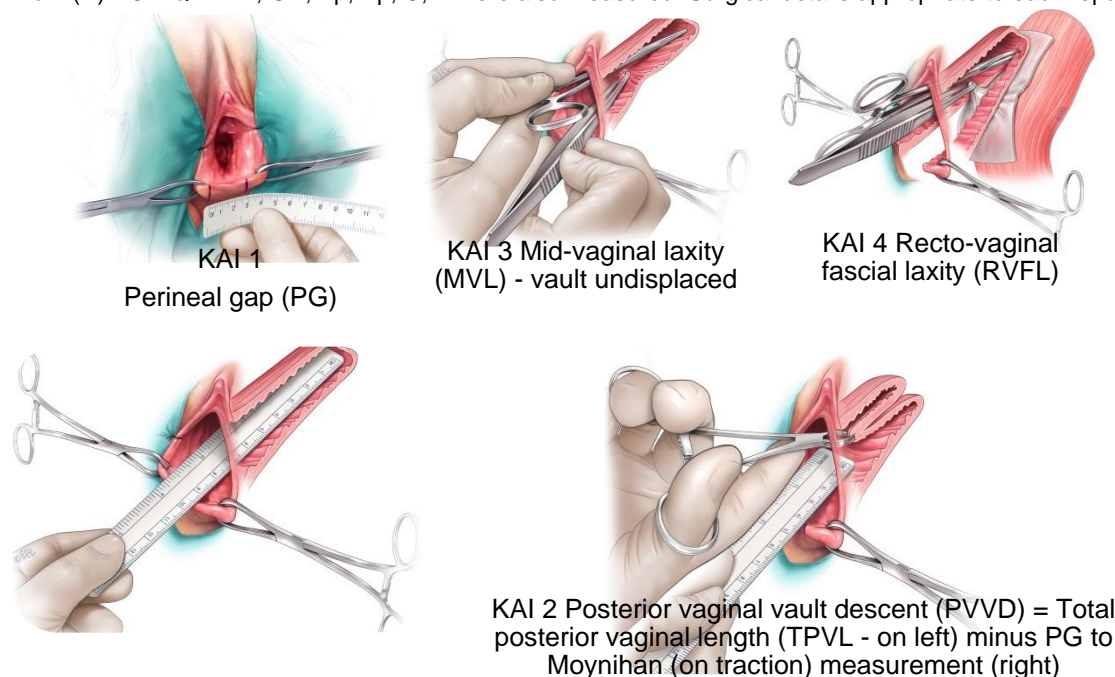
POSTERIOR REPAIR QUANTIFICATION (PR-Q) USING KEY ANATOMICAL INDICATORS (KAI)

Hypothesis / aims of study: Posterior (PR) vaginal compartment repairs have traditionally involved a subjective approach. We aim to quantify (PR-Q) such repairs using four key anatomical indicators (KAI).

Study design, materials and methods:

Four KAI were identified: KAI 1 is the perineal gap (PG), the thinned out medial area (cm) of the posterior fourchette between Moynihan forceps placed bilaterally where the line of the labia minora meets the perineum. This measurement quantifies level III defects¹. KAI 2 (cm) is the posterior vaginal vault descent (PVVD – Moynihan forceps placed 1cm from cuff or cervix) with firm traction towards the PG. This measurement quantifies Level 1 defects². KAI 3 is the mid-vaginal laxity (MVL – vault undisplaced). Vault is held in undisplaced position by the Moynihan whilst anterior traction by Gillies forcep of the midpoint of the vagina supero-inferiorly and in the midline, is used to demonstrate MVL (cm). KAI 4 (cm) is similar to KAI 3 though the measurement is of the rectovaginal fascial laxity (RVFL) once the posterior vaginal wall mucosa had been opened. KAI 3 and 4 quantify Level II defects¹. Medical illustrations of the KAI are inserted below.

At 50 consecutive PRs, (i) the four KAI: PG; PVVD; MVL (vault undisplaced); RVFL were measured pre- and post-operatively. The (ii) total posterior vaginal length (TPVL: PG to vault) and (iii) the MVL (vault displaced under downward Moynihan traction). From (iv) POP-Q²: TVL, GH, Ap, Bp, C, D were also measured. Surgical details appropriate to each repair were recorded.



Results:

Table 1 shows the pre-and postoperative measurements for the KAI and the equivalent POP-Q² measurements. Table 2 shows the surgical components of the posterior repair (PR). A mean preoperative PG of 2.5cm was reduced to 0.0cm postoperatively by excision (100% cases) with an average 21.6% increase in total vaginal length over that if the repair was commenced at the hymen and an average 25.0% reduction in the genital hiatus (GH). Mean PVVD was (i) 5.3cm overall; (ii) 6.4cm for 31/50 (62%) undergoing sacrospinous colpopexy (SSC); (iii) 3.5cm for 19/50 (38%) with no ligamentous vault fixation. Up to 52% (1.4/2.7cm) of mean preoperative MVL displaced was due to vaginal vault descent. The MVL undisplaced (mean 1.3cm) may better guide vaginal mucosal trimming. 72% had 1-5mm vaginal mucosal trimming bilaterally (under half mean MVL undisplaced). RVFL averaged just 0.8cm with 22/50 (44%), RVFL generally 0.5cm or less, not requiring any RVF plicatory sutures. The other 28 (56%) had an average 3.8 RVF sutures inserted.

Table 1: Pre- and Post-PR measurements (average in cm) of key anatomical indicators (KAI) and equivalent POP-Q measurements (n =50).

	KAI		POP-Q	
	Pre-op	Post-op	Pre-op	Post-op
Perineal Gap (PG)	2.5	0.0 (100%↓)		
Genital hiatus (GH)			3.6	2.7 (25%↓)
Total Post Vag Length (TPVL)	9.2	9.0 (2.2%↓)		
Total Vaginal Length (TVL)			7.3	7.4 (1.4%↑)

Post Vag Vault Desc (PVVD)	5.3	0.3 (94%↓)		
PVVD (SSC used)	6.4	0.0 (100%↓)		
PVVD (SSC not used)	3.5	0.8 (77%↓)		
Point C			-2.5	-6.3
Point D (7 patients with Cx pre-/post-op)			-4.1	-7.2
Point Ap			+0.1	-2.9
Point Bp			+0.2	-2.8
Mid-Vag Laxity (MVL:nondispl)	1.3	0.3 (77%↓)		
Mid-Vag Laxity (MVL: displ)	2.7	0.3		
Recto-vaginal fascial laxity (RVFL)	0.8			

SSC= sacrospinous colpopexy; nondispl= vaginal vault not displaced (i.e. held in placed); displ (vaginal vault on traction).

Table 2: Surgeries performed in posterior vaginal compartment repair (n=50) c/com = concomitant

Surgery	No. performed	No. not performed
Excision of perineal gap	50 (100%)	0 (0%)
Sacrospinous colpopexy (SSC)	31 (62%)	19 (38%)
SSC if c/com Ant Rep only	20 (87%)	3 (13%)
SSC if c/com VH/Ant Rep	12 (44%)	15 (56%)
Rectovaginal fascial suturing	28 (56%) (ave 3.8 sutures)	22 (44%)
Excision of vaginal skin	46 (92%) (72% 1-5mm)	4 (8%)

Interpretation of results:

PR-Q is possible and desirable to identify more significant anatomical defects at three different anatomical levels¹. The four KAI: PG, PVVD, MVL and RVFL can indicate possible surgical measures at (i) the perineum (consider excision PG); (ii) vaginal vault (consider SSC/other fixation if PVVD > 5cm); (iii) vaginal skin (consider mucosal trimming bilaterally < half MVL undisplaced); and (iv) recto-vaginal space (consider no suturing if RVFL is 5mm or less) respectively. GH (25.0% reduction postop) and TPVL/TVL (minimal 1.4%-2.2% change in vaginal length postop) were useful (not key) co-measures though there appeared no role for C, D, Ap, Bp of the POP-Q².

These results challenge the traditional concept of a PR requiring a predominantly Level II repair of rectocele. Mean defect size was 2.5cm (perineum – Level III), 5.3cm (vault – Level I) vs 1.3cm for MVL (undisplaced) and 0.8cm for RVFL (Level II). This study shows, for the first time quantitatively, that 52% of MVL is due to vault laxity.

Concluding message:

PR-Q using KAI allows the objective identification and more precise surgical management of posterior vaginal compartment defects at three¹ (Levels I, II, III) anatomical levels.

References

1. Amer J Obstet Gynecol 1992, 166:1717-1728.
2. Amer J Obstet Gynecol, 1996, 175(1):10 -11.

Disclosures

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