MILITARY CLINICAL PRACTICE

THE INTRA UTERINE DEVICE

Part I: Development; Selection of Patients; Complications

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The history of Intra-uterine devices (IUDs) contains many disasters, and the technique has fallen into disrepute from time to time. Modern usage began with the Ota and Grafenburg devices used in the 1920's and 1930's, but it was not until the technological advances in the plastics industry, coinciding with the world wide population explosion of the 1950's and 1960's, that impetus was given to the development of the IUD as we know it today. Subsequent international surveys covering large numbers of IUD users have allowed the rational development of evaluation of a wide variety of devices.

Public demand for this method of contraception has increased progressively as the devices have become more reliable and other factors such as age, smoking or medical history have precluded the use of combined oral contraceptives. The family doctor has increasing responsibility for counselling, insertion, and the management of problems arising from IUD usage. Some of the more common problems encountered are discussed in this and a subsequent article.

Design

Modern IUDs are made of inert plastic impregnated with a barium sulphate to make them radio-opaque. They may be described as 'inert' or "biologically-active" depending on whether they rely solely on their physical properties of size and shape, or in addition, to some chemical additive for their contraceptive action. Biological activity, usually in the form of copper ions, has the advantage of allowing coils to be made smaller whilst maintaining efficiency of action; although these devices do require changing at intervals as the copper is dissolved.

How they work

Intra-uterine devices act by preventing implantation of the fertilised ovum. Any foreign body within the uterine cavity can do this if it is not expelled. In developing IUDs a balance has had to be struck between size and shape on the one hand, and the risk of expulsion or causing bleeding problems on the other. Correct siting of devices within the uterine cavity becomes more critical with the smaller biologically-active devices where close approximation of the copper elements is required at potential implantation sites. Downward displacement of these devices, leaving an exposed area of endometrium, allows the blastocysts to implant with the IUD in situ.

Selection of patients

Before attending for counselling many patients have either decided on the method they want to use, or have preconceived ideas about the choices available. Past experience, hearsay evidence and press reports can have great influence on the acceptability of certain techniques. When counselling patients it is important to discuss all methods, outlining the pros and cons of each, if ignorance or unfounded prejudices are to be overcome. 'Pressure-selling' of a particular method should be avoided and the patient be given time to go away and think about the alternatives. But, it is important to provide alternative contraception when needed for the interim period.

There are only two absolute contra-indications to fitting a coil; Pregnancy and Pelvic Inflammatory Disease. The first reason is obvious. The second because insertion may produce a flare-up of quiescent infection or act as a focus for fresh infection. As a result, fertility that may have already been compromised could be further jeopardised, or a chronic or acute debilitating sepsis be produced.

A history of Caesarian section is not a contra-indication. Where abnormalities of the genital tract or fibroids exist patients should be referred to a gynaecologist for assessment and insertion. Abnormal uterine bleeding and suspicious smears need investigation in their own right, but the latter may preclude the use of combined oral contraceptives but necessitate efficient contraception during investigation. There is no evidence to suggest that IUDs produce malignancy or aggravate pre-malignant conditions. Patients with valvular or septal heart disease should seek alternative contraception methods, but, if an IUD is to be fitted or removed antibiotic cover must be given.

Reductions in size of coils associated with biological activity has made insertion much easier in nulligravid patients. But, the associated risks of pregnancy and pelvic inflammatory disease are greater in this group. Also they have not proven their fertility, so that any later problems with conception may well be incorrectly attributed to prior IUD usage. Wherever possible an alternative method of contraception to the IUD should be found for these individuals.

Specific counselling for IUD users

Once a patient has decided to have an IUD certain facts should be made clear before it is fitted. There is a failure rate with the device. About two pregnancies will occur each year among every hundred women fitted with a coil. However, the 'Pill' has its failures.

Coils do slip or fall out at any time but most commonly during the month following insertion or during the first few periods. Hence patients must be sure that they know how to feel for the threads, and what to do if they cannot feel them.

If pregnancy occurs with a coil in situ the patient must return to her doctor or the clinic as soon as possible. Ectopic pregnancy is more common when a coil is present, whilst termination of pregnancy is easier, and safer, at an early stage.

Initial 'period-like' pain is common in the first 36 hours after insertion and responds to simple analgesics. A blood stained discharge may persist for the rest of the cycle, and the first few periods may be slightly heavier. As infection is an ever present hazard, any patient who experiences continual pain should be told to return to her doctor or the clinic. If a biologically-active device is fitted the patient should be told that it will need changing after an appropriate interval.

Which coil to fit?

The patient's best interest will be served by fitting the device with which you have the most experience, and therefore, skill. The smaller biologically-active devices, for example, the Gravigard (Copper 7) and Copper T, are the easiest to insert and the ones with which most gain the greatest experience, at least initially. The commonest inert devices are the Lippes Loop and Saf-T-Coil. Those inserting coils should be familiar with at least one device of each type and their respective insertion techniques (Fig. 1).

Whilst there are no rules for selecting specific coils for given situations certain guidelines can be drawn. Where a nulligravid patient insists on a coil, as the uterus is smaller, the problems of pain, bleeding and expulsion are proportionately greater. A small biologically-active device would suit this situation.

Fig. 1. Examples of intra-uterine devices

Conversely, multiparous patients can be fitted with larger devices without a high risk of expulsion. If her family is complete and the patient requires a permanent method of contraception, without resorting to sterilisation, then one of the larger inert devices would seem the logical choice. Women who are spacing children and need cover for one or two years could be fitted with either a biologically-active or inert device.

When a device is changed, if the patient has been asymptomatic, replace it with the same type. However, multiparous patients fitted with copper devices may not know that coils are available that do not need changing; this could be brought to their attention.

Efficiency of devices

In general the devices available are equally efficient under similar circumstances. Variation in continuation of failure rates is more closely related to the centres where devices were fitted and reflects the importance of the counsellors attitudes towards minor problems, and their skill with fitting.

Smaller size is associated with higher pregnancy and expulsion rates, but no single type is consistently more efficient or inefficient than any other. Small devices are those primarily fitted to nulligravid patients and this appears to be the important factor: another reason for avoiding coils in nulligravidae.

Complications

Pain

Some discomfort is not uncommon at the time of insertion and this may persist for up to 36 hours at most. It is usually described as 'period type pain' and responds to simple analgesic. It is more likely to occur in the very nervous patient and the

judicious use of a small dose of Valium 30 to 60 minutes before insertion may prevent symptoms and difficulties with insertion. Whenever possible patients should not drive themselves home after insertion.

More intense or persistent pain usually indicates some error with insertion, such as, too large a device, insertion on the wrong plane or perforation. The device should be removed and any distortion will illustrate the original problem.

Less common are fainting attacks either due to pain or as an 'escape' response to a particularly nervous patient. Should this happen no further attempts should be made to insert the coil without a general anaesthetic.

Bleeding

There is often some bleeding associated with insertion (hence one of the advantages of inserting coils during the period) and this may persist as a blood-stained discharge for the rest of the cycle. Blood loss with periods is usually slightly heavier and often more noticeable in the first few periods following insertion. Exceptionally menstrual losses may be less.

Some intermenstrual spotting or pre- and post-menstrual staining is not uncommon, especially with copper devices, and most patients will accept this. Menorrhagia, presenting as flooding, prolongation of the menstrual flow or both can occur and tends to be commoner with the large coils. Its onset can be either immediate or progressive over many months or years. Temporary relief can be given by prescribing Epsikapron sachets or Dicyclic, although individual response to these drugs is variable. If symptoms persist the coil should be removed and alternative contraception used. Another device can be tried after a few months if the patient wishes.

Leukorrhoea

Some increase in the normal vaginal secretions, apart from blood stained discharge, is not uncommon with IUDs. This is due to the irritant action of the device on the endometrium and the thread in the endocervical canal producing increased secretions.

Expulsion

This usually occurs during the first month after insertion or with the first few periods. Expulsion rates decrease with time and are less likely to occur in older and parous women.

As expulsion can be silent it is important to teach patients to check for the threads of the device. Ideally these checks should be carried out frequently during the first month, especially if it is the patient's first coil, and from then on as often as is remembered, but always at least after each period. Not uncommonly a patient is quite unable to feel the threads and this has to be accepted.

If expulsion occurs another device can be fitted, but retraction of the threads into the uterine cavity or perforation are alternative possibilities. If the threads are not visible the cavity can be sounded to see if the device can be felt or the threads brought down. This is most easily done towards the end of the period using a uterine sound, Spencer Wells forcep or 'crochet-hook' retriever. Whilst the location of the device is uncertain alternative contraception cover should be given. If the coil can be located in the uterine cavity and it is not possible to bring the threads down the patient can be reassured. If removal is required this may well have to be done under anaesthetic.

Recurrent expulsion is not uncommon so regular checks for the coil threads

are even more important in these patients. Where a second device is expelled, if the patient wishes to try again and the cervix is found to be patulous, an Antigon should be considered.

Perforation

Perforations begin at the time of insertion, and are more likely to occur with 'push' techniques (as will be described in Article II). Failure to sound the cavity for depth and direction, to correctly straighten the canal and cavity, or to recognise too great a resistance at insertion are associated factors. Many perforations are silent, with the device lying in the myometrium, passing through into the peritoneal cavity or between the layers of the broad ligament. Occasionally the threads may still be visible, ie partial perforation, and usually this situation results in some discomfort or menorrhagia, whilst removal may well be difficult and painful.

If the device cannot be found by sounding, anteroposterior and lateral X-rays of the pelvis and abdomen (to include the diaphragm) should be done to locate the coil. Again alternative contraception should be offered and the radiological '10 day rule' applied.

If the device cannot be found by sounding, anteroposterior and lateral X-rays be removed sooner or later depending on its type. Devices with closed as opposed to linear configurations can cause strangulation of the bowel. Many devices can be removed through a laparoscope but laparotomy may well be necessary, especially with copper containing devices which cause adhesions.

Infection

All IUD users are more at risk from pelvic inflammatory disease, especially nulliparous women. Unrecognised infection can have a devastating effect on fertility.

Circumstantial evidence suggests that infection is commoner with copper containing devices, but these are the type most commonly fitted to nulliparous patients, many of whom are not married, and sexual activity with several partners. must be considered to be an additional cause.

Diagnosis frequently presents problems especially with low grade infections. Symptomatology may vary from mild discomfort and slight dysuria to a very toxic picture, whilst haematological and bacteriological investigations are often inconclusive. If suspected, treatment is indicated and the coil should be removed to prevent structural damage. Early gynaecological referral is also advisable. Treatment should be with a broad spectrum antibiotic and Flagyl initially, and normally continue for three months, with drugs being varied monthly to prevent the emergence of resistant organisms.

Following an episode of pelvic inflammation it is better if this method of contraception is not used again ever.

Pregnancy

There is an inherent risk of any contraceptive method and if it occurs in a woman using an IUD she must know that she could contact her doctor or the family planning clinic as soon as the diagnosis is suspected or confirmed.

There is an increased risk of an ectopic pregnancy in coil users, and if desired, termination of pregnancy is safer the earlier it is undertaken. Providing the patient wishes to continue with the pregnancy, if the threads are visible should the coil be removed? The question is controversial, for there is no conclusive

evidence that coils are teratogenic and removal may cause a miscarriage. It can be argued that the patient did not intend to become pregnant. Also these pregnancies have an increasing incidence of complications such as spontaneous abortion, premature labour, ante- and post-partum haemorrhage. When deciding whether or not to remove the coil the patient's views should always be sought and this will usually determine the course of action to be taken.

Whilst most patients who have fallen pregnant with a coil subsequently choose an alternative method of contraception, some have another, albeit a different device. These patients may prefer to use a "belt and braces" technique with spermicidal pessaries around midcycle. However, the routine advice to patients to use "extra protection" is highly suspicious of a counsellor's lack of confidence in the coil as a method of contraception.

(to be continued)

Honorary Consultants

To the Army

Mr G Westbury, FRCS, FRCP, has been appointed Honorary Consultant in Surgery to the Army, with effect from 21 January 1980. In succession to Lord Smith of Marlow, KBE, who retired on 10 May 1979.

Dr E E Keal, MD, FRCP, has been appointed Honorary Consultant in Diseases of the Chest to the Army, with effect from 8 January 1980. In succession to Dr F Scadding, MR, FRCP, who retired on 7 April 1979.

Dr R I McCallum, MD, DSc, FRCP, FFOM, MFCM, has been appointed Honorary Consultant in Occupational Medicine to the Army, with effect from 26 February 1980. This is a new appointment.

To the Cambridge Military Hospital

Dr W F White, MB, BS, FRCP, has been appointed Honorary Consultant in Radiotherapy and Nuclear Medicine to the Cambridge Military Hospital, with effect from 31 January 1980. This is a new appointment.