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Heterotopic Pregnancy Following Laparoscopic Tubal Ligation: Rare Case Report

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Abstract

Heterotopic pregnancy, the simultaneous occurrence of intrauterine and ectopic pregnancies, is an uncommon clinical condition, especially following laparoscopic tubal ligation (LTL). This report discusses a 34-year-oldwoman who presented with acute abdominal pain three months post-LTL. Diagnostic evaluation revealed an intrauterine pregnancy & intra op found to be Heterotopic pregnancy, which was managed surgically. This case underscores the importance of considering heterotopic pregnancy in differential diagnoses, even after tubal sterilization procedures.

Keywords: Heterotopic pregnancy, Laparoscopic tubal ligation, Ectopic pregnancy, Tubal sterilization failure

Introduction

Tubal ligation is a widely accepted permanent contraceptive method with a low failure rate. However, when failure occurs, the risk of ectopic pregnancy increases significantly. Ectopic pregnancy is an important cause of morbidity and mortality in reproductive age group. It is a significant cause of first trimester maternal mortality[1]. So its early diagnosis and treatment is essential in preventing complications. Therefore, possibility of ectopic gestation should be kept in mind as a differential diagnosis for acute pain in abdomen in any women of reproductive age even if she has history of tubal ligation.

Heterotopic pregnancy, involving concurrent intrauterine and ectopic gestations, is rare, with an estimated incidence of 1 in 30,000 natural conceptions. The increasing use of assisted reproductive technologies has led to a higher incidence of heterotopic pregnancies. This case report highlights a rare instance of heterotopic pregnancy following LTL, emphasizing the need for vigilance in similar clinical scenarios.

Case Report

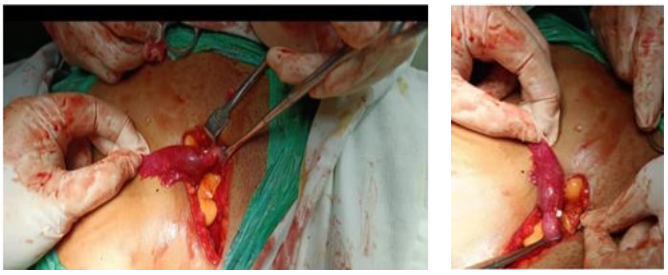
A 34-year-old woman, gravida 5 para 3 living three with one medical termination of pregnancy, presented to the emergency department with a one-day history of acute lower abdominal pain. She reported amenorrhea for three months but denied any vaginal bleeding. Her surgical history was significant for a laparoscopic tubal ligation performed three months prior, following a medical termination of pregnancy.

On examination, the patient's vital signs were stable, with a pulse rate of 82 beats per minute and a blood pressure of 110/70 mmHg. Abdominal examination revealed suprapubic tenderness, while pelvic examination

showed altered vaginal discharge. On per vaginal examination cervix was soft with a closed os, and the uterus was of normal size and anteverted, with cervical motion tenderness present. A urine pregnancy test was positive.

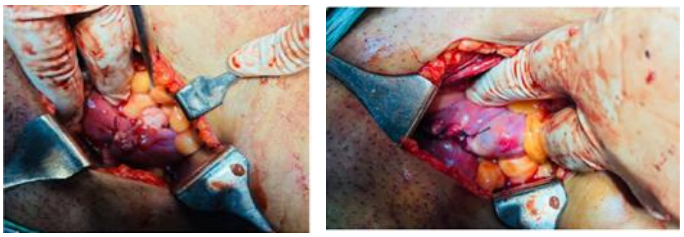
Transvaginal ultrasonography demonstrated a single intrauterine gestational sac corresponding to 6 weeks and 3 days of gestation without a detectable fetal pole. Given the positive pregnancy test and the patient's recent history of tubal ligation, tubal ligation failure was suspected. She was scheduled for suction evacuation followed by bilateral salpingectomy.

Intraoperative Incidental heterotopic pregnancy detected & findings included approximately 100 mL of hemoperitoneum and an enlarged uterus measuring 6to 8 weeks in size. A left-sided tubal abortion was noted lateral to the silasticband, while both ovaries appeared normal. Silastic bands were present in isthmic region of both tubes. Bilateral salpingectomy was performed, and the peritoneal cavity was irrigated with normal saline. Histopathological examination of the excised tissue confirmed the presence of chorionic villi in both the tubal and intrauterine specimens. The patient's postoperative course was uneventful, and she was discharged on the fifth postoperative day.



Left fallopian tube with silastic band

Post operative pics after B/L Salpingectomy



Discussion

Heterotopic pregnancy is a rare but serious condition, with an incidence of approximately 1 in 30,000 in natural conceptions. The risk increases markedly with assisted reproductive technologies, reaching up to 1 in1000 pregnancies. Although tubal ligation is an effective contraceptive method, failures can occur, and when they do, there is an increased risk of ectopic pregnancy. Various studies suggest that incidence of ligation failure is 0.13–1.3% of which 15–33 % will be ectopic[2]. Risk of failure is not limited to initial years of sterilization. In a large multicenter study, the annual risk of ectopic pregnancy for all methods combined in the 4thto 10th year after ligation was no lower than in the first 3 years[3]. The risk of ectopic pregnancy depends on method of tubal occlusion, operative technique, age of patient and condition of tube.

Several factors contribute to the risk of ectopic pregnancy post-tubal ligation:

Method of Tubal Occlusion: Techniques such as the application of silastic bands may have higher failure rates.

Timing of Sterilization: Procedures performed during the immediate postpartum period may be associated with increased failure due to oedematous and congested fallopian tubes, leading to incomplete occlusion.

Patient Age: Younger women may have a higher risk of sterilization failure due to greater fecundability.[3]

Ectopic pregnancy may be due to formation of tubo-peritoneal fistula after ligation through which sperm may

pass but the fertilized ovum cannot pass and implantation occurs in distal segment of the tube[5].Diagnosing heterotopic pregnancy requires a high index of suspicion, especially in patients presenting with abdominal pain after tubal ligation. Comprehensive evaluation, including urine pregnancy testing, serum β-hCG measurements, and transvaginal ultrasonography, is essential for accurate diagnosis. Heterotopic pregnancy is a surgical emergency that can cause significant risk to patient's life, therefore more attention must be given to rule out pregnancy including ectopic pregnancy while evaluating post sterilized women with missed period, pain in abdomen or irregular bleeding.

Conclusion

This case underscores the importance of considering heterotopic pregnancy in the differential diagnosis of women presenting with abdominal pain, even after tubal sterilization procedures. Clinicians should maintain a high level of suspicion and conduct thorough evaluations to ensure timely diagnosis and management. Usually laproscopic TL failure happens when there are defective bands or their improper placement. This complication can be prevented by taking a proper loop of fallopian tube before applying a band, so emphasizing on right technique. Proper surgical technique during tubal ligation and patient counseling about the potential rare risk of post-sterilization pregnancy are crucial components of care.

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