Comparison Between Modified B Lynch Technique and Segmentectomy for Uterine Conservation in Management of Placenta Accreta Spectrum

Thesis

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By

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Summary &

Conclusion

Summary

PAS disorders represent a significant obstetric challenge, associated with substantial maternal morbidity and mortality due to massive hemorrhage and the risk of hysterectomy. The rising global incidence of PAS is closely linked to the increasing rates of cesarean deliveries, necessitating the development of effective uterine-conserving surgical strategies.

While hysterectomy remains the standard approach for uncontrollable hemorrhage in PAS cases, it often results in loss of fertility and increased perioperative complications. In response, uterus-sparing techniques such as the modified B-Lynch compression suture and segmentectomy have emerged as viable alternatives. The modified B-Lynch technique utilizes a tailored uterine compression method to control bleeding, while segmentectomy involves excision of the affected myometrial segment followed by meticulous uterine reconstruction.

This study aimed to comparatively evaluate the efficacy, safety, and reproductive outcomes of the modified B-Lynch technique versus segmentectomy in the management of PAS.

This prospective comparative study was conducted at Fayoum University Hospital between March 2024 and February 2025, involving 40 pregnant women diagnosed with PAS. Patients were divided into two equal groups: one managed with the modified B-Lynch compression

suture and the other undergoing lower uterine segmentectomy. The sample size was determined using G-Power software, based on an effect size of 0.82, power of 80%, and a significance level of 0.05. Inclusion criteria were women aged 20–40 years, with a viable fetus and pregnancy beyond 28 weeks, diagnosed with PAS via ultrasonography and color Doppler. Exclusion criteria included coagulopathies, preeclampsia, placental abruption, and cases scheduled for cesarean hysterectomy. Comprehensive preoperative assessment was performed, including clinical history, general and local examination, and prenatal PAS diagnosis based on specific sonographic markers.

Surgical intervention was tailored according to PAS grade, patient preference, and intraoperative findings. The modified B-Lynch technique, used primarily for Grades 1 and select Grade 2 cases, involved specialized compression sutures to control bleeding while preserving the uterus. Segmentectomy, applied to deeper invasions including some Grade 3 cases, entailed resecting the affected uterine segment followed by multilayer uterine reconstruction. Both procedures included uterine artery ligation, intraoperative blood loss estimation, and ICU monitoring when indicated. Cases with bladder or pelvic organ invasion were managed via multidisciplinary surgical approaches. Blood loss was quantified through suction measurements and gauze weight estimation. Postoperatively, patients were monitored for complications, counseled on future pregnancy risks, and followed up with imaging for any retained placental tissue.

The current study included 40 patients, divided into two groups. Group 1 consisted of 20 cases managed with "Segmentectomy," while

Group 2 included 20 cases treated with the "Modified B-Lynch" technique.

The results showed no significant difference between the two groups regarding age and residence. However, Group 2 (Modified B-Lynch) had a higher mean gestational age compared to Group 1. No significant differences were observed between the groups for parity, history of abortion, previous cesarean sections, prior uterine surgeries, or the type of placenta accreta. Additionally, there was no significant difference in preoperative hemoglobin and hematocrit levels between the two groups.

Regarding intraoperative parameters, Group 2 (Modified B-Lynch) required more packed red blood cell (PRBC) transfusions compared to Group 1. However, there was no significant difference between the groups for intraoperative blood loss or intraoperative fresh frozen plasma (FFP) transfusion. Postoperatively, Group 2 demonstrated a higher mean hematocrit level, although no significant difference was observed in postoperative hemoglobin levels between the two groups.

There were no significant differences between the two groups in terms of postoperative complications (hemorrhage, RBC transfusion, or failure/hysterectomy) or the need for ICU and NICU admission. The duration of hospital stay did not differ significantly between the two groups either.

In conclusion, both the Modified B-Lynch technique and segmentectomy showed similar outcomes in terms of complications, hospital stay, and postoperative care. While some differences were

observed in blood transfusion needs and hematocrit levels, both methods were effective for managing PAS, with no significant differences in overall patient outcomes. Both approaches are viable options for uterine conservation in PAS management.

Conclusion

1. The current study revealed that both Segmentectomy and Modified B-Lynch techniques are effective in managing cases of PAS, with no significant differences in most maternal or neonatal outcomes.

2. Although the Modified B-Lynch group had a higher gestational age and required more blood transfusions intra-operatively, yet it also showed better postoperative Hematocrit levels.

3. Importantly, neither group experienced cases of hysterectomy, and both showed low complication rates and similar hospital stays.

4. These results support the safety and effectiveness of both surgical approaches, with Modified B-Lynch showing slight hematologic advantages.