

## Surgical Approaches in Ectopic Pregnancy: Effectiveness, Complications, and Long-Term Outcomes

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### Abstract

**Objective:** Ectopic pregnancy (EP) is a critical obstetric emergency characterized by the implantation of a fertilized ovum outside the endometrium, posing significant maternal morbidity and mortality risks. Surgical treatment is the primary approach, particularly in cases of rupture or failure of medical management. Among surgical options, laparoscopic surgery and laparotomy are commonly performed, yet their effectiveness, complication rates, and long-term outcomes remain debatable. This review aims to compare the surgical approaches in the management of ectopic pregnancy to determine the most appropriate method in terms of effectiveness, complications, and long-term reproductive outcomes.

**Methods:** A comprehensive literature review on ectopic pregnancy surgery was conducted. Studies comparing laparoscopic surgery (salpingostomy and salpingectomy) and laparotomy were analyzed in terms of operative time, blood loss, postoperative recovery, impact on fertility, and complication rates. The selected studies were retrieved from databases such as PubMed, Scopus, and Web of Science, focusing on prospective and retrospective clinical research published in the last 10 years.

**Results:** The literature suggests that laparoscopic surgery is associated with reduced postoperative pain, shorter hospital stays, and lower complication rates. Salpingostomy, as a tube-preserving approach, has the potential to improve fertility outcomes but requires careful postoperative hCG monitoring due to the risk of residual trophoblastic tissue. Salpingectomy, while reducing the risk of recurrent ectopic pregnancy, leads to tubal loss, which may impact future fertility. Laparotomy, on the other hand, is primarily performed in hemodynamically unstable or severely ruptured cases and is associated with a longer recovery period and a higher risk of postoperative complications.

**Conclusion:** Surgical treatment in ectopic pregnancy should be individualized based on the patient's clinical condition and future fertility desires. Laparoscopic techniques are generally recommended as the first-line approach in suitable patients due to their minimally invasive nature and associated benefits. However, laparotomy remains a crucial option in cases of severe rupture and hemodynamic instability. The choice of surgical method should be carefully considered alongside the patient's individual risk factors to optimize long-term fertility outcomes.

### Keywords

Ectopic pregnancy, salpingostomy, salpingectomy, laparotomy.