

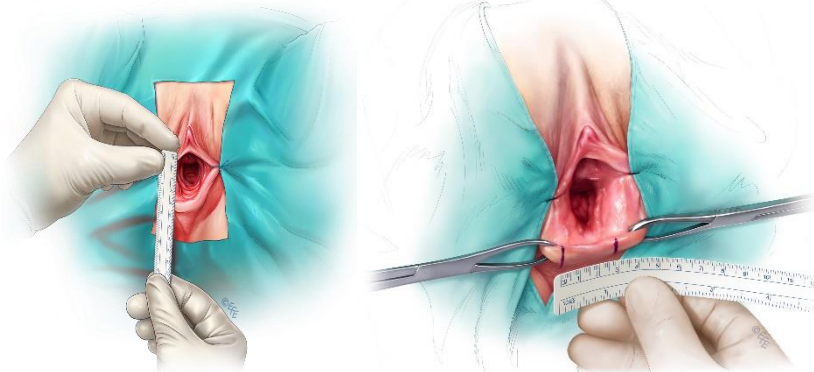
## POSTERIOR VAGINAL COMPARTMENT REPAIRS: DOES VAGINAL VAULT (LEVEL I) FIXATION SIGNIFICANTLY IMPROVE THE VAGINAL INTROITAL (LEVEL III) REPAIR?

### Hypothesis / aims of study

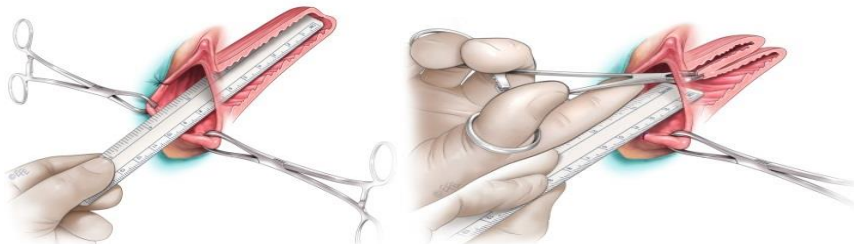
Currently, there is limited published data on the association between vaginal vault and introital defects before and after posterior repairs (PR). We hypothesize that there may be both: (i) a positive association between the size of vaginal vault (Level I) and introital (Level III) defects preoperatively; and (ii) a positive association between the reduction of these defects postoperatively if vault suspension (sacrospinous colpopexy – SSC) is used.

### Study design, materials and methods

In a cross-sectional study of 300 consecutive PRs, the following were measured pre- and immediately postoperatively: (i) from POP-Q [1]: genital hiatus (GH [Level III] – Figure 1); (ii) from Posterior Repair Quantification (PR-Q) [1,2], perineal gap (PG [Level III] – Figure 2) and posterior vaginal vault descent (PVVD [Level I]- Figures 3A,3B). The data for the introital defects (GH, PG) were separated according to the need for vault fixation using a SSC on the basis of a larger vaginal defect (PVVD over 5cm).



**Figure 1:** Genital Hiatus (GH –[1]) : From the middle of the external urethral meatus to the perineum. **Figure 2:** Perineal Gap –[1,2] Thinned out medial area (cm) between of the Moynihan forceps placed bilaterally where the labia posterior margin of the hymen.



**Figure 3A and 3B:** Posterior Vaginal Vault Descent (PVVD –[1,2]): Descent of the posterior vaginal vault towards the perineal gap, obtained by subtracting the inferiorly displaced vaginal vault and the anterior perineum (3B-right) from the total posterior vaginal length (TPVL – 3A left – posterior vaginal vault to anterior perineum).

### Results

Results are detailed in Table 1. Mean (SD) pre-operative GH and PG were both larger in the SSC versus no SSC group: GH (3.73 (0.94) vs 3.36 (0.83) cm,  $P=0.01$ ); PG (2.91 (1.0) vs 2.61 (0.91) cm,  $P = 0.05$ ).

SSC was performed in 84% cases, not performed in 16% cases.

The mean (SD) post-operative reduction in GH (antero-posterior) was 29% ( $P =0.002$ ), significantly greater 1.1 (0.69) cm (29.5%) in the SSC group and 0.77 (0.49) cm (22.9%) in the no SSC group. The decrease in PG (transverse) was greater by 11% ( $P=0.05$ ) – 2.91cm vs 2.61cm (11.5%) in the SSC vs no SSC group.

### Interpretation of results

Level I and III defects are associated at PRs; preoperatively larger vaginal vault (PVVD over 5cm) and larger introital defects (GH and PG).

Postoperatively, the use of vault fixation resulted in significantly greater reduction in the antero-posterior (GH) and transverse (PG) measurements of the introital defects, than if vault fixation was not used.. To our knowledge, this latter finding has not previously been cited.

### Concluding message

There is a positive association between vaginal vault and introital defects before and after posterior repairs (PR). (1) Vaginal vault fixation (Level I) will significantly improve the vaginal introital (Level III) repair. (2) An effective and reproducible posterior prolapse repair should involve proper measurement of anatomical defects (including PG and PVVD from PR-Q<sup>1,2</sup>). (3) Vaginal vault (Level I) fixation (SSC) is recommended if PVVD >5cm (around 84% cases). (4) Level III repair (100% cases) simply involves the excision of the perineal gap (PG) and repair, eliminating the PG and reducing the GH by around 30%.

**Table 1:**

	<b>SSC done (84%)</b>		<b>SSC not done (16%)</b>	
<b>Age mean years (Range) - SD</b>	63.7 (33-90) - 11.6		62.7 (31-91) - 13.0	
<b>Parity mean no (Range) - SD</b>	2.7 (0-8) - 1.2		2.52 (0-5) - 1.15	
<b>Weight mean Kgs (Range) - SD</b>	70.1 (44-129) - 13.7		75.8 (49-141) - 8.4	
<b>Height mean cm (Range) - SD</b>	163.1 (147-186) - 6.9		161.8 (142-187) - 8.2	
<b>Posterior prolapse Markers - Preop N (Range)- SD (cm)</b>	<b>PRE-OP</b>	<b>POST-OP</b>	<b>PRE-OP</b>	<b>POST-OP</b>
<b>PVVD overall</b>	6.5 (4.5-15.0) -2.0	0.06 (0.1-1.0) - 0.1	3.5 (1.0-5.5) - 0.8	0.6 (0-2.0) - 0.4
<b>Genital Hiatus</b>	3.73 (1.5-6.5) - 0.9	2.63 (3.0-4.5) - 0.73	3.36 (1.3-4.2) -0.7	2.59 (1.3-4.2) - 0.64
<b>Perineal Gap</b>	2.91 (1.0-6.0) - 1.0	0	2.61 (1.4-5.5) -0.9	0

### References

1. Neurourol Urodyn 35(2): 137-168; Int Urogynecol J 27:741-745
2. Int Urogynecol J 27:741-745; Neurol Urodyn 34(S3): S130-131

### Disclosures

**Funding:** nil **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** St Vincent's Hospital. Sydney. LNR/13/SVH/408 **Helsinki:** Yes **Informed Consent:** Yes