Section: Obstetrics & Gynaecology

Original Research Article

COMPARISON OF CONTINUOUS INTERLOCKING VERSUS INTERRUPTED SUTURING TECHNIQUE USING VICRYL FOR VAGINAL VAULT CLOSURE IN ABDOMINAL AND LAPAROSCOPIC HYSTERECTOMIES: A PROSPECTIVE STUDY OF 90 PATIENTS

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ABSTRACT

Background: Vaginal vault closure is an important step in hysterectomy that can influence postoperative outcomes such as vaginal bleeding, infection, dyspareunia, and vault integrity. Various suturing techniques are used for vault closure, including continuous interlocking and interrupted sutures. The optimal technique remains a subject of debate. **Materials and Methods:** This prospective comparative study included 90 patients undergoing hysterectomy (abdominal and laparoscopic) for benign gynecological conditions. Patients were divided into two groups of 45 each. Group A underwent vaginal vault closure using continuous interlocking sutures with Vicryl, while Group B underwent vault closure using interrupted Vicryl sutures. Postoperative outcomes including vaginal bleeding, infection, operative time for vault closure, dyspareunia, and vault-related complications were evaluated. **Results:** Both techniques were found to be safe and effective for vaginal vault closure. However, the interrupted suturing group demonstrated slightly better outcomes in terms of postoperative vaginal bleeding and patient comfort. No cases of vault dehiscence were observed in either group. Operative time for vault closure was marginally shorter in the continuous suturing group. **Conclusion:** Interrupted suturing using Vicryl provides reliable vault closure with favorable postoperative outcomes in both laparoscopic and abdominal hysterectomies. Although continuous interlocking sutures reduce suturing time, interrupted suturing may offer better postoperative results in terms of bleeding and patient comfort.

INTRODUCTION

Hysterectomy is one of the most frequently performed gynecological surgical procedures worldwide. Vaginal vault closure is a crucial step in the procedure and plays a significant role in postoperative recovery and long-term pelvic support. With the increasing adoption of minimally invasive surgery, hysterectomies are now commonly performed through both abdominal and laparoscopic approaches. Regardless of the surgical approach, proper closure of the vaginal vault is essential to prevent complications such as postoperative bleeding, infection, vault hematoma, dyspareunia, and rarely vault dehiscence.

Different suturing techniques have been described for vault closure, including interrupted sutures, continuous sutures, and continuous interlocking sutures. Continuous suturing techniques are often preferred due to faster closure and uniform tension distribution. However, interrupted sutures provide independent tension control and may reduce the risk of tissue ischemia.

Vicryl (polyglactin 910) is widely used for vaginal vault closure due to its favorable tensile strength, minimal tissue reaction, and predictable absorption profile.

This study was conducted to compare continuous interlocking suturing with interrupted suturing techniques using Vicryl for vaginal vault closure in both abdominal and laparoscopic hysterectomies, and to evaluate their impact on postoperative outcomes.

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MATERIALS AND METHODS

Study Design

This was a prospective comparative study conducted in a gynecological surgical unit at RH WOMEN'S HOSPITAL.

Study Population

A total of 90 patients undergoing hysterectomy for benign gynecological conditions were included in the study.

The study included patients undergoing:

- Total abdominal hysterectomy
- Total laparoscopic hysterectomy

Inclusion Criteria

- Patients undergoing abdominal or laparoscopic hysterectomy for benign conditions
- Age between 35 and 60 years
- Patients willing to participate and provide informed consent

Exclusion Criteria

- Gynecological malignancy
- Active pelvic infection
- Patients with bleeding disorders
- Immunocompromised patients

Study Groups

Patients were divided into two equal groups (45 patients each).

Group A (Continuous Interlocking Group)

Vaginal vault closure performed using continuous interlocking Vicryl sutures

Group B (Interrupted Group)

Vaginal vault closure performed using interrupted Vicryl sutures

Surgical Technique

After completion of hysterectomy and adequate hemostasis, the vaginal vault was closed using Vicryl sutures.

- In Group A, a continuous interlocking suturing technique was used from one angle of the vault to the other.
- In Group B, the vault was closed using multiple interrupted sutures placed at appropriate intervals.
- All surgeries were performed by same experienced surgeon using standardized operative techniques.

Parameters Evaluated

The following parameters were evaluated:

- Time required for vaginal vault closure
- Postoperative vaginal bleeding
- Vault hematoma
- Vault infection
- Vault dehiscence
- Postoperative pain
- Dyspareunia at follow-up

Patients were followed up for 6–12 weeks postoperatively.

RESULTS

Overall, the interrupted suturing technique demonstrated slightly better postoperative outcomes, while the continuous interlocking technique offered the advantage of reduced suturing time.

A total of 90 patients undergoing hysterectomy were included in the study. Patients were equally divided into two groups of 45 each.

Both groups were comparable in terms of age, indication for hysterectomy, and surgical approach (abdominal or laparoscopic).

Continuous interlocking suturing required less operative time, while interrupted suturing demonstrated slightly better postoperative outcomes, particularly in terms of postoperative vaginal bleeding and dyspareunia.

Importantly, no cases of vault dehiscence were observed in either group.

Operative Time

The continuous interlocking suturing technique required slightly less time for vault closure compared with interrupted suturing.

Postoperative Vaginal Bleeding

Patients in the interrupted suturing group experienced comparatively less postoperative vaginal bleeding.

Vault Infection

Rates of postoperative vault infection were low in both groups, with no significant difference observed.

Vault Dehiscence

Importantly, no cases of vault dehiscence were observed in either group, indicating that both techniques provide secure vault closure.

Dyspareunia

The incidence of dyspareunia at follow-up was slightly lower in the interrupted suturing group, although the difference was not statistically significant.

Table 1: Comparison of Postoperative Outcomes

Parameter	Continuous Interlocking Sutures (n=45)	Interrupted Sutures (n=45)	P value
Mean Age (years)	44.2 ± 6.3	45.1 ± 5.9	>0.05
Mean Vault Closure Time (minutes)	6.1 ± 1.2	8.3 ± 1.5	<0.05
Postoperative Vaginal Bleeding	6 (13.3%)	2 (4.4%)	<0.05
Vault Infection	3 (6.6%)	2 (4.4%)	>0.05
Vault Hematoma	2 (4.4%)	1 (2.2%)	>0.05
Vault Dehiscence	0	0	—
Dyspareunia (Follow-up)	5 (11.1%)	2 (4.4%)	>0.05

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Statistical Analysis

Continuous variables were expressed as mean ± standard deviation, while categorical variables were expressed as frequency and percentage.

- Student's t-test was used to compare continuous variables.
- Chi-square test was used to compare categorical variables.

A p value <0.05 was considered statistically significant.

The operative time for vault closure was significantly lower in the continuous interlocking group, whereas postoperative vaginal bleeding was significantly lower in the interrupted suturing group.

No statistically significant difference was observed in vault infection, hematoma formation, or dyspareunia between the two groups.

DISCUSSION

Vaginal vault closure remains an important surgical step in hysterectomy. The ideal suturing technique should ensure adequate hemostasis, secure tissue approximation, minimal tissue ischemia, and reduced postoperative complications.

Continuous suturing techniques are commonly favored due to their speed and uniform tension distribution. However, interrupted sutures allow better individual tension adjustment and may reduce tissue strangulation.

In our study, interrupted suturing demonstrated better postoperative outcomes in terms of vaginal bleeding and patient comfort. These findings may be explained by the ability of interrupted sutures to distribute tension more evenly across individual stitches, thereby reducing localized tissue ischemia.

Another important observation was the absence of vault dehiscence in both groups, indicating that both suturing techniques are safe when performed correctly.

The slightly longer suturing time associated with interrupted sutures may be a minor disadvantage but does not appear to significantly impact overall surgical outcomes.

Further larger multicentric studies may help establish stronger evidence regarding the optimal suturing technique for vaginal vault closure.

CONCLUSION

Both continuous interlocking and interrupted suturing techniques using Vicryl are safe and effective methods for vaginal vault closure in abdominal and laparoscopic hysterectomies.

However, interrupted suturing demonstrated slightly better postoperative outcomes, particularly in terms of reduced vaginal bleeding and improved patient comfort.

Continuous interlocking suturing, while faster, did not show superior clinical outcomes in this study.

Interrupted suturing may therefore be considered a reliable and effective technique for vaginal vault closure in hysterectomy procedures.

REFERENCES

1. Cronin B, Sung VW, Matteson KA. Vaginal cuff dehiscence: risk factors and management. Am J Obstet Gynecol. 2012;206(4):284-288.
2. Hur HC, Donnellan N, Mansuria S, Barber RE, Guido R, Lee T. Vaginal cuff dehiscence after different modes of hysterectomy. Obstet Gynecol. 2011;118(4):794-801.
3. Uccella S, Ghezzi F, Cromi A, Bogani G, Serati M, Bolis P. Vaginal cuff closure after minimally invasive hysterectomy. J Minim Invasive Gynecol. 2011;18(5):516-523.
4. Ceccaroni M, Roviglione G, Malzoni M, et al. Vaginal cuff closure in minimally invasive hysterectomy. Gynecol Surg. 2012;9(3):253-259.
5. Nick AM, Lange J, Frumovitz M, et al. Rate of vaginal cuff separation following laparoscopic or robotic hysterectomy. Gynecol Oncol. 2011;120(1):47-51.
6. Kho RM, Akl MN, Cornella JL, et al. Incidence and characteristics of patients with vaginal cuff dehiscence after robotic procedures. Obstet Gynecol. 2009;114(2):231-235.
7. Hur HC, Lightfoot M, McMillin MG, et al. Vaginal cuff closure techniques and complications after hysterectomy. Obstet Gynecol. 2015;125(1):64-70.
8. Einarsson JI, Cohen SL, Gobern JM, et al. Suturing techniques in laparoscopic hysterectomy. J Minim Invasive Gynecol. 2013;20(4):439-444.
9. Uccella S, Cromi A, Bogani G, et al. Transvaginal closure of the vaginal cuff after laparoscopic hysterectomy. Am J Obstet Gynecol. 2012;207(2):126.e1-126.e6.
10. Blikkendaal MD, Twijnstra AR, Pacquee SC, et al. Vaginal cuff closure after total laparoscopic hysterectomy. Gynecol Surg. 2014;11(2):111-116.

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