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To IUD or not to IUD

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Objectives

1. KNOW THE HISTORY OF INTRAUTERINE DEVICES
2. UNDERSTAND THE USE OF IUD WITHOUT OR WITHOUT MEDICATION
3. DISCUSS THE DIFFERENCE OF IUDS ON THE MARKET TODAY
4. DEMONSTRATION OF HOW TO INSERT AND REMOVE ALL TYPES OF IUDS

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What is an IUD?

- An intrauterine device (IUD) is a device that is placed in the uterus to prevent pregnancy.
- A plastic string is attached to the end to ensure correct placement and for removal.
- IUDs are an easily reversible form of birth control, and they can be easily removed.
- An IUD is a form of Long-Acting Reversible Contraception (LARC).
What is an IUD

- The intrauterine device (IUD) is the most popular means of reversible birth control in the world, with 160 million users.
- The failure rate of IUDs almost similar to that of tubal sterilization.
- IUDs demonstrated risk of expulsion ranging from 5% to 22%.

What an IUD is NOT

- Incorrect belief that the principal mechanism of action of IUDs is prevention of implantation of fertilized eggs (abortion).
- Prevention of fertilization seems to be the dominant mode of action.
- World Health Organization Scientific Group: “It is unlikely that the contraceptive efficacy of IUDs results mainly or exclusively from their capacity to interfere with implantation; it is more probable that they exert their antifertility effect beyond the uterus and interfere with steps in the reproductive process that take place before the ova reach the uterine cavity.”

History of the IUD
History of intrauterine devices for contraception

- Nomads inserted stones in camels' uterus prior to long journeys across the desert.
- Hippocrates is credited with first suggesting that small objects in the human uterus might prevent pregnancies.
- Late 19th century, first precursors of modern IUDs emerged: the Stem Pessary made of metals (gold or silver) or glass. The stem was inserted into the uterus.
- In 1909, Dr. Richard Richter in Poland, fashioned the flexible ring with suture material and inserted it into the uterus with a notched instrument.
- By 1930s, true intrauterine devices were being developed: silk thread wrapped with silver wire.
- 1960, the Lippes Loop, a sinuous length of plastic wire that straightened for insertion but then curved back and forth in the uterus.
- 1968, The Dalkon Shield, as it was called, had little feet protruding out on the sides to keep it from being expelled prematurely from the uterus.

Lippes Loop
First distributed in 1962
Intended to remain until menopause.

The Dalkon Shield disaster
- The problem was that the feet dug into the uterine wall and stuck. In order to get the device out, a super-strong multifilament string was added, which turned out to be the perfect highway for germs to travel up into the normally sterile uterus.
- By the time the Shield was taken off the market, it was thought to be responsible for 18 deaths and 200,000 infections or other complications.
- In a media blitz, the company directed users to see a physician and offered to pay for exams even if a shield was not found.
- 1989 legal settlement created a $2.5 billion trust fund to pay victims' claims.
Copper T
- In Europe, a small plastic T wrapped in copper with a nylon filament tail became the international gold standard.
- It is 20x more effective than the Pill at preventing pregnancy.
- The copper is toxic to sperm.
- Last up to 2 decades.
- Doesn’t fit every womb.
- Menstrual flow and cramps tend to increase by half over the first six months before gradually returning to pre-insertion levels.
- Isn’t a good option for women who have problem periods or who teeter on the edge of anemia.

Hormonal IUD
- Beginning in the 1970s, the next generation of IUD was being developed.
- Instead of releasing copper ions, this new wave of technology releases a micro-dose of a hormone, levonorgestrel, sometimes found in birth control pills.
- Decrease cramps and bleeding by 90%.
- Thin the uterine wall so they can be used to treat endometriosis, allowing some women to avoid hysterectomies.
- 2000 approved in US, at first only for monogamous women who had already had babies.

Mechanism of Action
- Hinder ascent of sperm to the fallopian tubes.
- Sterile foreign body reaction in the uterine cavity.
- Cellular and biochemical changes that may be toxic to sperm.
- Pre-fertilization spermicidal action and a post-fertilization inhibition of uterine implantation.
CONTRAINDICATIONS FOR IUD INSERTION

- pregnancy
- current, recurrent or recent (3 mo) PID or STI
- puerperal or postabortal sepsis
- severely distorted uterine cavity
- unexplained vaginal bleeding
- cervical or endometrial cancer
- gestational trophoblastic disease
- Copper allergy (for copper IUD)
- breast cancer (for LNG-IUS)

Timing of Insertion: non postpartum patient

- < 7 days since the start of a normal menses
- No sexual intercourse since the beginning of the last normal menses
- Has been using a reliable method of contraception correctly and consistently
- < 7 days since a spontaneous or induced abortion
- < 4 weeks postpartum
- < 6 months postpartum, amenorrheic since delivery, and exclusively or almost exclusively breast feeding (at least 85% of infant feedings are breast feedings)

Uncertain pregnancy?

- Women who want to begin using an IUD (Cu-IUD or LNG-IUD), in situations in which the health care provider is uncertain whether the woman is pregnant
- The woman should be provided with another contraceptive method to use until the health care provider is reasonably certain that she is not pregnant and can insert the IUD
- Pregnancies among women with IUDs are at higher risk for complications such as spontaneous abortion, septic abortion, preterm delivery, and chorioamnionitis
Non-hormonal Intrauterine Device

Copper T (Cu-IUD)
- Copper T 380 (known as Paragard) which contains 380 sq mm of copper wire and is effective for 10 years.
- The Cu-IUD can be inserted at any time if it is reasonably certain that the woman is not pregnant.
- Insert within 5 days of the last act of unprotected sexual intercourse as an emergency contraceptive.
- If the day of ovulation can be estimated, the copper inserted 5 days after sexual intercourse is as long as insertion does not occur >5 days after ovulation.

Bleeding Irregularities with Cu-IUD Use
- Before insertion, provide counseling about potential changes in bleeding patterns during Cu-IUD use.
- Unscheduled spotting or light bleeding, as well as heavy or prolonged bleeding, is common during the first 3–6 months, is generally not harmful, and decreases with continued Cu-IUD use.
- Consider an underlying gynecologic problem, such as Cu-IUD displacement, an STD, pregnancy, or new pathologic uterine conditions (e.g., fibroids, myoma). If an underlying gynecologic problem is not found and the woman requests treatment, the following treatment option can be considered during days of bleeding:
  - NSAIDs for short-term treatment (5–7 days)
- If bleeding persists and the woman finds it unacceptable, counsel her on alternative contraceptive methods, and offer another method if it is desired.
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Hormonal Intrauterine Device
LNG-IUD

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Skyla
- 13.5 mg levonorgestrel
- Estrogen free
- (Actual size: 1.18"
- 3 years

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Skyla: the good and bad
- Three years
- Less than 0.9% pregnancy
- Smallest IUD in US
- Estrogen free
- Increase Risk for ectopic pregnancy
- Risk for perforation on insertion
- Increase risk of ovarian cyst, 14%
- Breakthrough bleeding
Mirena/Liletta
- 52.0 mg (levonorgestrel-releasing intrauterine system)
- Prevent pregnancy for as long as you want for up to 5 years.
- Indication for women with heavy periods.
- Approved for use as a LARC 2000, menorrhagia 2009.

- Up to 5 years of contraception
- Periods over time usually become shorter, lighter, or may stop
- Reversible
- Estrogen free
- HCPCS Code J7302

Bleeding and spotting may increase in the first 3 to 6 months and remain irregular. Don’t use if you have a pelvic infection, get infections easily or have certain cancers. Less than 1% of users get a serious infection called pelvic inflammatory disease.

<table>
<thead>
<tr>
<th>Style</th>
<th>Mirena</th>
<th>Pivotal</th>
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<tbody>
<tr>
<td>Works by releasing a low amount of hormones 24 hours a day.</td>
<td>Works by releasing a low amount of hormones 24 hours a day.</td>
<td>Works by releasing a small amount of hormone in 0.1 mg.</td>
</tr>
<tr>
<td>Plastic frame of the IUD is 1.3 by 1.2 inches square.</td>
<td>Plastic frame of the IUD is 1.3 by 1.2 inches square.</td>
<td>Plastic frame of the IUD is 1.3 by 1.4 inches.</td>
</tr>
<tr>
<td>Tube used to place the IUD is 0.19 inches wide.</td>
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<td>Tube used to place the IUD is 0.19 inches wide.</td>
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<tr>
<td>Can be used for up to 5 years.</td>
<td>Can be used for up to 5 years.</td>
<td>Can be used for up to 5 years.</td>
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Slide 25

LNG-IUD

<table>
<thead>
<tr>
<th></th>
<th>Mi nova</th>
<th>Style</th>
<th>intra</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hormone</td>
<td>levonorgestrel</td>
<td>levonorgestrel</td>
<td>levonorgestrel</td>
</tr>
<tr>
<td>Utrary</td>
<td>Y%</td>
<td>Y%</td>
<td>Y%</td>
</tr>
<tr>
<td>String color</td>
<td>black</td>
<td>black</td>
<td>blue</td>
</tr>
<tr>
<td>Size</td>
<td>32 mm x 32 mm</td>
<td>27 mm x 30 mm</td>
<td>28 mm x 32 mm</td>
</tr>
<tr>
<td>Commercial cost</td>
<td>$610.11</td>
<td>$600.30</td>
<td>$573.30</td>
</tr>
<tr>
<td>IUDs cost</td>
<td>$322.32</td>
<td>$491.18</td>
<td>$53.30</td>
</tr>
<tr>
<td>Evidence-based duration</td>
<td>7 years</td>
<td>2 years</td>
<td>7 years*</td>
</tr>
<tr>
<td>Dose of Levonorgestrel</td>
<td>52 mg</td>
<td>15.5 mg</td>
<td>50 mg</td>
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</tbody>
</table>

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Who cannot use LNG-IUD

- Are or might be pregnant; cannot be used as an emergency contraceptive.
- Have had a serious pelvic infection called (PID), unless you have had a normal pregnancy after the infection went away.
- Have an untreated pelvic infection, now.
- Have had a serious pelvic infection in the past 3 months after a pregnancy.
- If you or your partner have multiple sexual partners.
- Problems with your immune system, intravenous drug abuse.
- Have or suspect you might have cancer of the uterus or cervix.
- Have bleeding from the vagina that has not been explained.
- Have liver disease or a liver tumor.
- Have breast cancer or any other cancer that is sensitive to progestin (a female hormone), now or in the past.
- Have an intrauterine device in your uterus already.
- Have a condition of the uterus that changes the shape of the uterine cavity, such as large fibroid tumors.
- Are allergic to levonorgestrel, silicone, polyethylene, silica, barium sulfate or iron oxide.
Relative contraindications

- Include risk factors for HIV or STI,
- HIV seropositive status,
- Recent (48 hr to 4 wk) childbirth,
- Ovarian cancer
- Benign gestational trophoblastic disease

Bleeding Irregularities (Including Amenorrhea) with LNG-IUD Use

- Irregular Bleeding (Spotting, Light bleeding, or heavy or prolonged bleeding)
  - Consider an underlying gynecological problem, such as endometriosis, fibroids, or an underlying hormonal imbalance. If any symptoms persist, refer the woman for a gynecological evaluation.
  - Offer her alternative contraceptive methods, and refer her to another method if desired.
- Amenorrhea
  - Amenorrhea does not require any medical treatment. Provide reassurance.
  - If amenorrhea occurs and does not resolve, it may signal a problem, such as an underlying hormonal imbalance. If amenorrhea persists and the woman finds it unacceptable, counsel her on alternative contraceptive methods, and refer her to another method if desired.

% unintended pregnancy within the first year of use

Cu-IUS
- 0.8 Typical use
- 0.6 Perfect use
- 78% using it AFTER 1 YEAR

Lng-IUS
- 0.2 Typical Use
- 0.2 Perfect Use
- 80% using it AFTER 1 YEAR
Screening for STI prior to IUD insertion

- Current evidence does not support routine screening for STIs in low-risk women prior to IUD insertion.
- Screening can be performed at the time of IUD insertion, and insertion should not be delayed.
- Women with purulent cervicitis or current chlamydial infection or gonorrhea should not undergo IUD insertion.
- Women who have a very high individual likelihood of STD exposure (e.g., those with a currently infected partner) generally should not undergo IUD insertion. For these women, IUD insertion should be delayed until appropriate testing and treatment occur.

WHO 2014 Update

- Women without STIs undergoing insertion of modern copper-containing and levonorgestrel (LNG)-releasing IUDs is associated with only a small transient risk for PID (9.7 per 1000 women-years) that exists primarily in the first 20 days following placement.
- Study: PID among women with/without STIs at the time of copper-bearing IUD insertion, the absolute risk of PID ranged from 0-5% among women with STIs compared with 0-2% among women without STIs at insertion.

Management of the IUD when a Cu/LNG-IUD User Is Found To Have PID

- Treat the PID according to the CDC Sexually Transmitted Diseases Treatment Guidelines.
- Provide comprehensive management for STIs, including counseling about condom use.
- The IUD does not need to be removed immediately if the woman needs ongoing contraception.
- Ensure the woman is 90-95% safe if a single course of oral antibiotics is used for PID.
- If the woman wants to continue contraception, intravenous antibiotics and consider removal of the IUD.
- If the woman wishes to discontinued or, because the IUD remains after antibiotics have been started to avoid the potential for bacterial spread resulting from the removal procedure.
- If the IUD is removed, consider ECP if appropriate. Counsel the woman on alternative contraceptive methods, and offer another method if not desired.
Management of the IUD when a Cu/LNG-IUD User Is Found To Be Pregnant

- Evaluate for possible ectopic pregnancy.
- Advise the woman that she has an increased risk for spontaneous abortion (including septic abortion that might be life threatening) and of preterm delivery if the IUD is left in place.
- The removal of the IUD reduces these risks but might not decrease the baseline level of risk for a pregnancy without an IUD.
- If she does not want to continue the pregnancy, counsel her about options.
- If she wants to continue the pregnancy, advise her to seek care promptly if she has heavy bleeding, cramping, pain, abnormal vaginal discharge, or fever.
- If the IUD strings cannot be located, it might have been expelled or perforated the uterine wall. Perform sonography for location.
- Removing the IUD improves the pregnancy outcome if the IUD strings are visible or the device can be retrieved safely from the cervical canal.

PRE-PROCEDURE: ASSESSMENT AND COUNSELLING

- Informed of the risks of IUD insertion
- Uterine perforation (0.6–1.6 per 1000 insertions), infection (as discussed above, due mostly to contamination with endocervical bacteria and exposure to STIs), expulsion (10% in the first year declining to 6% in the first 5 years), and failure of device;
- Use protection for the first 7 days after insertion
- Counseling about potential changes in bleeding patterns during LNG-IUD use.
- Unscheduled spotting or light bleeding is expected during the first 3–6 months of LNG-IUD use, is generally not harmful, and decreases with continued LNG-IUD use.
- Over time, bleeding generally decreases with LNG-IUD use, and many women experience only light menstrual bleeding or amenorrhea.
- Heavy or prolonged bleeding, either unscheduled or menstrual, is uncommon during LNG-IUD use.

Switching from an IUD

- If the woman has had sexual intercourse since the start of her menstrual cycle and it has been >5 days since menstrual bleeding started, theoretically, residual sperm might be in the genital tract, which could lead to fertilization if ovulation occurs.
- Advise the women to retain the IUD for at least 7 days after combined hormonal contraceptive is initiated and return for IUD removal.
- Advise the woman to abstain from sexual intercourse or use barrier contraception for 7 days before removing the IUD and switching to the new method.
- Advise the woman to use ECPs at the time of IUD removal.
Insertion of IUD

- NEGATIVE Pregnancy test!
- Signed Consent; start time out procedure
- Pap, Chlamydia and gonorrhea screen
- Testing for STIs does not need to be completed before IUD insertion.
- Cleanse cervix 3x with iodine
- apply tenaculum at 10 and 2
- Sound the uterus should sound to a depth of 6 to 10 cm
- Slide the marker on the inserter to desired depth
- Apply gentle traction on tenaculum while inserting

References


