Permanent Sterilization

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What is Sterilization?
What is Sterilization?

A permanent form of birth control.

- most popular form of birth control world wide
  - 47.3% of married couples
What are the types of Sterilization?
What are the types of Sterilization?

- Vasectomy
- Tubal Sterilization
  - 30.2% of married couples
Don't pay $1000...
To have a doctor perform routine surgery that you can do from the comfort of your own home.

Vasectomy in a box comes with everything you need to perform your own quick, easy and affordable vasectomy in your home, car or RV.

* Vasectomy In A Box is 97.6% effective
What is tubal sterilization?
What is tubal sterilization?

- Sterilization procedure for women
- Closes off the fallopian tube
History

- 1834
- First tubal sterilization reported was 1881
- Since then various methods have been described
- 1972 US federal courts removed legal restrictions that limited use to medical conditions
Outline

- Timing and Types of tubal sterilization
- CREST study
- Risks of tubal sterilization
- Benefits of tubal sterilization
- Patient counseling
When can a tubal sterilization be performed?
When can a tubal sterilization be performed?

- Postpartum
  - Immediately after vaginal delivery
  - At the time of cesarean delivery
- Interval
- At the time of D&C
Postpartum tubal sterilization

- At the time of cesarean or via mini laparotomy after a vaginal delivery
- Should not extend hospital stay
- Regional or general anesthesia
  - May use the epidural anesthesia during labor
Postpartum tubal sterilization

- Many obstacles
  - Lack of available OR space/time
  - Religiously affiliated hospitals
  - Concern for patient regret
  - Lack of consent process
Interval tubal sterilization

- Done separate from the pregnancy period
- Can be performed via laparoscopy or hysteroscopy
  - Also laparotomy and colpotomy
- Ideally perform during follicular phase or using an effective form of contraceptive
  - Why?
Tubal sterilization at the time of D&C

- No increase risk compared with an interval procedure
- Can use a single anesthetic for both procedures
- Laparoscopy or minilaparotomy
- No increase risk of regret outside other risk factors
What are the types of tubal sterilization?
What are the types of tubal sterilization?

- Tubal excision
  - Pomeroy
  - Parkland
  - Irving
  - Uchida

- Electrocoagulation
  - Mono vs bipolar

- Mechanical
  - Banding (Falope ring) 17.7/1000
  - Clips (Hulka, Filshie) 36.5/1000

- Hysteroscopic
Tubal Excision

- Typically performed at the time of cesarean section or after a vaginal delivery via mini laparotomy
- Can be done laparoscopically
- One of the most effective methods
  - 7.5/1000 done PP
  - 20.1/1000 if done as interval procedure
- More technically difficult
- Most common complication is bleeding
Pomeroy
Dr. Ralph Pomeroy about a century ago
Very effective
One of most common methods
Plain cat gut suture
  ◦ Resorbs quickly to allow retraction of the tube
  ◦ Why not use a suture that is retained longer?
Biggest risk is slippage of the suture
Modified Pomeroy

- Variation of Pomeroy
- Two sutures used to ligate the knuckle of fallopian tube as opposed to a single suture
- Goal is to reduce likelihood of slippage and subsequent bleeding
Parkland
Parkland

- Popularized by Parkland Memorial Hospital
- Low failure rate
- Plain cat gut suture
- Similar to Pomeroy in that it is commonly used and risk of slippage of suture
Failure less <1/1000
Greater operative blood loss
Uchida

- Most complex
- No failures documented in >20,000 procedures
- Most common complication is bleeding
Electrocoagulation

- Bipolar is safer than Unipolar, but less effective
  - Bowel injury is common with unipolar
  - 24.8/1000 vs 7.5/1000
- Using the correct technique is important
- Most failures occur due to incomplete destruction of the endosalpinx
Bipolar tubal sterilization

- Use cutting current with power setting of 25-35 watts
- Grasp fallopian tube 2-3 cm from cornua
- Apply current with ammeter, optical meter, or sound meter to aid in determining complete fulguration
- Regrasp at sites immediately adjacent to initial site to fulgarate 3 cm of contiguous tube.

- Transecting may increase risk of fistula formation.
Hysteroscopic Sterilization

- Many attempts via various methods with little success
  - Corrosive agents, mechanical obstruction, thermal energy
  - High failure and complication rates
- Currently there is one hysteroscopic method available
  - Microinsert or ESSURE
Hysteroscopic sterilization: ESSURE

- Metal and polymer microinsert 4cm in length, 1-2 mm wide
- Inner coil of stainless steel and polyethylene terephthalate (PET)
- Outer coil nickel titanium
Hysteroscopic sterilization: ESSURE

- Placed under hysteroscopic guidance into proximal fallopian tube and deployed
- PET fibers stimulate benign tissue growth resulting in occlusion
- 12 week after placement an HSG is performed to confirm PLACEMENT and OCCLUSION
- An effective form of contraception must be used until HSG confirmation
Hysteroscopic sterilization: ESSURE
Hysteroscopic sterilization: ESSURE
HSG confirmation
Hysteroscopic sterilization

- Not available at time of CREST study
- No pregnancies reported in initial trials
- Subsequent studies showed low failure rates
  - 2.6/1000 over 5 years
  - 64/50,000 in one study
Hysteroscopic sterilization

- **Advantages**
  - No incision
  - Less post operative pain
  - Avoid abdomen (extensive adhesions)
  - Can be performed on patients with comorbidities

- **Disadvantages**
  - Need contraception for 3 months after placement
  - Need for follow up imaging
  - Higher risk of unilateral tubal occlusion
Hysteroscopic sterilization: Contraindications

- Uncertainty about non-reversible sterilization
- Pregnancy/suspected pregnancy
- Less than 6 weeks from delivery-abortion
- Active or recent pelvic infection
- Uterine or tubal pathology that impedes access to one or both tubal ostia
- Known allergy to contrast media
  - Nickel allergy is no longer a contraindication
CREST study

- US Collaborative Review of Sterilization
- Multicenter prospective cohort study conducted from 1978-1986
- >10,000 women who underwent tubal sterilization
- Followed 5-14 years
- Primary outcome: sterilization failures
CREST Study: Results

- 143 sterilization failures
- For all methods combined 10 year cumulative probability 18.5/1000
- Highest failure rate:
  - Clips 36.5/1000
- Lowest failure rate:
  - Unipolar 7.5/1000
  - PP partial salpingectomy 7.5/1000
- Failure rates highest among women sterilized at a younger age with bipolar and clips
  - Those <28 had a higher failure rate than those ≥ 34
CREST study

- Failure rates higher than expected
- Not all methods are created equal
- In general, the younger the individual at time of sterilization the more likely there will be a failure
- These numbers may be underestimates
Risks of tubal sterilization

- Surgical risks
  - Overall low with all methods

- Failure
  - Type of tubal sterilization
  - Age

- Ectopic

- Regret
  - Age
Benefits of tubal sterilization

- Permanent
- Effective
- No hormones
- Few absolute contraindications
- Reduced incidence of ovarian cancer
Patient Counselling

KNOW YOUR BIRTH CONTROL OPTIONS
(YES, YOU HAVE OPTIONS)
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Patient Counselling

- VERY important
- One of the biggest risks after tubal sterilization is REGRET
  - 14 year cumulative probability of requesting reversal information was as high as 40.4% in ages 18-24
  - Overall 12.7%
  - Timing: PP
  - Other risk factors: less information, lack of support for other methods, decision under pressure
What to include

- Give unbiased information
- Review alternative methods
- Reiterate permanency
- Discuss risk of failure
- Describe the procedure, anesthesia
- Counsel on risk of regret
  - ID factors
- Other
  - Individual reason for sterilization
  - Partner awareness
  - STI protection
  - Menses
  - Continue pap smears
Resources


QUESTIONS?