The occasional intrauterine contraceptive device insertion

Peter Hutten-Czapski, MD
Haileybury, Ont.
James Goertzen, MD
Thunder Bay, Ont.

Correspondence to:
Dr. Peter Hutten-Czapski,
293 Meridian, Haileybury
ON P0J 1K0; phc@srpc.ca

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The intrauterine contraceptive device (IUCD) is an effective but underused method of contraception in Canada. In the 1950s, 10% of women who were of reproductive age and using contraception used an IUCD.[1] However, IUCD use quickly fell after the defects of the poorly designed Dalkon Shield (Dalkon Corp., A.H. Robins) were widely publicized in the 1970s.[2] Its multifilament string was associated with an increased rate of pelvic infections that resulted in product litigation and had an impact on the further use of all IUCDs in North America.[3] Recent data shows that the rate of pelvic inflammatory disease (PID) approaches the general population 3 weeks after insertion, showing that previous IUCD infection rates were overestimates.[4] Simultaneously, newer IUCDs such as the Mirena have been shown to be about as effective as a tubal ligation.[5]

IUCD options (Canada)

Figure 1 shows the various IUCD options available in Canda.

1. Mirena
Manufacturer: Leiras Oy
Distributor: Berlex
Insertion diameter: 4.8 mm
Pregnancy rate: 0.1/100 woman years
Cost: $360

2. Flexi-T 300
Manufacturer: Prosan
Distributor: Trimedic Supply Network
Insertion diameter: 3 mm
Pregnancy rate: 0.6/100 woman years
Cost: $67

3. Nova-T 200
Manufacturer: Leiras Oy
Distributor: Berlex
Insertion diameter: 3.7 mm
Pregnancy rate: 2/100 woman years
Cost: $80

Indications

IUCDs can be used for birth control along with the treatment of noncontraceptive clinical conditions. Although all IUCDs are effective in the prevention of pregnancy, the Mirena and Flexi-T 300 have the lowest failure rates. Many family physicians offer the IUCD as an option to nulliparous patients since the smaller Flexi-T 300 or the use of cervical blocks have made insertion easier. All copper IUCDs are highly effective emergency contraceptives if inserted

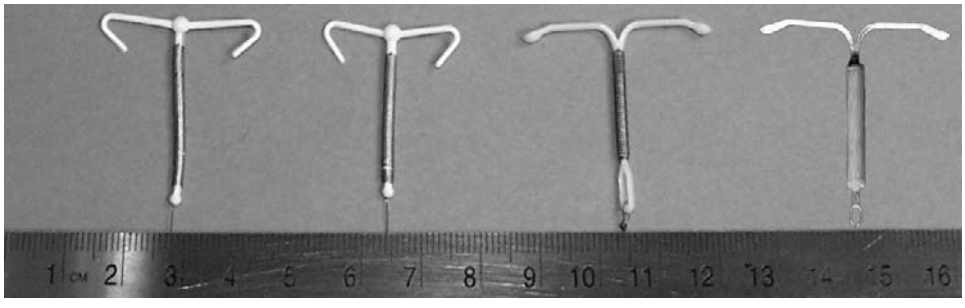

Fig. 1. Various intrauterine contraceptive devices available in Canada. From left to right: the Flexi-T+, the Flexi-T 300, the Nova-T 200 and the Mirena.

within 7 days of unprotected intercourse.[6]

Mirena is an effective pharmacological treatment for menorrhagia because it reduces menstrual blood loss[7] and increases hemoglobin concentration.[8]

Contraindications

Absolute contraindications for IUCD insertion include pregnancy, active sexually transmitted disease including PID within the previous 3 months, along with sepsis following childbirth or abortion. Owing to the progestational component, Mirena is contraindicated if patients have a current deep venous thrombosis, active liver disease or hormone responsive tumours of the breasts or ovaries.

Risks

The increased rate of PID with IUCD insertion is related to having a sexually transmitted disease at the time of insertion. Thus the rate of PID is 9.7/1000 woman years in the first 20 days of IUCD insertion; it then drops to 1.6/1000 woman years, which is similar to the general population.[4]

Although perforation infrequently occurs (0.1%) with IUCD insertion, there is a greater chance of perforation within 8 weeks of childbirth. Thus waiting 10 to 12 weeks after childbirth is prudent.

General considerations

IUCD insertion, hysterosalpingraphy and endometrial biopsy are cross-related procedures with similar steps and potential risks. Thus, if you are experienced in one of these procedures, it is relatively simple to occasionally complete one of the others. All IUCDs are packaged with helpful instructions. Even experienced practitioners should briefly review the insertion instructions before each insertion since there are critical differences in the insertion of each manufacturer's product.

Equipment list

- Vaginal speculum
- Sterile gloves
- Single tooth tenaculum
- Uterine sound
- Sponge forceps
- Long scissors
- Antiseptic solution
- Cotton balls or 2 × 2 gauze
- Cervical dilators (optional)

Before insertion

Review with the patient the anticipated procedure and obtain verbal consent after discussing risks and benefits. An early pregnancy should be ruled out on the basis of history or with a pregnancy test if there is any uncertainty. Ensure that other contraindications are not present.

Consider asking the patient to take Misoprostel (400 μg 6–12 hours before insertion) to facilitate cervical dilation, if required.[9] Insertion pain may also be decreased with the use of a nonsteroidal anti-inflammatory drug several hours before insertion.

Inserting the IUCD

The patient is draped and positioned for an initial pelvic exam to assess the size and position of the uterus. After changing into sterile gloves, a speculum is inserted. The upper vagina and cervix are cleaned with antiseptic. The cervix is inspected for signs of cervicitis or other abnormalities. As an option, topical Xylocaine gel can be applied to the cervix, allowing 3 minutes for it to take effect, as this has been shown to reduce insertion pain.[10]

The anterior lip of the cervix is then grasped with a single tooth tenaculum. Apply the tenaculum slowly and only to the first click to minimize discomfort. Gentle traction is then applied to the tenaculum, which stabilizes the uterus, straightens the uterine axis and helps ensure proper IUCD placement at the uterine fundus.

A uterine sound is gently passed through the cervix and into the uterine fundus. The Mirena, the Flexi-T+ and Nova-T 200 IUCDs are designed for a uterine cavity between 6.5 cm and 9 cm. The Flexi-T 300 is smaller and can be used in uterine cavities 5 cm and up. Once the uterus has been sounded successfully, remove the IUCD from it sterile packaging. If you are unsuccessful with sounding, the risk of perforation is likely increased. If you choose to proceed, use the smallest Hager dilator to cannulate the cervical os and gently dilate it further.

The actual insertion of the IUCD varies with the type chosen. Insertion techniques for the 2 models newly available in Canada are described.

Flexi-T 300 and Flexi-T+

The Flexi-T applicator is a plastic insertion tube of 3-mm diameter containing the string and base of the IUCD, and a blue flange for indicating the uterine

depth. Using a sterile technique, the flange is slid along the insertion tube to position it to correspond with the sounded depth of the uterine cavity thus releasing the thread.

With gentle traction on the tenaculum, pass the applicator to the level of the fundus, as indicated by the position of the flange (Fig. 2). Gently pull on the thread to check if the arms are held by the lateral walls of the uterus. Then reseat the IUCD by passing the applicator back to the fundus (Fig. 3). Remove the applicator with a twisting motion (Fig. 4) and cut the threads about 2 cm to 3 cm from the cervix.

Mirena

The Mirena applicator consists of a plastic insertion tube of 4.8-mm diameter containing the string and base of the IUCD, a flange for indicating the uterine depth and a handle. The upper portion of the applicator's handle has a green slider and the lower end has a cleft.

Using sterile technique, retract the IUCD into the insertion tube by pulling the threads firmly until the IUCD slides into the tube. Cleat the threads in the handle's cleft. The flange is then slid along the insertion tube to position it to correspond to the sounded uterine depth. Ensure that the green slider is fully forward.

With gentle traction on the tenaculum, pass the applicator to 1 to 2 cm less than the distance marked by the flange (Fig. 5). Hold the applicator steady, move the slider back toward the handle until it reaches an indicator mark and releases the IUCD arms (Fig. 6). Allow 5 seconds for the IUCD arms that you have just released to sweep down into position.

Advance the applicator to the level of the fundus, as indicated by the position of the flange (Fig. 7). Then release the threads by pulling the slider to the

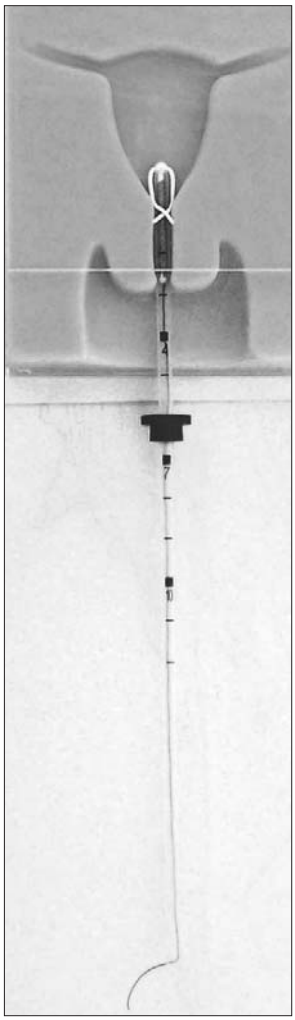

Fig. 2. The insertion of the Flexi-T.

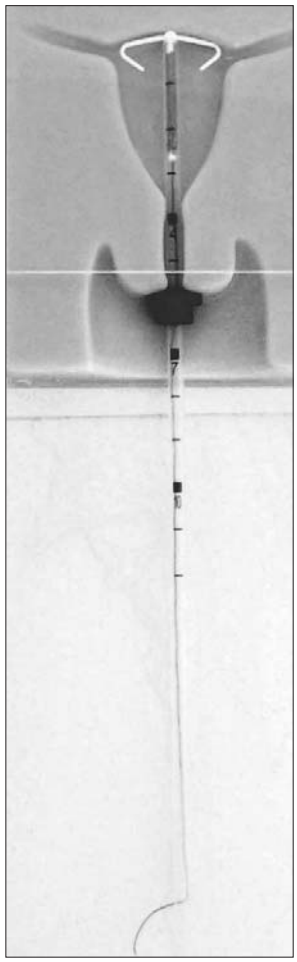

Fig. 3. The Flexi-T intrauterine contraceptive device is "pushed in" and inserted to sounded depth by passing the applicator back to the fundus.

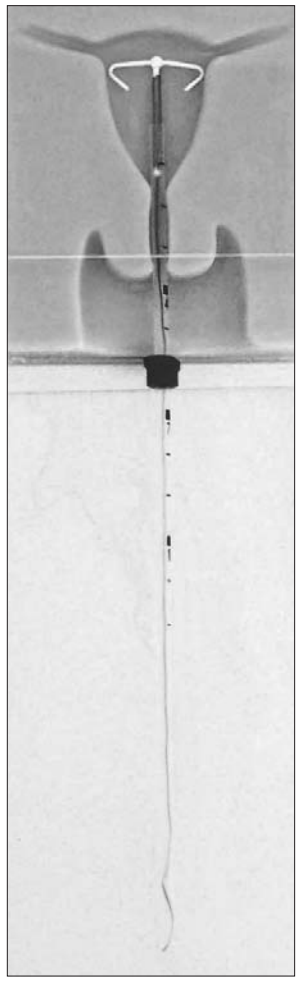

Fig. 4. The tube is removed with a twisting motion.

position closest to you; an audible "click" signals release of the threads. Remove the applicator and cut the threads about 2 cm to 3 cm from the cervix.

After insertion

Following insertion, the strings are cut, the tenaculum is removed slowly and the cervix is examined before the speculum is removed. Ask the patient to lie for several minutes before sitting and dangling her legs. If she is not feeling lightheaded, she can then stand and dress herself. If a vasal vagal reaction occurs, place the patient in a lying position.

The patient may experience spotting and cramps for a few days for which she can take a nonsteroidal anti-inflammatory drug. Women should be advised to seek medical help at any time if they develop symptoms of pelvic infection, persistent menstrual

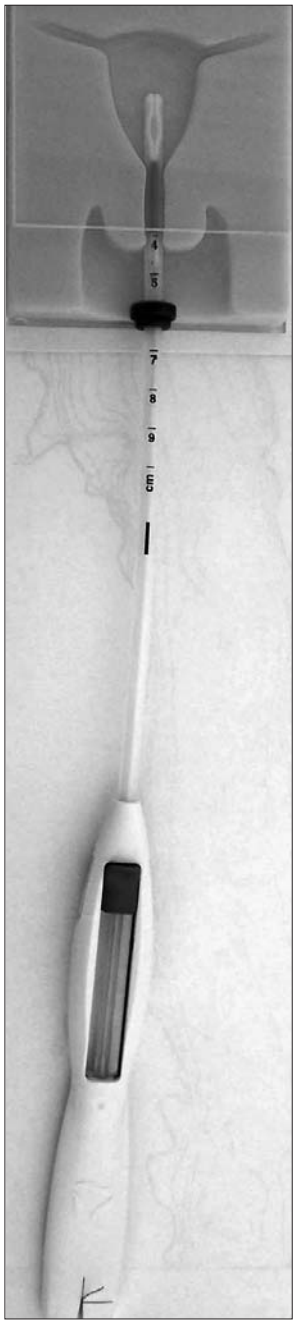

Fig. 5. Using the Mirena with slider forward and threads cleated, this figure shows the insertion of the intrauterine contraceptive device to within 2 cm of sounded depth.

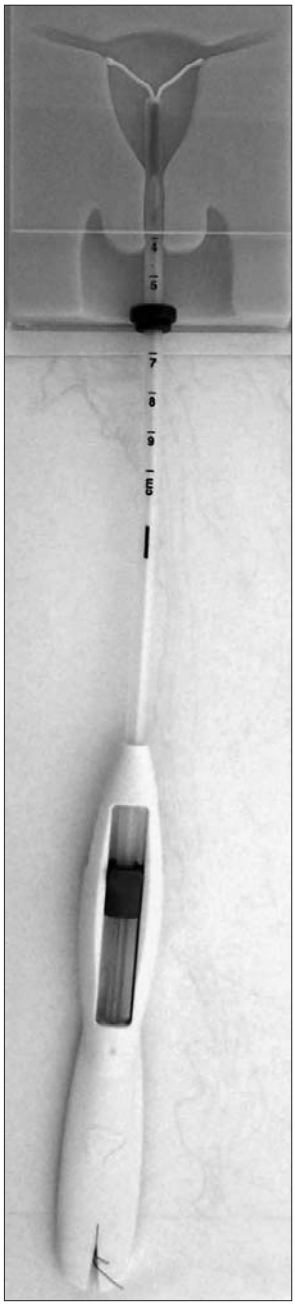

Fig. 6. The arms are released by pulling the slider back to the mark.

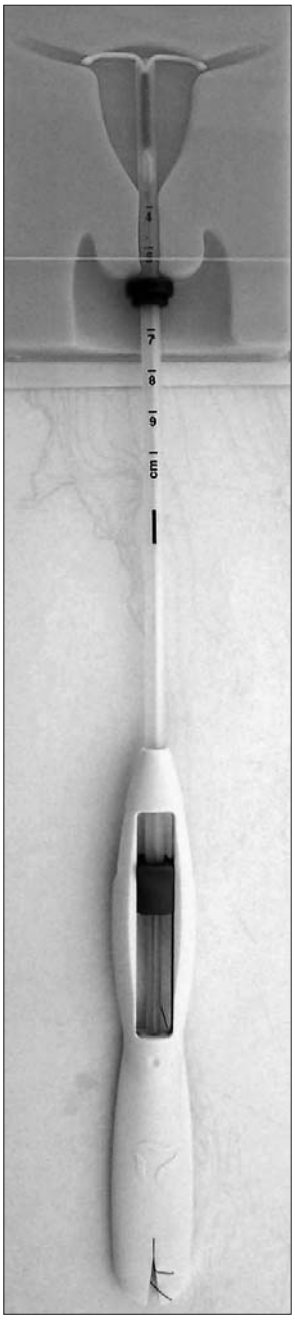

Fig. 7. Advance the applicator to the level of the fundus, as indicated by the position of the flange.

abnormalities, a missed period or nonpalpable threads. Excessive or persistant pain or bleeding may signal infection or perforation. If there is a question as to placement of the IUCD, perform a radiograph or ultrasound to confirm intrauterine location. A follow-up visit should be advised after the first menses, or 3 to 6 weeks, after IUCD insertion to ensure proper placement.

For the Mirena 3–4 months of frequent light bleeding can be expected followed by oligo menorrhea.

A written instruction with the date and type of IUCD inserted should be given to the patient. IUCDs should not routinely be replaced before their maximum effective lifespan. Early replacement increases the risk of infection, expulsion and perforation. In Canada the Nova-T 200 is rated for 2.5 years, the Flexi-T 300 for 3 years and the Mirena for 5 years.

Conclusion

While the IUCD is not for everyone, it is an effective option for many women, with newer models offering wider application. Family doctors are in an ideal position to make this option available to their patients.

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