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Case report

Steroid reservoir loss during removal of perforated Levonorgestrel 52 mg intrauterine device☆,☆☆

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ABSTRACT

A 22-year-old G1P1 Caucasian female had hysteroscopic removal of a perforated intrauterine device during which the steroid reservoir of the intrauterine device was lost. Isolated steroid reservoirs are radiolucent on plain film radiography. We located the reservoir in the peritoneal cavity with magnetic resonance imaging and removed it via laparoscopy.

1. Introduction

Levonorgestrel-containing intrauterine devices (IUDs) are increasingly popular, highly effective forms of contraception. Delivery of hormone is accomplished through a steroid reservoir that encircles the IUD stem. Reservoir loss during IUD removal is a rarely reported adverse event that can potentially have repercussions on menstruation and fertility [1,2].

Perforation events involving these devices are also exceedingly rare, occurring in roughly 0.1–0.2% of placements [3,4]. Perforation risk may be increased in postpartum women or those who are lactating compared with non-lactating women [4,5]. When perforation occurs, all or part of the IUD can be extruded into the peritoneal cavity. We describe a case of a 22-year-old woman with perforation of a levonorgestrel-containing IUD leading to isolated loss of the steroid reservoir in the peritoneal cavity.

2. Case report

A 22-year-old G1P1 Caucasian female had a levonorgestrel 52 mg IUD placed 6 weeks following Cesarean delivery. At a well-woman visit 15 months after IUD insertion, she noted continued breastfeeding since delivery and reported intermittent, vague pelvic pain since IUD placement with no other complaints. We did not visualize or palpate the IUD strings during speculum or bimanual pelvic examination. Transvaginal ultrasonography showed the IUD within the lower uterine segment near the cervix.

We unsuccessfully attempted to remove the device by grasping the strings blindly through the cervix with forceps and through office hysteroscopy. Repeat transvaginal ultrasonography suggested IUD embedment within the myometrium but perforation could not be excluded. Subsequent hysteroscopy in the operating room showed the device to be entirely embedded within the anterior uterine wall (Fig. 1). We removed the device with difficulty; however, the reservoir normally affixed to the device was absent and we could not find it within the uterine cavity or elsewhere in the operating room. We obtained an intraoperative pelvic x-ray which showed no evidence of the reservoir and thus assumed it to be extracorporeal.

Subsequent consultation with the manufacturer, however, revealed that while the body of the IUD is radiopaque, the reservoir is not. The manufacturer suggested 3D ultrasound or MRI for localization. The former did not yield results, but the MRI elucidated a tubular structure along the anterior serosal surface of the uterus consistent with the reservoir (Fig. 2). On laparoscopy, we found the reservoir resting between the round ligament and the anterior pelvic peritoneum and removed it without incident (Fig. 3).

☆ Written consent was obtained from the subject of this report.
☆☆ Disclosures: All authors have none to report.
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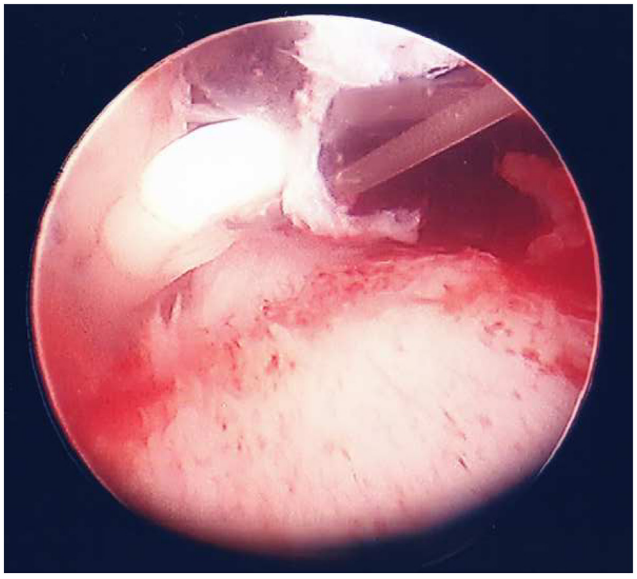

Fig. 1. IUD embedded within the anterior wall of the uterus.

3. Comment

Two cases of reservoir retention within the uterine cavity have been previously described [1,2]. Both cases reported difficult IUD removal. As in our own case, a difficult removal through a stenotic opening appears to increase the risk of the reservoir slipping off the device. We could easily replicate this process manually in the office. Providers should meticulously inspect all removed IUDs to ensure complete removal, as absence of the reservoir from the frame is a subtle difference from an intact device.

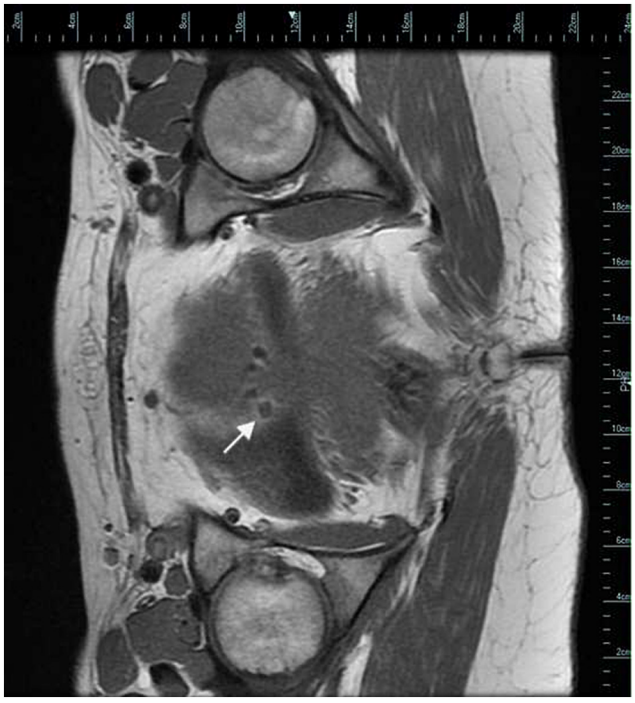

Fig. 2. Axial T1-weighted MRI of pelvis. Arrow shows 5×4 mm tubular structure along the anterior serosal surface of the uterus. Note the regularity of the outline of the structure, suggesting a man-made object.

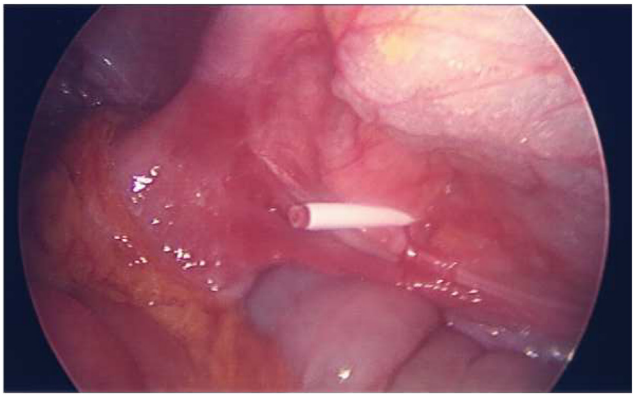

Fig. 3. Steroid reservoir resting between the round ligament and the anterior pelvic peritoneum.

In one previously reported case, the patient presented with secondary amenorrhea after IUD removal, presumably due to the retained reservoir [1]. Cases of impaired fertility due to extrauterine IUDs have been reported in the past [6]. An extrauterine reservoir could logically cause similar problems. Most guidelines suggest to promptly remove extrauterine IUDs if possible, regardless of symptom status [7,8]. Others suggest that asymptomatic patients may not require surgical management [9]. Isolated extrauterine reservoirs, however, have no precedent for management. Since it is possible for these to impact fertility or menstruation, we recommend that the decision to remove a lost, extrauterine, reservoir be made individually with each patient.

In the event that removal is desired, locating the reservoir may be challenging. MRI appears to be the best modality for locating these reservoirs. In our case, the reservoir was visualized on both axial and sagittal, T1 and T2 weighted images. However, small objects are easily missed, and orientation and positioning will be case-specific; thus, it is important for the clinician to communicate clearly with the reading radiologist regarding the expected appearance of an isolated reservoir.

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