

BACKGROUND

- Vaginal prolapse (VP) has a prevalence of 0.2% to 43%, with recurrent prolapse rate of 5-34% and reoperation rate of 5-26% depending on repair technique.¹⁻³
- High midline levator myorrhaphy (HMLM) is a vaginal native tissue repair for VP that does not rely on mesh interposition, avoids the inherent difficulties associated with sacrospinous fixation involving nearby vascular and neural structures, and is well-suited for middle-aged to older women.⁴
- HMLM can be done many years after hysterectomy when the uterosacral ligaments are not readily accessible.

STUDY GOAL

To review long-term outcomes following HMLM in women with symptomatic vault prolapse

MATERIALS AND METHODS

- IRB approved prospectively maintained prolapse database.
- Women undergoing HMLM for symptomatic VP/other associated POP were divided by indication groups:
 1. Only Vault
 2. Vault and Anterior (cystocele) prolapse (V+A)
 3. Vault and posterior (rectocele/enterocele) prolapse (V+P)
 4. Prolapse of all three compartments (V+A+P)
- 6 months minimum follow-up
- Outcome measures: demographic data, history of prior POP, physical exam, operative notes, peri-operative complications (Clavien)
- **Failure:** same compartment prolapse \geq stage 2 on physical examination, or reoperation for POP
- **Technique:** After enterocele sac closure, levator sutures tied across midline recreating levator plate for apical support (Figures 1,2)

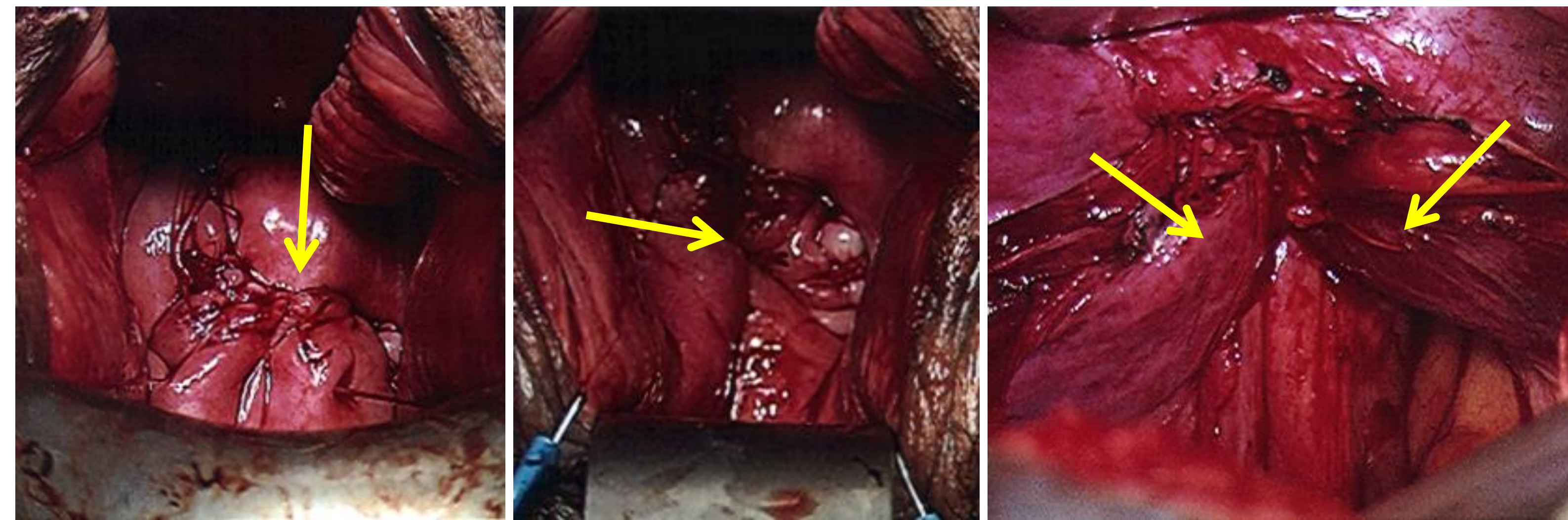


Figure 1: Intraoperative views of: A/B) vault fixation sutures transfixed then tied at apex; (C) midline approximation of levator muscle edges

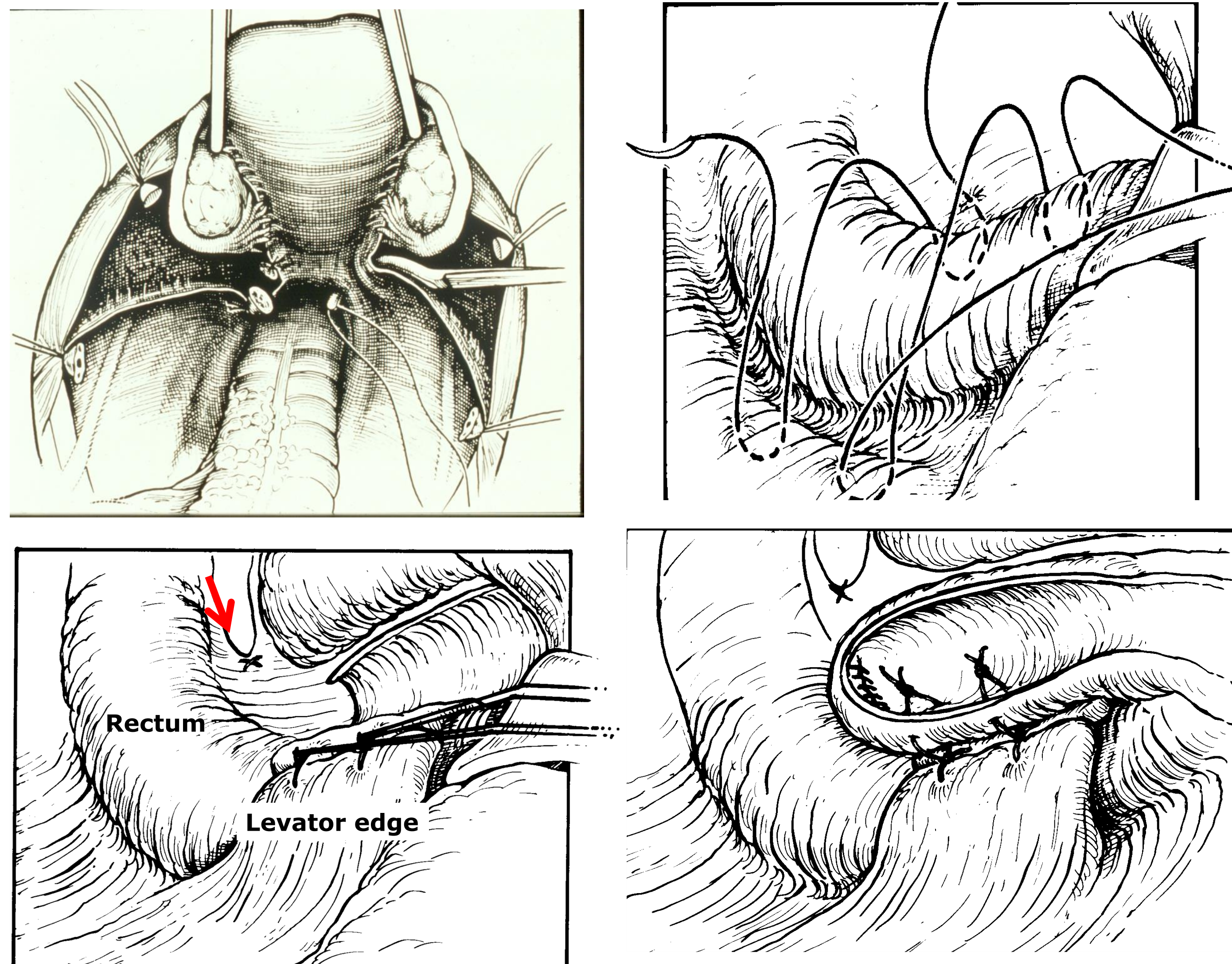


Figure 2. Schematic of A) abdominal view pre-hysterectomy; (B) Levator sutures tied across the midline; (C) sagittal view of upper vagina and closed enterocele sac; (D) Levator sutures transfixed at apex

Table 1: Baseline Patient Characteristics (N=94).

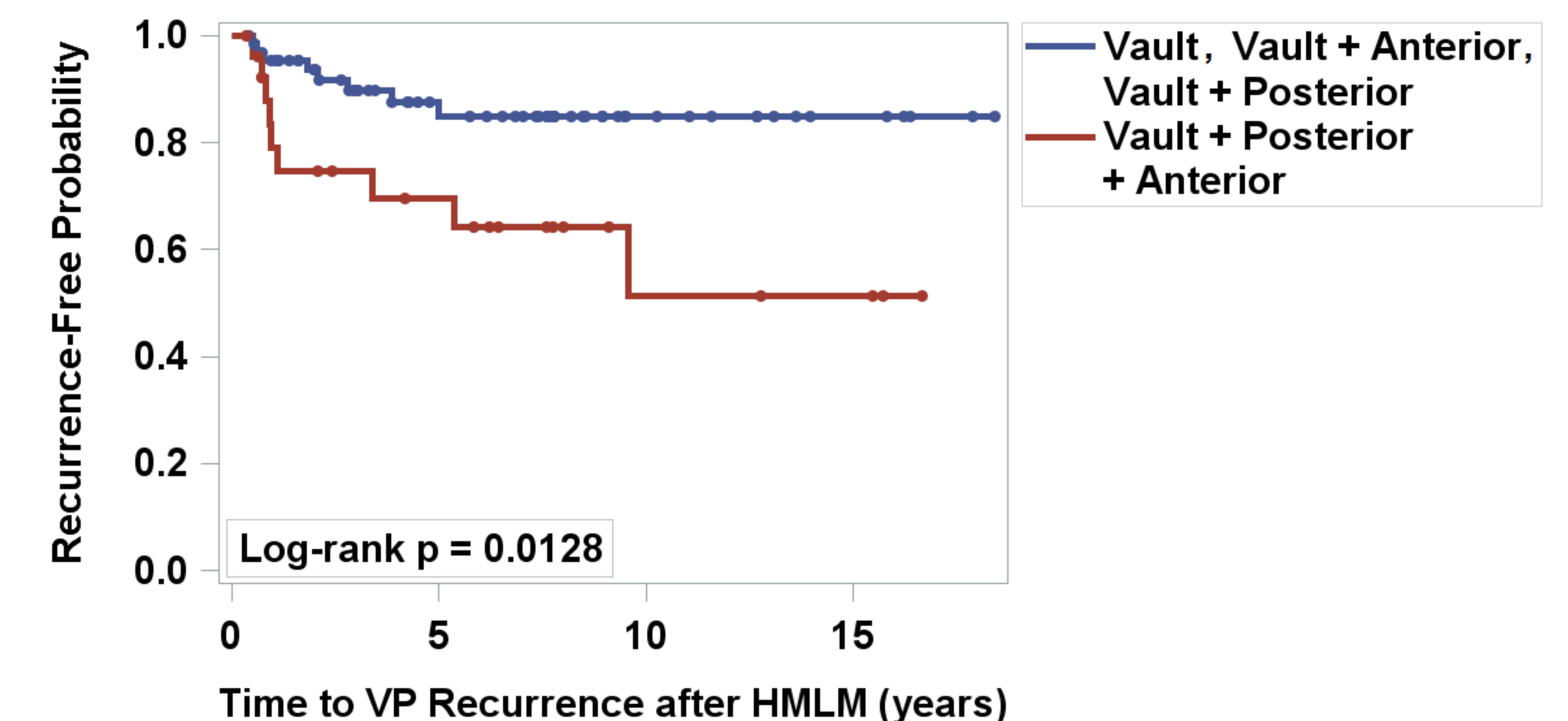
| | Total (n=97) | Vault ^A (n=6) | V+A (n=26) | V+P (n=35) | V+A+P (n=28) |
|---|-----------------|-----------------------------|---------------|---------------|-----------------|
| Age | 69.6±10.5 | 66.5±13.6 | 69.0±11.2 | 71.4±9.2 | 68.6±10.7 |
| BMI | 25.9±4.1 | 26.6±4.1 | 25.6±5.5 | 25.8±3.4 | 26.1±3.6 |
| Follow-up, years | 7.7±4.6 | 7.1±7.0 | 8.0±3.8 | 7.6±4.5 | 7.7±4.9 |
| Prior hysterectomy, no. (%) [*] | 67 (71) | 6 (100) | 12 (46) | 30 (86) | 19 (70) |
| Concurrent hysterectomy, no. (%) [*] | 23 (24) | 0 (0) | 14 (54) | 2 (6) | 7 (26) |
| Prior POP surgery, no. (%) [*] | 26 (28) | 3 (50) | 2 (8) | 11 (31) | 10 (37) |

^A Due to limited sample size in the vault only category, analyses of overall differences were carried out only for the three other categories, using ANOVA for continuous measures and Fisher's Exact test for categorical measures.
^{*}Statistically significant

RESULTS

- From May 1996 to September 2014, 94 of 109 women met inclusion criteria.
- Mean follow up: 7.7 years (0.6-18.4).
- Baseline demographics in Table 1.
- No transfusions or intra-operative complications.
- Ten Clavien I/II early complications (<30 days)
 - urinary retention/prolonged catheter (4), urinary tract infection (2), incontinence (2), bladder spasms (1), bleeding without transfusion (1).
 - No statistical difference between indication groups
- **71.3% women cured of VP**
- **11% (10/94) failed in compartment other than apex; 5.3% re-operation rate**
- **18% (17/94) failed at apex; 13.8% reoperation rate**
- Recurrence-free probability was statistically significant between women with ≤ 2 compartment POP vs 3 compartment POP (Figure 1)

Figure 3: Kaplan-Meier curve for VP recurrence-free status after HMLM procedure by indication group



CONCLUSIONS

- HMLM is a durable option for women with VP alone or associated with one other compartment prolapse.
- HMLM is a native tissue repair with complication and prolapse recurrence rates on par with other VP repair procedures.

REFERENCES

1. Toozs-Hobson, P., Freeman, R., Barber, M. et al.: An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for reporting outcomes of surgical procedures for pelvic organ prolapse. *Neurourol Urolyn*, **31**: 415, 2012
2. Sze, E. H., Karram, M. M.: Transvaginal repair of vault prolapse: a review. *Obstet Gynecol*, **89**: 466, 1997
3. Maher, C., Feiner, B., Baessler, K. et al.: Surgical management of pelvic organ prolapse in women. *Cochrane Database Syst Rev*, **4**: CD004014, 2013
4. Lemack, G. E., Zimmern, P. E., Blander, D. S.: The levator myorrhaphy repair for vaginal vault prolapse. *Urology*, **56**: 50, 2000