## LETTERS TO THE EDITOR

# Incomplete removal of an intrauterine system

A 38-year-old woman, gravida 4 para 1, had a levonorgestrel intrauterine system (LNG IUS) inserted just after a third induced abortion. Thirteen months later she insisted on the IUS being removed because of amenorrhea. Ultrasound examination showed that it was normally located. A junior doctor was asked to remove it. On insertion of the speculum, the threads were clearly visible. The threads were gently pulled and the device was removed easily. The doctor thought it was intact. However, the patient still suffered from amenorrhea. Ultrasound examination appeared normal, so hysteroscopy was arranged.

At hysteroscopy, moderate intrauterine adhesions were found. After hysteroscopic electrosurgery to divide the adhesions, the retained outer sleeve of the IUS was seen with fibrous tissue wrapped over its surface. It was grasped with forceps via the hysteroscope and removed from the uterine cavity. Menses were resumed 3 weeks later.

The potential reasons for a non-intact intrauterine device (IUD) include uterine perforation, IUD migration, damage to the device during insertion or removal, and embedment in the uterine wall. Okoro<sup>1</sup> reported a case in which the arms of the IUS retracted into the hormonal cylinder upon removal. The author presumed that during the removal process the sleeve had slid cranially as the IUS was pulled through the internal os and cervical canal that were narrow due to postmenopausal atrophy. Parker and Orr<sup>2</sup> reported another case in which the hormone sleeve was left in the uterine cavity, which was thought to be due to cervical stenosis.

In the present case, we believe that the hormonal cylinder was left in the cavity upon removal because of intrauterine adhesions. Unlike copper IUDs, the IUS has a silicone sleeve surrounding its vertical stem, containing the active progestogen, LNG. The knobs at the end of the two arms can usually prevent the outer sleeve slipping off completely if it loosens, but in this case the sleeve slipped past the horizontal arms during removal. Alanko et al.<sup>3</sup> pointed that if the IUS is used for more than 5 years, the hormone cylinder may become progressively looser, and sliding may therefore become more frequent. But in this case the IUS had been in situ for only 13 months.

In China, more than eight million induced abortions are performed every year.<sup>4</sup> Thus intrauterine adhesions may occur more often than elsewhere. During the removal of copper IUDs we often find the IUD covered with fibrous tissue. But doctors in China still have little experience with the IUS, and there have been few related reports. In this case, the woman had undergone induced abortion three times, and the outer sleeve of the IUS was enwrapped by fibrous tissue (Figure 1). This may explain why, when the device was pulled out, the hormone sleeve was left in the cavity, which led to continuing amenorrhea.

This case highlights the importance of examining the integrity of the IUS after removal. We also noticed that although the hormonal cylinder was left in the cavity, transvaginal ultrasonography did not reveal it. The typical unique sonographic appearance of the IUS includes both proximal and distal ends of the vertical arm of the device. Imaging of the IUS needs higher skills and is less accurate than imaging of copper IUDs.<sup>5</sup> Therefore in assessing patients with continuing symptoms after IUS removal, the use of three-dimensional transvaginal ultrasonography or hysteroscopy may be helpful.

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#### Competing interests None declared.

Editor's Note The complication of displacement of the hormonal sleeve of the LNG IUS was first described in this Journal by Torbé *et al.* in 2009 (Torbé EJV, Eddowes H, Aston K, Missing IUS arms? *J Fam Plann Reprod Health Care* 2009;35:131) and has since been the subject of several further letters. We publish the present letter as it describes intrauterine adhesions as an unusual, but significant, cause of this phenomenon.



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### REFERENCES

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**Figure 1** Left to right: enveloping fibrous tissue; silicone hormonal sleeve after removal from uterine cavity; T-shaped plastic frame of original intrauterine system.



