MILITARY CLINICAL PRACTICE

THE INTRA-UTERINE DEVICE

Part II: Technical Problems

MAJ I ALEXANDER, MB, BS, MRCOG, RAMC

Before inserting an intra-uterine device (IUD) bimanual examination of the pelvis must be performed. This can be a problem for those who do not have gynaecological experience, but important pathology is unlikely to be missed, and skill will increase with practice.

The cervix and vagina should be examined using a Cusco's speculum. The patient should be lying on a firm couch with her knees bent and hips abducted. Alternatively the left lateral position may be used for examination and insertion. An Anglepoise lamp provides the most satisfactory source of illumination.

If the patient has a heavy vaginal discharge it is better to treat this before inserting the coil as it will reduce the amount of potential infection introduced into the uterine cavity.

An erosion often causes concern. If it is asymptomatic it requires no treatment. Many women who have been using a combined oral contraceptive will have an erosion, as may post-partum patients. Also the Cusco's speculum on opening tends to evert a parous cervix, exposing endocervical canal and giving a false impression of a large circumferential erosion. When an erosion is symptomatic, that is, associated with discharge or post-coital bleeding, this should be treated before the coil is inserted.

Basic insertion technique

Before starting the insertion it is important to explain to the patient what you are going to do. A tense patient is likely to be hurt and every attempt should be made to gain her confidence. The very nervous patient, especially if she has had a previous traumatic insertion, may be helped by a small dose of valium half an hour before insertion. Gynaecological referral for insertion under sedation or anaesthetic may be necessary in such cases.

Patients are unfamiliar with the appearance of most of the instruments and it is advisable to keep them out of sight. If they are put in a large kidney dish which can be positioned between the patient's feet during insertion, this hides them yet leaves them readily available to hand (this problem is clearly not as relevant if the left lateral position is used).

Having visualised the cervix and fixed the blades of the Cusco speculum in the open position, it can be seized with a single toothed tenaculum or 7 inch Allis forceps. Steadying the cervix with a forcep is generally necessary as it straightens out the canal and uterine flexion. This is particularly relevant if the uterus is cochleate (anteverted and anteflexed), or acutely retroverted, when gentle traction of the cervix pulls it onto the uterine sound rather than forcing

the latter through the internal os. In addition, holding the tenaculum and inserter securely, prevents rotation and incorrect orientation of the device in the uterine cavity.

Sounding the uterine cavity will reveal its length and confirm any angulation, especially if uterine position could not be accurately determined bimanually, as can happen in the overweight patient. The length of the canal and uterine cavity is needed for accurate insertion of the various devices.

Occasionally it is impossible to sound the cavity because the internal os is too tight or the endocervical canal has a pinhole external os. It is essential to avoid force. Either another form of contraception should be considered or, if the patient is determined to have an IUD, then this can be easily inserted under anaesthetic as a gynaecological procedure.

The fundus of the uterus is usually sensitive and the majority of patients will feel slight discomfort on sounding. It is important that the sound is held lightly between the thumb and index finger so that excessive force is not applied and perforation of the uterus is avoided.

The Gravigard (Copper 7)

High fundal placement without perforating the uterus is the aim when inserting any IUD, and this is especially important with the copper devices which rely on a close association of their copper elements to the endometrium.

Two techniques are recommended for inserting this coil, either 'push-in' or withdrawal. The latter is preferable as it gives much more accurate fundal localisation.

Angulation of the inserter is often advised to allow for the natural curvature of the endocervical canal and uterine cavity. This angulation should never be acute and normally adequate traction on a tenaculum obviates the need for it.

Once the uterus has been sounded the Copper 7 is loaded, either inside the sterile plastic bag provided or with sterile gloves, and the movable cervical stop set to the distance sounded. The string guard is removed, and the inserter held with the black dot uppermost, as this indicates the horizontal plane of the device which must correspond to the coronal plane of the uterus.

A simple insertion technique is as follows: —

(a) A right-handed person should hold the inserter with the index and middle fingers of the right hand rather like a cigarette. The thumb and other two fingers hold the plunger.

(b) The tenaculum steadying the cervix is held in the left hand and the inserter introduced as far as the stop which has been set at the measurement for the fundus.

(c) The introducer tube is then withdrawn over the plunger to release the device into the uterine cavity. Because the unfolded device is about 1 cm shorter than when it is folded the horizontal arm will have dropped below the fundus. For this reason the introducer tube is only withdrawn to within 1 cm of the Blue stop.

(d) The final movement of insertion is made by the thumb and fingers holding the plunger, which gently push the device back into the fundus; so taking up the remaining centimetre and ensuring high fundal placement.

The risk of perforation is reduced using this method of insertion as the tenaculum steadying the cervix and the plunger are firmly held, whilst the outer tube is moved to release the device. Hence the plunger cannot be inadvertently pushed whilst the device is up against the fundus.

A loop of thread remains inside the uterus after insertion and this should be gently pulled down. If left it is more likely to draw the thread up inside the cavity. Normally about an inch of thread should be left, but if in doubt trim the thread just inside the introitus initially. This leaves plenty for the patient to feel, aids visualisation during routine checks, and it can always be trimmed later if too long. The Gravigard thread does not usually cause male dyspareunia; more likely the device has slipped so that the stem lies in the endocervical canal.

The Lippes loop

Undoubtedly the standard of the inert devices, it comes in four sizes, A to D, and the largest size that will fit the uterus should always be used.

The introducer has a fixed cervical stop and a push technique is used to position the device in the uterine cavity. If there is difficulty in assessing the size of the cavity, and consequently judging which size to use, the length of the cavity can be gauged on sounding. Usually there is some resistance at the internal os so that the length of the endocervical canal can first be measured from the moisture line on the sound. Subsequent measurement of both canal and cavity will give the length of the cavity alone.

The tenaculum and inserter should be held in the left hand (again if you are right-handed). The tenaculum is held between thumb and forefinger, and the introducer between the forefinger and middle finger. This leaves the right hand free to manipulate the plunger. No resistance should be felt at insertion. If undue pressure has to be applied to insert the coil either, the device is too large for the cavity or, as is more likely, the alignment of the device to the antero-posterior axis of the cavity has been misjudged. Use of undue pressure in either case can result in the device becoming embedded in the myometrium with partial or complete perforation.

Once inserted the introducer and plunger are removed together and the threads cut. It is advisable to leave the threads as long as possible. The monofilament nylon is slightly thicker than used on other coils and if partially drawn up into the uterus, so that a short spike protrudes from the external os, it may cause dyspareunia.

Copper T models

Once loaded in its inserter this coil is slightly larger than the Copper 7 and this can cause difficulties with insertion in nulligravida or if the uterine axis is acutely flexed.

Loading can be tedious although practice makes it easier. The literature accompanying the device is easy to understand but more difficult to follow.

Those inserting these devices for preference may find it easier to use a modified Lippes loop inserter with the plunger cut off flush with the top of the introducer.

Having loaded the coil into its introducer, this and the tenaculum are held in the same way as for inserting the Lippes loop, whilst the device is inserted by a 'push' technique. High fundal insertion is ensured as the coil is introduced beyond the end of the inserter, whilst perforation is unlikely to occur as the flat top of the T comes into contact with the fundus over a large area. Again, if there is undue resistance, the plunger should not be pushed in fully. The threads should be trimmed similarly to the Copper 7.

The SAF-T coil

This comes in three sizes, the smallest being recommended for nulliparous patients, and again the largest possible size to fit the cavity should be used.

The insertion technique is the same as for the Lippes loop with one exception. The length of the uterine cavity must be shown and the movable Blue cervical stop adjusted to 1.5 cm short of its length. This is to allow the two arms of the coil to assume their natural curvature during insertion and prevent them both becoming embedded in the uterine wall.

The Multiload 250

This is described as a 'third generation' copper coil. It has recently been introduced and will no doubt gain popularity until its true value can be properly assessed. It looks something like a cross between a Copper T with drooping arms and a Dalkon shield (for those who remember this), and it is inserted by a push technique.

Timing of insertion

Generally it is easier to insert a coil towards the end of the period when the cervix is partly dilated and any bleeding that occurs is masked. Also you can be fairly certain that the patient is not pregnant. However, if adequate alternative contraception has been used there is no reason why a coil should not be inserted at any time.

Insertion following termination of pregnancy is commonly performed by gynaecologists and the six week post-natal check, by which time the uterus has returned to its non-pregnant size, has long been a popular time. More recently encouraging results have been achieved with insertions immediately post-partum.

Considerable success has also been achieved with inserting IUDs, usually copper models, as post-coital contraceptives. This can be done within 5 days of coitus, before the fertilised ovum, travelling down the fallopian tube, has reached the uterine cavity.

Removal

This can be done at any time but if a pregnancy is not planned, care must be taken to offer alternative contraception even if the middle of the cycle is passed as a fertilised ovum may be in transit, and cycles can vary in length.

Following removal it can take several months for menstruation to return to normal and this is relevant if discontinuation was because of heavy periods.

Conclusion

Intra-uterine contraceptive devices form an important part of the family planning armamentarium and constant progress is being made in improving design and efficiency. Those inserting these devices must keep abreast of new developments in the field whilst improving their individual skill and technique at insertions.

Greater understanding of the principles behind practical procedures helps improve technique and the recognition of potential problems. It is hoped that these articles have covered some of the problems that others, like myself, have encountered, and possibly has given an alternative slant on how to cope with them.

Acknowledgements

My sincere thanks to Mr C J Young, MD, MRCOG, for his enthusiastic support and critique of these articles, and to Mrs D W Matthews for preparation of the manuscript.

Suggested further reading

1. DAVIS, H J (1971). *Intrauterine Devices for Contraception: The IUD*. Williams & Wilkins Co. Baltimore.
2. WHEELER, R G, DUNCAN, G W and SPEIDEL, J J (1974). *Intrauterine Devices*. Academic Press. New York & London.
3. Population Reports. Series B, No 25, January 1975. *Intrauterine Devices*. Department of Medical and Public Affairs, The George Washington University Medical Center. Washington DC.