than 21 days in 89% of the women. Furthermore, use of the COC was significantly better than either 50 pg EE alone (p < 0.01) or a placebo (p < 0.01). Even when using a high-dose COC (50 pg EE), only 2% of the women were unable to complete the full 20 days of treatment because of gastric upset or nausea. Thus the effectiveness of combined estrogen/progestin treatment of bleeding irregularities in LNG implant users now appears to be adequately documented. Low-dose (30-35 mg EE) COCs were not included in this study but the experience of many clinicians suggests that their use probably is equally as effective and may cause fewer gastrointestinal problems. Low-dose COCs may be preferable because they are more widely available than 50 pg EE COCs and are much less expensive than EE alone.

Management of vaginal bleeding problems

Irregular (< 15 day interval) bleeding as well as prolonged spotting or bleeding (8 days or more) are common and expected in LNG implant users — over 65% experienced this during the first year (Sivin 1988). In addition, moderate menstrual bleeding more than twice as long as a normal menses occurs in 20-30% of implants users during the first 3 to 6 months. For a woman with prolonged spotting or moderate bleeding, the first approach should be counseling and reassurance. It should be explained that in the absence of other causes (e.g., cervicitis or cervical polyp) this type of bleeding is not harmful, even if prolonged for several weeks. Furthermore, these prolonged bleeding or spotting episodes typically become lighter and shorter in succeeding months.

If, after reassurance, the woman is still unhappy with the irregular bleeding, but wants to continue using LNG implants, a short course (1 to 3 cycles) of COCs may be tried using:

- a low-dose COCs (30-35 pg EE) once daily for 21 days (TGWG 1994).

If COCs are not appropriate for personal or medical reasons, try:

- ibuprofen (or another NSAID) up to 800 mg 3 times daily for 5 days (TGWG 1994).

Combined oral contraceptives control or stop bleeding by rebuilding the endometrium while ibuprofen, which blocks prostaglandin synthesis, decreases uterine contractions and blood flow to the endometrium (Angle, Huff and Lea 1991). Combined oral contraceptives, which also contain a progestin, are preferred over estrogens (either 20-50 pg EE or 1.25 mg conjugated estrogens) because they are more effective (Alvarez-Sanchez et al 1996).

Heavy bleeding (twice as long or twice as much as normal) is very uncommon with LNG implants but usually can be managed with low-dose COCs (with or without ibuprofen). If the bleeding is not reduced in 3 to 5 days or is much heavier (1 to 2 pads or cloths per hour):

- Determine whether there are other causes for the uterine bleeding.
- Give 2 low-dose COC pills per day for the remainder of the cycle (at least 3 to 7 days), followed by 1 cycle (1 pill per day) of COCs.

For anemia, give nutritional advice on the need to increase iron intake. Use oral iron treatment (one tablet containing at least 100 mg elemental iron, FeSO4, daily for 1 to 3 months) if hemoglobin ≤ 9 g/dl or hematocrit ≤ 27.

**Note:** Check to be sure vaginal bleeding has decreased within 3 days.

If COCs or estrogens fail to correct the bleeding problem, the implants may need to be removed for medical reasons (excessive bleeding) or due to the client’s wishes (TGWG 1994).

**Do not** perform a D&C unless another medical condition (e.g., endometrial polyp or incomplete abortion) is suspected. (If uterine evacuation is necessary, manual vacuum aspiration, not D&C, is the preferred method for emptying the uterine cavity.)
## Management of most common adverse effects

The steps in evaluating and managing adverse effects associated with use of the LNG implants Jadelle are outlined below.

<table>
<thead>
<tr>
<th>Adverse effect</th>
<th>Assessment</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amenorrhea (absence of vaginal bleeding or spotting)</td>
<td>Check for pregnancy (intrauterine or ectopic) by history, checking symptoms and performing a pelvic examination (speculum and bimanual) or a pregnancy test, if indicated and available (see Chapter 4).</td>
<td>Amenorrhea occurs in about 7% of LNG implants users in the first year and decreases thereafter (USFDA 1990). Amenorrhea for 6 weeks or more, especially after a pattern of regular menses, may signal pregnancy and should be evaluated.(^1) If intrauterine pregnancy is confirmed, counsel client regarding options. If the pregnancy will be continued, remove rods and assure her that the small dose of LNG to which she was exposed will have no harmful effect on the fetus. If miscarriage (spontaneous abortion) occurs (or pregnancy will not be continued), it is not necessary to remove the LNG implants. If ectopic pregnancy is suspected, refer at once for complete evaluation. Do not give hormonal treatment (COCs) to induce withdrawal bleeding. It is not necessary and usually is not successful unless 2 or 3 cycles of COCs are given (TGWG 1994).</td>
</tr>
<tr>
<td>Bleeding/Spotting (prolonged spotting or moderate bleeding)</td>
<td>Perform pelvic examination (speculum and bimanual) to be sure bleeding is not due to other causes (i.e., genital tract problems such as vaginitis, cervicitis, cervical polyps or uterine fibroids). If pregnancy (intrauterine or ectopic) or incomplete abortion is suspected, examine and perform pregnancy test if indicated and available. If an abnormality of the genital tract is found, after counseling, treat the problem or refer for further evaluation. Do not remove rods. Advise client to return for additional counseling after management of problem(s). SEE Amenorrhea (above) for management of pregnancy-related conditions. Reassure client that light, intermenstrual bleeding or spotting occurs in a large percentage of</td>
<td></td>
</tr>
</tbody>
</table>

Adverse effect: Amenorrhea. Assessment: Check for pregnancy (intrauterine or ectopic) by history, checking symptoms and performing a pelvic examination (speculum and bimanual) or a pregnancy test, if indicated and available (see Chapter 4). Management: Amenorrhea occurs in about 7% of LNG implants users in the first year and decreases thereafter (USFDA 1990). Amenorrhea for 6 weeks or more, especially after a pattern of regular menses, may signal pregnancy and should be evaluated.\(^1\) If intrauterine pregnancy is confirmed, counsel client regarding options. If the pregnancy will be continued, remove rods and assure her that the small dose of LNG to which she was exposed will have no harmful effect on the fetus. If miscarriage (spontaneous abortion) occurs (or pregnancy will not be continued), it is not necessary to remove the LNG implants. If ectopic pregnancy is suspected, refer at once for complete evaluation. Do not give hormonal treatment (COCs) to induce withdrawal bleeding. It is not necessary and usually is not successful unless 2 or 3 cycles of COCs are given (TGWG 1994).
### Chapter 8

**Adverse effect**

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<tbody>
<tr>
<td>Bleeding</td>
<td>Perform pelvic examination (speculum and bimanual) to be sure bleeding is not due to other causes (e.g., genital tract problems such as vaginitis, cervicitis, cervical polyps or uterine fibroids).</td>
<td>If an abnormality of the genital tract is found, treat the problem and counsel the client or refer for further evaluation. Do not remove rods. Advise client to return for additional counseling after management of problem(s).</td>
</tr>
<tr>
<td>Prolonged bleeding:</td>
<td>&gt; 8 days</td>
<td>For hemoglobin &lt; 9 g/dl or hematocrit 27, give iron (FeSO4, 1 tablet containing at least 100 mg elemental iron, daily for 1 to 3 months) and nutritional counseling. If anemia persists or client requests, remove rods and help client choose another method.</td>
</tr>
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</table>

**Adverse effect**

<table>
<thead>
<tr>
<th>Adverse effect</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Heavy bleeding: twice as long or twice as much as normal</td>
<td>If pregnancy (intrauterine or ectopic) or incomplete abortion is suspected, examine and perform pregnancy test if indicated and available.</td>
<td>See Amenorrhea above for management of pregnancy-related conditions.</td>
</tr>
</tbody>
</table>

**Prolonged bleeding:**

> 8 days

Women using LNG implants (50-80% of women during the first few months of use) is not serious and usually does not require treatment. Most women can expect the altered bleeding pattern to become more regular after 6 to 12 months (Population Council 1990).

If the client is not satisfied after counseling and reassurance, but wants to continue using implants, two treatment options are:

- a cycle of COCs (30-35 pg EE), or
- ibuprofen (up to 800 mg 3 times daily for 5 days) or other NSAID (TGWG 1994).

Be sure to tell the client to expect bleeding during the week after completing the COCs (21-pill pack) or during the last 7 pills if 28-pill pack.

If an abnormality of the genital tract is found, treat the problem and counsel the client or refer for further evaluation. Do not remove rods. Advise client to return for additional counseling after management of problem(s).
### Chapter 8

#### Note:
Despite the increased frequency of bleeding in some women, the monthly blood loss in LNG implants users usually is less than with normal menses in noncontracepting women. In some users, hemoglobin levels increase over time. More women have increases than have decreases in hemoglobin (Population Council 1990).

If the client is not satisfied after counseling and reassurance, but wants to continue using implants, two treatment options are:
- a cycle of COCs (30-35 pg EE),
- ibuprofen (up to 800 mg 3 times daily for 5 days) or other NSAID (TGWG 1994).

Be sure to tell the client to expect bleeding during the week after completing the COCs (21-pill pack) or during the last 7 pills if 28-pill pack.

<table>
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<tr>
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</table>
| No other cause found, but bleeding or amount is more than normal menses. | If the client is not satisfied after counseling and reassurance, | Give:  
- 2 COC pills per day for the remainder of the cycle (at least 3-7 days) followed by 1 cycle (1 pill per day) of COCs, or  
- 1.25 mg conjugated estrogen for 14-21 days (TGWG 1994). |

Refer immediately if the client has any of the following:
- Moderate to severe lower abdominal tenderness (rebound)
- Elevated resting pulse (> 100 BPM)
- Decreased blood pressure (< 90/60 mm Hg)
- Elevated temperature (> 38°C)
- Suspected/confirmed pregnancy and acute anemia (e.g., Hb < 9 g/dl or Hct < 27).

In some women with LNG implants, ovarian follicles develop and their shrinkage (atresia) is
### Lower abdominal/pelvic pain

(continuous)

<table>
<thead>
<tr>
<th>Adverse effect</th>
<th>Assessment</th>
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<tbody>
<tr>
<td>Sometimes delayed. In these instances, the follicle may continue to grow beyond the size it would attain in a normal cycle. These enlarged follicles cannot be distinguished from ovarian cysts. They usually occur during the first 6 months of use, generally are asymptomatic and often are palpable.</td>
<td>Obtain an accurate history will facilitate diagnosis and treatment. If cervicitis (mucopus or beefy red cervix), check Gram's stain of cervical discharge. If saline or KOH wet mounts are positive, treat appropriately for specific organism.</td>
<td>If positive for GNIDs, treat for gonorrhea. If negative for GNIDs and purulent cervicitis or beefy red cervix, treat for chlamydia.</td>
</tr>
</tbody>
</table>

### Obtaining an accurate history will facilitate diagnosis and treatment. If cervicitis (mucopus or beefy red cervix), check Gram's stain of cervical discharge. If saline or KOH wet mounts are positive, treat appropriately for specific organism.

### Clients may present with other problems which may or may not be method-related. The assessment and management of these problems are presented below.

### Adverse effect

<table>
<thead>
<tr>
<th>Vaginal discharge</th>
<th>Assessment</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observe for gram negative intracellular diplococci (GNIDs) and WBC (PMNs).</td>
<td>If Gram's stain negative, obtain GC culture if available.</td>
<td></td>
</tr>
</tbody>
</table>

### Adverse effect

<table>
<thead>
<tr>
<th>Weight gain or loss (change in appetite)</th>
<th>Assessment</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compare weight prior to implants use (if known) and current weight.</td>
<td>Check for pregnancy.</td>
<td>Counsel client that normal fluctuations of 1 to 2 kg (2 to 4 lbs) may occur.</td>
</tr>
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</table>

### Adverse effect

<table>
<thead>
<tr>
<th>Acne</th>
<th>Assessment</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask how and how often she cleans her face. Ask if she is currently under great stress.</td>
<td>In some women, implants use can make acne worse. Recommend cleaning face twice a day and avoiding use of heavy facial...</td>
<td></td>
</tr>
</tbody>
</table>
### Chapter 8

#### Adverse effect

<table>
<thead>
<tr>
<th>Breast fullness or tenderness (mastalgia)</th>
</tr>
</thead>
</table>
| **Assessment** | Check for pregnancy:  
  - Check breasts for:  
    - lumps or cysts, and  
    - discharge or galactorrhea (leakage of milk-like fluid), if not breastfeeding.  
  - If she is breastfeeding and breast(s) is tender, examine for breast infection. |
| **Management** | If pregnant, manage as described in *Amenorrhea* (p. 8-3).  
  - If not pregnant, do not remove rods unless client requests it after counseling.  
  - If physical examination shows lump or discharge suspicious for cancer (e.g., firm, non-tender or fixed and which does not change during menstrual cycle), refer to appropriate source for diagnosis.  
  - If no abnormality, reassure.  
  - If breast(s) is not infected, recommend a bra that provides additional support.  
  - If breast infection, use warm compresses, advise to continue breast-feeding and give antibiotics as appropriate. |

#### Adverse effect

<table>
<thead>
<tr>
<th>Chest pain (especially if it occurs with exercise)</th>
</tr>
</thead>
</table>
| **Assessment** | Assess for possible cardiovascular disease (CVD). Also, check:  
  - Blood pressure  
  - Heart for irregular beats (arrhythmias) |
| **Management** | If evidence for CVD, refer for further evaluation. Low-dose progestins do not increase the risk of CVD but if acute venous thrombosis or pulmonary embolism is diagnosed, remove implants and help client choose another (nonhormonal) method. |

#### Adverse effect

<table>
<thead>
<tr>
<th>Depression (mood changes or loss of libido)</th>
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<tbody>
<tr>
<td><strong>Assessment</strong></td>
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<tr>
<td><strong>Management</strong></td>
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</table>

#### Adverse effect

<table>
<thead>
<tr>
<th>Excess hair growth (hirsutism) or hair loss</th>
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<tbody>
<tr>
<td><strong>Assessment</strong></td>
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<tr>
<td><strong>Management</strong></td>
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</tbody>
</table>
### Adverse effect: Headache (especially with blurred vision)
- **Assessment:** Ask if there has been a change in pattern or severity of headaches since insertion of implants. Perform physical examination, measure blood pressure. Examine as appropriate:
  - Eyes (fundoscopic)
  - Neurologic system
- **Management:** If headaches are mild, treat with analgesics and reassure. Re-evaluate after 1 month if mild headaches persist. If headaches have changed since starting implants (i.e., numbness or tingling accompanied by loss of speech, visual changes or blurred vision) remove implants and help client choose another (nonhormonal) method.

### High blood pressure (> 180/110 mm Hg)
- **Assessment:** Ask if this is the first time anyone has told her that she has high blood pressure. Allow 15 minutes rest, then repeat BP reading.
- **Management:** Counsel client that a mild increase in blood pressure (< 180/110) does not require removal of implants unless she requests it. If requested, help the client choose another method. In addition, tell her that high BP usually goes away within 1 to 3 months. Take BP monthly to be sure it returns to normal. If after 3 months it has not returned to normal, refer for further evaluation. If BP > 180/110 or she has arterial vascular problems (e.g., heart attack, stroke, kidney failure or retinopathy), the implants should be removed. Help her choose another method.

### Adverse effect: Idiopathic intracranial hypertension, benign (pseudotumor cerebri)
- **Assessment:** Review history for headache, dizziness or generalized weakness. Examine:
  - Eyes (fundoscopic) for retinal swelling (papilledema)
  - Neurological system
- **Management:** No cause and effect relationship has been established. Because of the seriousness of the condition, removal of implants is recommended. Help the client choose another method.

### Adverse effect: Rod coming out
- **Assessment:** Check for partial or complete expulsion of rod.
- **Management:** Remove partially expelled rod. Check to determine if remaining rod is in place.
  - If area of insertion is not infected (no pain, heat and redness), replace rod.
  - If area of insertion is infected:
    - remove remaining rod
    - insert a new set in the other arm, or
    - help the client choose another method.
### Infection at insertion site

**Assessment:** Check area of insertion for infection (pain, heat and redness), pus or abscess.

**Management:**

If infection (not abscess), wash area with soap and water and give appropriate oral antibiotic for 7 days.

Do not remove rods.

Ask client to return after 1 week. If no improvement, remove rods and insert a new set in the other arm or help client choose another method.

If abscess:

- Prep with antiseptic.
- Incise and drain.
- Remove rods.
- Perform daily wound care.
- Give oral antibiotics for 7 days.

Insert new set in the other arm or help client choose another method.

### Jaundice

**Assessment:** Acute jaundice occurring after insertion is not method-related.

**Check for:**

- Active liver disease (hepatitis)
- Gall bladder disease
- Benign or malignant liver tumors

**Management:**

Levonorgestrel has little effect on liver function and does not increase the risk of liver tumors. If the client has jaundice due to viral hepatitis and does not wish to stop using LNG implants, it is unlikely that they will worsen liver disease and their use is safer than pregnancy (McCann and Potter 1994).

If pregnant, manage as above. (See Amenorrhea).

### Nausea/Dizziness/Vomiting

**Assessment:** Check for pregnancy by checking symptoms, performing a pelvic examination (speculum and bimanual) and a pregnancy test (if indicated and available).

**Management:**

If not pregnant, reassure that this is not a serious problem(s) and usually disappears with time.

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1. If using ultrasound or x-ray as a guide, remove the rod you could not palpate first so the other rod can be used as landmark(s) (American Health Consultants 1995).

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### Table: Adverse effect, Assessment, Management

<table>
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<td>Infection at insertion site</td>
<td>Check area of insertion for infection (pain, heat and redness), pus or abscess.</td>
<td>If infection (not abscess), wash area with soap and water and give appropriate oral antibiotic for 7 days. Do not remove rods. Ask client to return after 1 week. If no improvement, remove rods and insert a new set in the other arm or help client choose another method. If abscess: Prep with antiseptic. Incise and drain. Remove rods. Perform daily wound care. Give oral antibiotics for 7 days. Insert new set in the other arm or help client choose another method.</td>
</tr>
<tr>
<td>“Missing” rods</td>
<td>Usually due to rods being inserted too deep (not palpable) or, rarely, a rod spontaneously expelled and forgotten by the client.</td>
<td>Can almost always be detected by x-ray (see Chapter 9) or sonography. If regular sonography is used, the focal length needs to be increased to about 15 cm to focus accurately. Rods are best seen in cross-section (transverse) as a shadow (echo-free area) underneath each rod. If both rods are present, note this in the client’s chart. If removal will be difficult, an expert in LNG implants removal should be consulted.</td>
</tr>
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Jadelle®
Training Manual
for Family Planning

Chapter 8

<table>
<thead>
<tr>
<th>Adverse effect</th>
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<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thromboembolic disorders (including blood clots in legs, lungs or eyes)</td>
<td>Assess for active blood clotting problem.</td>
<td>Even if levonorgestrel implants do not increase the risk of blood clotting problems (WHO 1996), remove rods because of seriousness of these conditions. If there is strong evidence of blood clotting disorder, refer for further evaluation.</td>
</tr>
</tbody>
</table>

References


Background
Unlike insertion, removal of Jadelle rods can be done at any time in the menstrual cycle. As has been stressed throughout other sections of this manual, correct insertion— with the Jadelle rods placed subdermally and properly spaced—makes the removal procedure much easier.

The clinical skills needed to remove Jadelle rods are very similar to those for Norplant capsules. Service providers who are experienced in Norplant removal should be able to learn to remove Jadelle rods with a minimum of additional training. Key differences for removal are that:
- the rods are about 1 cm longer (43 versus 34 mm), and
- they are softer and more flexible.

During the next few years, most clients requesting removal of LNG implants are likely to have Norplant capsules. Thus for service providers who have not had previous experience with either Norplant or Jadelle, this chapter and Appendix F provide instructions for removal of both implants. The general information in this chapter applies to both Jadelle and Norplant.

Jadelle removals
An important reason for the development of Jadelle was the time and difficulty involved with removing the six Norplant capsules. Because Jadelle has only two rods, removal is faster and easier (Table 1-6). Studies of removal also show that there are significantly fewer technical problems following Jadelle removal than with Norplant. Because removal of either type of implant involves making a skin incision and varying amounts of soft tissue (blunt) dissection, no differences in bruising, pain and superficial tissue trauma were reported (Leiras 1997).

In the above study, all removals were done using the standard technique, which involves using Cile or mosquito forceps to grasp the ends of the rods or capsules. The clinicians were all well trained and experienced.

Removal methods
The standard technique for removal was developed in the early 1980s for removal of Norplant implants. Since that time, several investigators have reported modifications to the standard technique. Removal clearly requires more patience and skill than insertion, especially with atypically placed rods (i.e., those inserted too deep and/or in an irregular pattern), and is associated with more blood loss than insertion (WHO 1990).

In 1993, Praptohardjo and Wibowo reported a method for removal of Norplant called the "U" technique. According to the authors, this method might be faster and easier to perform as well as easier to learn. It also is useful in removing hard-to-remove rods/capsules. The major differences between the "U" and standard techniques are:
- position of the skin incision, and
- use of the Jadelle-holding forceps.

Because Jadelle rods are about 1 cm longer and are somewhat more flexible (the silicone tubing is thinner) than NORPLANT capsules, removal using the "U" technique is a second option. With the "U" technique, the rod is grasped with the Jadelle-holding forceps about 5 mm above its end. With this technique, fewer rods may be broken, especially when providers are learning the procedure (Affandi 1996; Blumenthal et al 1997; Blumenthal et al 1996; Rosenberg et al 1997). Finally, use of the "pop-out" method, which was developed by Darney et al (1990) for removal of the stiffer Norplant capsules, may not be as practical for the softer, more flexible Jadelle rods.

The "U" technique for removal is described in detail in Appendix F.

Preparation
It is important that the instruments be in excellent condition (e.g., the scalpel must be sharp and the forceps should have a tight grasp). In addition, check that all instruments and other items have been sterilized or high-level disinfected (see Chapter 5 and Appendix C).

The following items are needed for removal (Figure 9-1):
1. examining table for the woman to lie on (optional);
2. arm support or side table;
3. soap for washing the arm;
4. ballpoint pen or marker;
5. sterile (or clean), dry surgical drape;
6. three bowls (one for the anti-septic solution, one for cotton balls soaked in boiled or sterile water to remove the talc from gloves and one containing 0.5% chlorine solution for decontaminating removed rods);
7. pair of sterile (or high-level disinfected) surgical gloves;
8. antiseptic solution;
9. local anesthetic (1% concentration without epinephrine);
10. sterile or high-level disinfected syringe (5 or 10 ml) and 2.5 to 4 cm (+1/2 inches) long needle (22 gauge);
11. scalpel with #11 blade.

1 Difficulty in removing rods can be anticipated if the rods are not easily palpable (inserted too deep), or in the case of Norplant if the capsules are not inserted in a fan-like pattern (atypically placed).
Pre-removal counseling

Before removing the rods, talk with the client about her reason for removal and answer any questions. Ask the client which type of LNG implant was originally inserted (i.e., Does she have two rods or six capsules?). Ask the client about her present reproductive goals (e.g., Does she want to continue spacing or limiting births?). If she wants to continue family planning, ask if she wants another set of Jadelle rods. Briefly describe the removal process and what she can expect both during the removal and afterwards.

Note: If the client is having Norplant removed and a set of Jadelle inserted, she will need to be reassured that the two rods (Jadelle) are as effective as the six capsules (Norplant).

General procedure

An easy removal depends on correct insertion. Routinely, removals take slightly longer than insertions – usually from 5 to 10 minutes for Jadelle, 10 to 20 minutes for Norplant. If the rods are placed correctly – subdermally in the middle third of the upper arm (Figure 6-3) – they will be easier to remove. If they are placed too deep (in the fascia muscle), removal could be difficult and could potentially damage the nerves or blood vessels in the neurovascular compartment (Figure 6-5 – expanded view).

It is helpful to locate the rods first with ungloved fingers. Most clinicians choose to mark the position of each rod with a ballpoint or marking pen. (When tissue swells during a difficult removal, these marks help identify the location of the rods.) Then, the client’s arm is swabbed with an antiseptic before the local anesthetic is injected. The anesthetic should be injected under the ends of the rods nearest the incision site; anesthetic applied over the rods makes them difficult to feel (palpate).

Note: If all capsules or rods cannot be palpated, a provider inexperienced in removal should not begin the procedure. An experienced provider should be consulted.

Generally, only one small incision will be needed through which both rods will be removed. The incision should be no longer than 4 mm. If removal of either rod is difficult (i.e., both rods are not removed in 30 minutes), it may be better to stop the procedure for the client’s comfort. In the event that one rod is left in the arm, the client should be provided with a backup contraceptive method. She should be asked to return when the area is fully healed (in about 4 to 6 weeks) and a second attempt can be made. At that time, hard-to-find rods can be located by soft-tissue x-ray or ultrasound.

Step-by-step instructions for removal of Jadelle rods

Getting ready

Step 1: Before starting the procedure, check to be certain the client is not allergic to antiseptic solutions or local anesthetics.

Step 2: Check to be sure the client has washed her entire arm with soap and water, and rinsed it thoroughly, being sure to remove all traces of soap. (Residual soap decreases the effectiveness of some antiseptics.) This step is particularly important when client hygiene is poor.

Step 3: Help position the client on the table. Ask her to lie down on the table so that the arm with the rods rests on the table or arm support. Her arm should be well-supported and able to be comfortably extended straight or slightly bent.

Tip: To make locating the rods easier, moisten fingertips with a small amount of soapy water or antiseptic solution, such as Betadine or Savlon. Doing this decreases friction between the clinician’s fingertips and the client’s skin and allows the rods to be more easily felt.
as the clinician prefers.

Step 4: Place a clean, dry cloth under her arm.

Step 5: Locate the two rods by palpation (Figure 9-2). To gauge where to make the incision, palpate the ends of the rods with bare (ungloved) fingers. (If it is difficult to find the rods, refer to the client’s file where the original rod placement should be noted and a diagram may be available.)

Step 6: Confirm the position of each rod by making a mark at both ends of the rods using a ball-point or marking pen (Figure 9-3). If an antiseptic containing alcohol will be used to prep the arm, a pen with permanent ink must be used.

Step 7: Prepare an instrument tray and open the sterile instrument pack without touching the instruments and other items.

Pre-removal tasks
Step 1: Wash hands thoroughly with soap and water and dry them with a clean, dry cloth or air dry.

Step 2: Put sterile or high-level disinfected surgical gloves on both hands. (A separate pair of gloves must be worn for each client to avoid cross-contamination.)

Step 3: If a sterile surgical drape with a hole in it is available, it should be used to cover the arm. The hole should be large enough to expose the area where the rods are located. A second option is to cover the arm below where the rods have been inserted with a sterile cloth. (Alternatively, a decontaminated, washed and machine- or air-dried drape or cloth can be used.)

Step 4: Apply antiseptic solution to the removal site two times. Use the tissue forceps to hold a cotton or gauze swab soaked with antiseptic solution. (If prepping is done with a gloved hand, care must be taken not to contaminate the glove by touching any unprepped skin.) Begin wiping at the incision site and move outward in a circular motion for 8 to 13 cm (3 to 5 inches). If an iodophor (e.g., Betadine) is used, allow to air dry for about 2 minutes before proceeding. (Iodophors require up to 2 minutes contact time to release free iodine.) Wipe off excess antiseptic only if necessary to see the pen marks.

Step 5: If a sterile surgical drape with a hole in it is available, it should be used to cover the arm. The hole should be large enough to expose the area where the rods are located. A second option is to cover the arm below where the rods have been inserted with a sterile cloth. (Alternatively, a decontaminated, washed and machine- or air-dried drape or cloth can be used.)

Step 6: Again, locate the two rods by palpation. (Figure 9-4)

Step 7: Inject a small amount of local anesthetic under the ends of the im-plants that are closer to each other. Anesthetic injected over the im-plants may obscure their position and make removal more difficult.

Step 8: Make a 4-mm incision with the scalpel close to the ends of the implants. Keep the incision small. (Figure 9-5)

Step 9: Push each implant gently with your fingers towards the incision. When the tip is visible in the incision, grasp it with the Mosquito forceps. Use a scalpel to very gently open the tissue capsule around the implant. (Figure 9-6)

Step 10: Grasp the end of the implant with the second forceps (crile). (Fig. 9-7)

Note: Do not use powder with gloves. The tiny granules (talc) may fall into the removal site and cause scarring (fibrous reaction). If gloves are powdered, wipe powder off the glove fingers with sterile gauze soaked in sterile or boiled water.
Step 11: Remove the implant gently. Repeat the procedure for the second implant. (Figure 9-8)

Measure the length of the removed implants. The length of Jadelle implants is 43 mm. This will ensure that the patient has had two Jadelle implants and not other contraceptive implants.

After the procedure is completed, close the incision and bandage it as after incision. The arm should be kept dry for a few days.

If the client wishes to continue using Jadelle, see section on Insertion After Removal.

Procedure to follow after removal of rods

Covering the incision

- Press down on the incision with a gauzed finger for a minute or so to stop any bleeding. Remove the drape.
- If the client does not want another set of rods, clean the area around the incision site with a small amount of sterile or high-level disinfected water or alcohol ("spirits") applied to a cotton or gauze swab. Use gauze covered fingers to hold the edges of the incision together briefly (10 to 15 seconds). This will help reduce bleeding from the incision.
- Bring the edges of the incision together and close with a Band-Aid or surgical tape with sterile gauze or cotton. Sutures are not necessary and may increase scarring.
- Check for any bleeding. Cover the insertion area with a dry piece of gauze (pressure dressing) and wrap gauze snugly around the arm to be sure there is no bleeding and to minimize the bruising (subcutaneous bleeding).

Waste disposal and decontamination

- Before removing gloves, place instruments into a container filled with 0.5% chlorine solution for decontamination (see Appendix C for how to make a solution from household bleach). Fill syringe (with needle attached) with 0.5% chlorine solution and either place in solution or dispose of needle and syringe by placing in a puncture-proof container. Soak for 10 minutes. After soaking, rinse metal items immediately with clean water to avoid discoloration or corrosion.
- If the scalpel blade will be discarded, remove the scalpel from the chlorine solution. Then take the blade off the scalpel using forceps and place it in a puncture-proof container.
- Check for any bleeding. Cover the insertion area with a dry piece of gauze (pressure dressing) and wrap gauze snugly around the arm to be sure there is no bleeding and to minimize the bruising (subcutaneous bleeding).
- The surgical drape (if used) must be washed and sterilized before reuse. Place in a dry covered container and remove to the designated washing area.
- While still wearing gloves, place all contaminated objects (gauze, cotton and other waste items) in a properly marked, leak-proof container with a tight-fitting lid or in a plastic bag.
- Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning inside out.
- If disposing of gloves, place in a leak-proof container or plastic bag.
- If reusing surgical gloves, submerge them in the 0.5% chlorine solution for 10 minutes for decontamination.
- Wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry.
- All waste material should be disposed of by burning or burying.
Chapter 9

Jadelle®
Training Manual
for Family Planning

Client care

- Place a note in the client’s record indicating the date of removal and specifying any unusual events that may have occurred during removal.

- Instruct the client regarding post-removal care instructions if available and appropriate.

- Observe the client for at least 15 to 20 minutes. Check for excessive bleeding from the incision and ask how she feels before sending her home. She should be given written, post-removal care instructions if available and appropriate.

Removal tips

Rods That Are Difficult to Remove

Occasionally the rods cannot be removed readily at the first visit. If removal of either rod is difficult (i.e., both rods are not removed in 30 minutes), it may be better to return to their original length after being stretched, it may be difficult to determine if all pieces of a broken rod have been removed.

To remove remaining pieces of a broken rod through the original incision:

- Repalpate the arm to locate the missing piece(s).
- Inject more anesthesia if necessary.
- Grasp the end of the rod with curved (mosquito or Crile) forceps and gently bring it into the incision.

Rods that are broken

Removal of the rods is more difficult if they are broken during attempts to get them out. Once the rod is damaged, it may break again with each attempt to grasp it with the Norplant-holding or curved forceps. Rarely, removal of a broken rod may require an additional incision at the proximal end of the rod (end nearest the shoulder) so that the remaining piece can be removed more easily.

Because Jadelle rods are highly elastic and do not immediately return to their original length after being stretched, it may be difficult to determine if all pieces of a broken rod have been removed.

If infection occurs

- Treat infections with appropriate therapy for local wound infections (see Chapter 8).

Key points for successful removals

- An easy removal depends on correct insertion. If the rods were placed correctly, they will be easier to remove. If they were placed too deep, problems can occur.

- Routine removals should take only slightly longer than insertions – usually from 3 to 5 minutes.

- Palpate the area to identify the location of each rod and mark the position of both rods with a pen.
• Use recommended infection prevention practices to avoid infections.

• Inject small amounts of the local anesthetic (usually not more than 1 ml total) under the rod ends nearest the original incision site. If anesthetic is applied over the rods, it will obscure them and make removal more difficult.

• If the rods are positioned correctly, only one small incision (up to 4 mm) should be necessary for removal of both rods.

• Remove the rod that is nearer the point of the incision or closer to the original incision site. If anesthetic is applied over the ends nearest the original incision site, additional anesthetic (usually not more than 1 ml total) under the rod ends nearest the original incision site can be inserted for removal and inserted in the other arm.

• If removal of either rod is difficult (i.e., both rods are not removed, ask the client to return when the incision site is fully healed (in about 4 to 6 weeks) and try again or refer to a more experienced clinician.

Finally, and most important, the clinician should work gently, carefully and patiently to avoid injuring the client’s arm.

Jadelle® Training Manual for Family Planning

Chapter 9

• Put a drape on the arm (if required).

• Put on a new pair of sterile or high-level disinfected gloves; remove gloves and wash hands after removing gloves because the gloves may have invisible holes or tears. In this instance, hands should be washed after removing gloves because the gloves may have invisible holes or tears. In this instance, washing hands protects the provider from any contact with blood.

To reduce the risk of infection, after completing the removal procedure:

- including decontaminating instruments, gloves and other items and disposing of waste materials:
  - cover the incision with a sterile gauze pad;
  - remove gloves and wash hands thoroughly with soap and water;
  - put on a new pair of sterile or high-level disinfected gloves;
  - prep the incision area again, and
  - put a drape on the arm (if required).

Note: Hands should be washed after removing gloves because the gloves may have invisible holes or tears. In this instance, washing hands protects the provider from any contact with blood.

Because the local anesthetic for removal is injected only in the incision area (i.e., under the ends of the rods), additional anesthetic is needed for an insertion. (See Pre-insertion Tasks Step 7 in Chapter 6).

References


Figure 9-9. Placement of second set

Figure 9-10. Levonorgestrel Plasma Levels after first insertion of LNG implants (●) and after insertion of a second set in the same (▲) or opposite (■) arm.