Intrauterine Pregnancy after Postpartum Tubal Ligation

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Introduction

- In 2015-2017, 64.9% of women aged 15-49 years used contraception[1]
- Common contraceptive methods include female sterilization, oral contraceptive pills (OCPs), long-acting reversible contraceptives, male condoms[1]
- Female sterilization is considered a permanent method of contraception[1-8]
- Graph 1 represents the effectiveness of various birth control methods for the prevention of pregnancy[2]
- Minilaparotomy, using the Pomeroy method (Figure 1), is one of the most common methods used for postpartum female sterilization[3-5]
- Lower failure rates are seen with postpartum partial salpingectomies as compared to other sterilization methods[4]
- Some potential causes of sterilization-failure include recanalization, improper procedure, tuboperitoneal fistula, misidentification of the round ligament as the fallopian tube, misusing the equipment, poor surgical technique, or unknown etiology[6,7]

Case Description

History

- 43-year-old Hispanic grand multigravida and grand multipara ($G_{10}P_{4145}$) at 24 weeks presented for routine prenatal visit
- Reported active fetal movement with no leakage of fluids, abdominal cramping, vaginal bleeding or signs of swelling of the lower extremities
- Denied any fever, chills, nausea, lightheadedness, headaches, visual changes, shortness of breath, vomiting, or painful ambulation
- Table 1 displays significant past obstetrical and surgical history
- No significant past medical history
- Medications: 1 prenatal vitamin tablet daily, aspirin 81 mg daily, weekly hydroxyprogesterone caproate 250 mg/mL injection due to previous premature birth history
- No known drug allergies
- Family history negative for breast, endometrial, or ovarian cancer
- Former 25 pack-year smoking history; quit 1 year ago; denies alcohol or illicit drug use

Physical Exam

Vital Signs

Blood Pressure: 124/62 mmHg (right arm sitting)
Temperature: 36.9°C
Pulse: 72 beats/minute
Respiratory Rate: 14 breaths/minute
Fetal Doppler: 144 beats/minute

- Clear, bilateral lung sounds to auscultation, no accessory muscle use with equal and bilateral chest wall expansion
- Regular rate and rhythm; no murmurs appreciated; 2+ dorsalis pedis and posterior tibialis pulses
- Fundal height 23.5 cm; appropriate for gestational age
- Abdomen soft, gravid with normoactive bowel sounds; non-tender to palpation; presence of linea nigra
- Leopold's maneuvers performed indicating vertex presentation
- No erythema or pitting edema; no palpable tender cords; negative Homan's sign
- 2+ patellar reflex; no signs of clonus or hyperreflexia
- Vaginal and breast exam deferred
- Rest of physical exam was within normal limits

Diagnostic Results

Urinalysis: Negative; no leukocyte esterase, nitrites, WBCs, proteinuria, hematuria

Abdominal Ultrasound:
1st Trimester Screening at 12 weeks and 5 days

- Single viable intrauterine pregnancy
- Anterior low-lying placenta. Normal structure.
- Crown-Rump Length: 77.5 mm
- Nuchal Translucency: 1.60 mm
- Fetal Anatomy:
  - Skull/Brain, Spine, Heart, Abdomen: appears normal
  - Stomach, Bladder, Hands, Feet: visible

Differential Diagnosis

- Intrauterine Pregnancy
- Ectopic Pregnancy
- Spontaneous Abortion

Final Diagnosis

Normal Intrauterine Pregnancy at 24 weeks following postpartum tubal ligation 13 years prior

Management

Patient will continue with her weekly hydroxyprogesterone caproate injections and will follow up in 4 weeks for her next routine prenatal visit. Will counsel patient on various methods of birth control for the future.

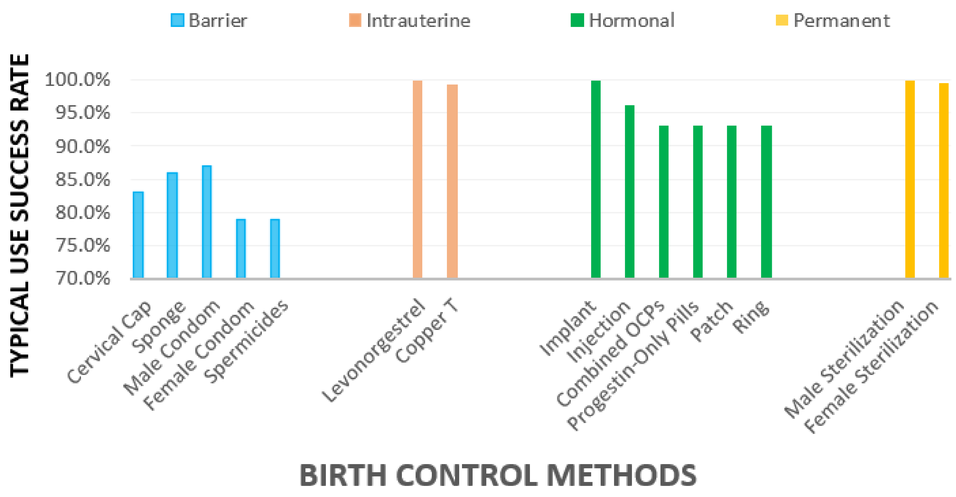
Discussion

- Extrauterine pregnancy, after a failed postpartum tubal sterilization, is more commonly reported as compared to a viable, intrauterine pregnancy[3,4,6-8]
- Most sterilization-failures occur within 1-5 years after the procedure[6]
- It is a rarity to see sterilization-failures more than 10 years after the procedure[6]
- Of the sterilization-failures studied, 97.3% were para 2 or greater[6]
- Further studies would be needed to determine whether multiparous women have an increased risk of sterilization-failures

Conclusions

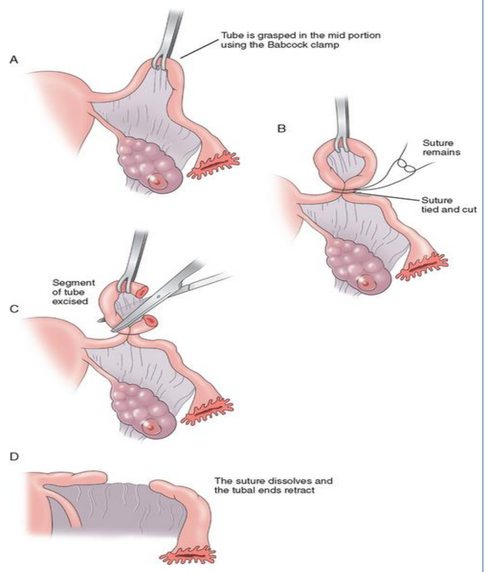
- Postpartum tubal ligations are considered one of the most effective and permanent methods of contraception performed in women no longer desiring fertility
- Failed tubal ligations often result in ectopic pregnancies that can become life-threatening if the diagnosis is missed and untreated
- Despite any history of seemingly permanent female sterilization, or other highly effective contraceptive methods, providers must always have a high clinical suspicion of pregnancy for all female patients of reproductive age
- It is important to counsel women of the risk of tubal ligation failure and to follow-up with any symptoms of amenorrhea, abnormal uterine bleeding, or sudden abdominal pain

Graph 1. Effectiveness of Various Methods of Contraception



Data from Efficacy, safety, and personal considerations.[2]

Figure 1. Pomeroy Method



Adapted from Pomeroy method for tubal ligation.[5] https://abdominalkey.com/surgical-sterilization

Table 1. Obstetrical & Surgical History

Grand Multigravida & Multipara

1994: Emergency Cesarean Delivery (40 weeks)
2000: Vaginal Birth after C-section (VBAC) (40 weeks)
2002: VBAC (40 weeks)
2003: Surgical Therapeutic Abortion
2004: Surgical Therapeutic Abortion
2005: Surgical Therapeutic Abortion
2006: VBAC (40 weeks)
2007: VBAC (36 weeks) followed by postpartum tubal ligation
2018: Spontaneous Abortion at 6 weeks
2020: Intrauterine Pregnancy (currently at 24 weeks)

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