

Amenorrhoea despite displaced levonorgestrel intra-uterine system

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(Accepted July 27th 1999)

Keywords

amenorrhoea; levonorgestrel intra-uterine system; uterine perforation

Key message points

- Amenorrhoea is sometimes seen as a reassuring sign that a LNG IUS is correctly sited.
- This case makes that assumption dangerous and underlines the importance of a thread check a few weeks after fitting as a routine in all women with IUSs.

Case report

A 29-year-old woman presented to the gynaecology outpatient clinic with abdominal discomfort since the insertion of a levonorgestrel (LNG) intra-uterine system (IUS; Mirena®) 5 months previously. The IUS fitting was reportedly straightforward, although a fainting episode occurred immediately afterwards. Since insertion the patient had remained amenorrhoeic, but complained of a persistent left iliac fossa discomfort which was constant in nature and not made worse by intercourse.

At a routine check up 2 months after insertion, the IUS threads were not visible. A pregnancy test was negative and an ultrasound scan of the pelvis reported seeing the threads of the IUS in the fundus of the uterus but was unable to demonstrate the IUS itself. In view of this and her continuing discomfort she was referred to the gynaecology clinic.

The patient was otherwise fit and well and on no regular medication. She had twin girls aged 3 years, born by normal vaginal delivery at 32 weeks gestation. She had previously taken a monophasic combined oral contraception pill and had experienced no problems, but had requested a change of contraception for convenience. On examination in clinic there was vague tenderness in the left iliac fossa and a transvaginal ultrasound scan (TVS) showed bright echoes outside the uterus suggestive of an extra-uterine IUS. Arrangements were therefore made for admission for hysteroscopy and laparoscopy proceeding to laparotomy if required.

The operation was performed under general anaesthetic. Hysteroscopy revealed a normal cavity. No IUS was seen. Laparoscopy provided excellent views of a normal pelvis with no sign of the IUS. The left cornu appeared slightly distorted and felt 'thickened' when brushed with the Verres needle. An image intensifier in theatre did not reveal the IUS in the abdomen, so the procedure was abandoned.

The following morning the patient was delighted that the discomfort had disappeared but was distressed when she was informed that her IUS had not yet been retrieved. A

plain abdominal X-ray revealed the device lying high in the abdomen. It had not been identified with the image intensifier as it was lying directly over the lower spine and sacrum. At laparoscopy the next day the IUS thread was seen in the omentum. The IUS itself was buried, but was easily retrieved with gentle countertraction on the omentum through a 5 mm laparoscopy portal.

After an uncomplicated recovery the patient was discharged home the following day. A few weeks later she had a spontaneous bleed after which she was recommenced on a monophasic oral contraceptive pill.

Discussion

Uterine perforation by intra-uterine devices is a rare event (1.3 per 1000¹) occurring at the time of insertion and is often asymptomatic. The interesting point about this case is the fact that the women became amenorrhoeic despite the IUS being outside the uterine cavity. It thus appears that an extra-uterine LNG IUS has been contraceptive and caused amenorrhoea in a woman with no previous history of amenorrhoea apart from pregnancy. That she then went on to have a normal period within a month of removal of the IUS provides further evidence of the above.

The mechanism of action of the levonorgestrel IUS is based mainly on the release of levonorgestrel at a rate of 20 µg / 24 hours directly into the uterine cavity which acts locally to produce suppression of endometrial proliferation² and thickening of cervical mucus.³ The blood level of levonorgestrel is only about a quarter of that achieved with a standard 30 mcg levonorgestrel pill (progestogen-only pill).⁴ This is enough to cause suppression of ovulation in some women in some cycles.⁵ The physical presence of the IUS within the uterus would also be expected to make a minor contribution to its contraceptive effect.² Menses are often chaotic at the start with spotting, and some women become amenorrhoeic.

It is possible that a good blood supply in the omentum in which the IUS was buried allowed systemic levonorgestrel to reach a higher level than is usually found with the intra-uterine system, and that this was sufficient to cause amenorrhoea in a similar way to that experienced by some users of levonorgestrel contraceptive pills and subdermal implants. It would have been interesting to be able to measure the blood level of LNG in this case.

The failure of the image intensifier to locate the device intra-operatively was an important lesson for us. A plain abdominal X-ray (AP and lateral) pre-operatively would probably have located the IUS and may have enabled location at the first laparoscopy. This case emphasises the importance of X-ray as well as ultrasound investigation in such cases.

Statements on funding and competing interests

Funding. None.

Competing interests. Dr Hilary Cooling is a member of the UK Family Planning Research Network which has undertaken research on the use of the levonorgestrel IUS over the past 6 years funded by Leiras Oy and subsequently by Schering Healthcare Ltd. She has led occasional educational workshops for general practitioners on the use of the levonorgestrel IUS which have been part funded by Schering Healthcare Ltd.

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