

Case Report: Postmenopausal Bleeding Unveiling Actinomyces, A Forgotten 47-Year-old Intrauterine Contraceptive Device



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Background

A 72-year-old para 1, woman was referred from primary care with post-menopausal bleeding (PMB). She reported intermittent bleeding for an extensive number of years, as such, she did not believe that she had experienced menopause. She had an intra-uterine contraceptive device (IUCD) in-situ that was inserted 47 years prior and had not been removed. She had normal smear tests, was not on hormone replacement therapy (HRT) and had no significant risk factors for gynaecological cancers.

Clinical assessment

She was assessed in the outpatient PMB fast-track clinic. On examination, the vulva and vagina appeared atrophic. Speculum exam revealed fusion and stenosis of the vagina superiorly, as such the cervix could not be palpated easily on bimanual exam. A punch biopsy of the cervix was taken and sent for histology.

Further investigation by hysteroscopy at the clinic was performed. The IUCD was visualised within the uterine cavity with its threads curled inside (Figure 1). The lining of the uterus had grown over the coil as well as polypoidal tissue. A pipelle biopsy of endometrial tissue was taken. Removal at the coil at the outpatient clinic was not attempted as the patient was not tolerating the procedure.



Figure 1: IUCD buried in the endometrial lining of the uterus

Investigations and management

Transvaginal ultrasound scan showed an endometrial thickness of 5.6cm with an IUCD in-situ and small left ovarian cyst measuring 13 x 7 x 8mm. The results of the cervical biopsy found evidence of granulation tissue with chronic, active inflammation. The endometrial biopsy found features of endometritis with actinomyces.

Following microbiology advice, a 6-week course of oral amoxicillin was initiated. The patient was offered conservative management with antibiotics or surgical removal of the IUCD post-treatment. She opted for medical management initially.

At 2-month follow-up, she reported ongoing intermittent PMB and chose to proceed with hysteroscopy under general anaesthetic (GA). Intraoperatively, a scarred uterine cavity was observed, with the IUCD embedded in the endometrium. The coil was successfully removed, and endometrial curettings were taken (**Figures 2 & 3**). She was discharged the same day.

Histology confirmed chronic endometritis. Culture of the coil grew *Fusobacterium nucleatum*, sensitive to metronidazole. Endometrial biopsy culture identified *Propionibacterium propionicum* via partial 16s rDNA sequencing. Microbiology advised a further 6-week course of oral amoxicillin. Follow-up is planned in 2–3 months.

Post-menopausal Bleeding

Post-menopausal bleeding is defined as vaginal bleeding that occurs following 12-months of amenorrhoea. The most common cause being genitourinary atrophy (1). Other causes of PMB include urogenital infection, medications such as; HRT, tamoxifen and anticoagulants, benign or malignant gynaecological conditions and foreign bodies. 10-20% of women with PMB may have endometrial hyperplasia and endometrial cancer, as such PMB must be appropriately investigated and managed (2). In this case, although the clear cause of bleeding with a retained IUCD it was important to rule out the possibility of endometrial cancer as well as the other prior mentioned differentials. Transvaginal ultrasound is the initial investigation of choice using a cut of an endometrial thickness $\geq 4\text{mm}$ to decide on whether further investigation by endometrial sampling or hysteroscopy is required (3), in our case the ET was 5.6mm.

IUCD’s and Actinomyces

The first documented intrauterine contraceptive device (IUCD) was introduced in 1909 by Dr. Richard Richter using a ring of silkworm gut. By the late 20th century, various IUCD models emerged, with the contraceptive effect of copper discovered in the 1960s. The device removed in this case (Figure 2) was identified as a Safe-T Coil 33-S, a copper IUCD manufactured in 1965 (Figure 4).

IUCD use is associated with a transiently increased risk of upper genital tract infection, particularly within 20 days of insertion. Beyond this period, the overall infection risk is low. *Actinomyces* is a chronic granulomatous infection caused primarily by *Actinomyces israelii*, a gram-positive bacillus. These bacteria are part of the normal mucosal flora of the female genital tract but can cause invasive disease if the mucosal barrier is disrupted.

Studies indicate a higher prevalence of *Actinomyces* in IUCD users compared to non-users. Cervical smears can detect *Actinomyces* in up to 7% of IUCD users. Asymptomatic individuals typically do not require treatment, as this may represent colonisation rather than infection. However, in symptomatic patients with a positive smear and an IUCD, further investigation and treatment are warranted.

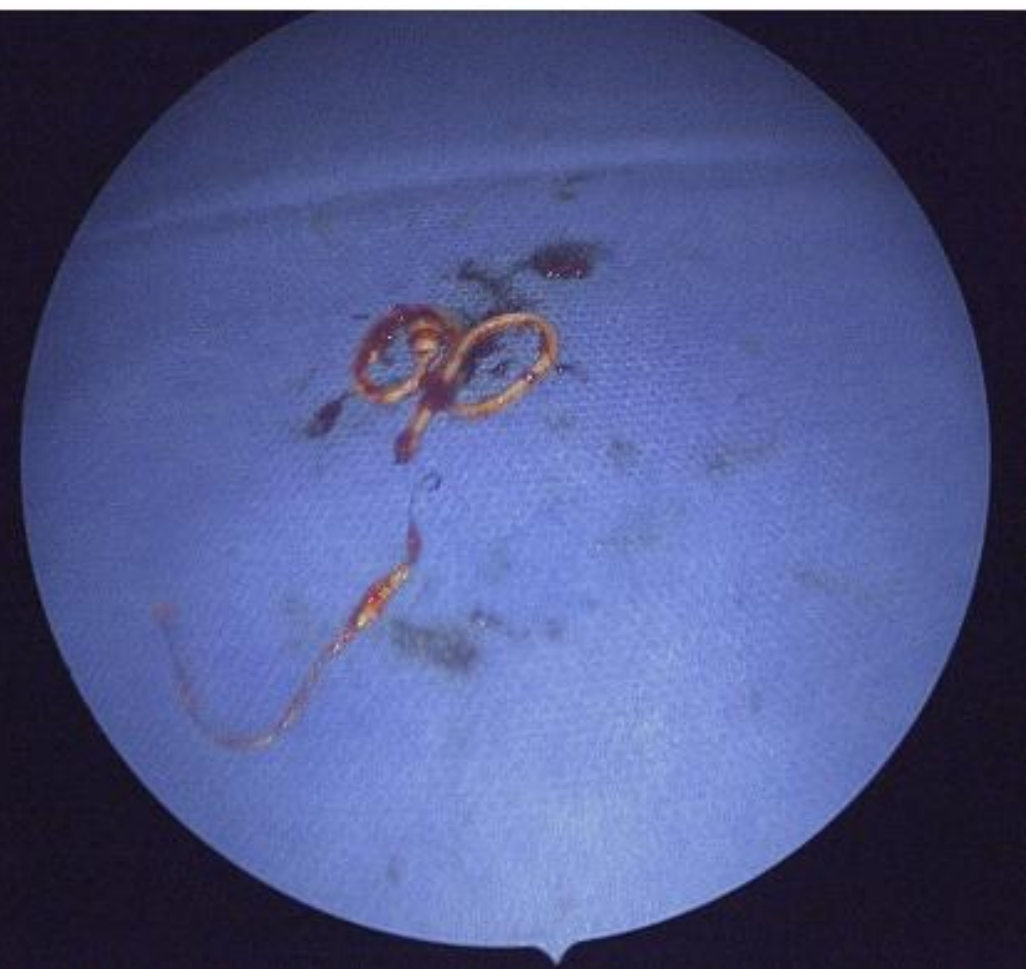


Figure 2: Intra-uterine contraceptive device retrieved

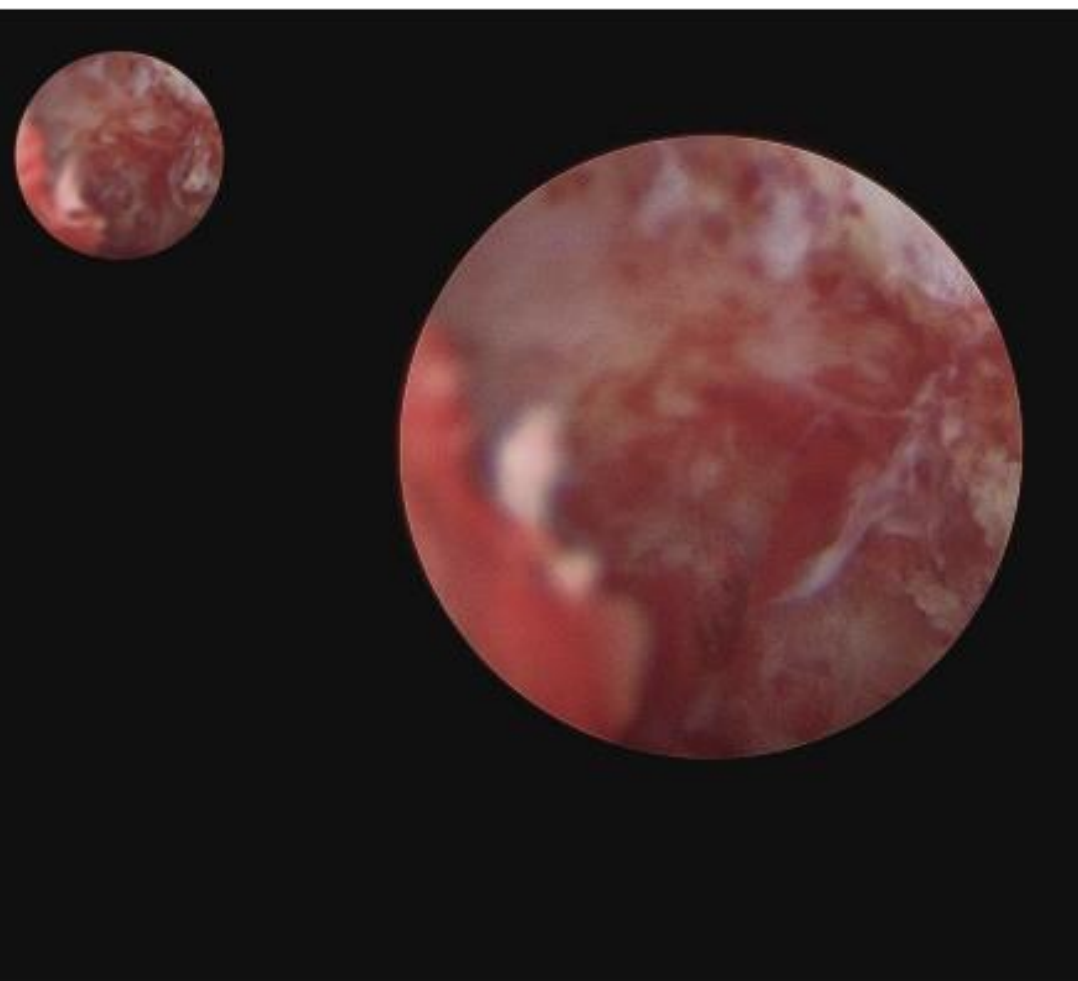


Figure 3: Uterine cavity after coil removal and curettage



Figure 4: The Saf-T-33 Intra-uterine copper device

Conclusion

Actinomyces infections due to IUCDs are well-documented but the retention of IUD for extended duration of over four decades makes this an exceptional and clinically valuable report. This case emphasizes the need for clinicians to think broadly while managing postmenopausal bleeding, and to be aware of the long-term implications of retained IUCD, even after years of asymptomatic use.

References

- Sung S, Carlson K, Abramovitz A. Postmenopausal bleeding. InStatPearls [Internet] 2023 Dec 20. StatPearls Publishing.
- Ring KL, Mills AM, Modesitt SC. Endometrial hyperplasia. Obstetrics & Gynecology. 2022 Dec 1;140(6):1061-75.
- Bakour SH, Timmermans A, Mol BW, Khan KS. Management of women with postmenopausal bleeding: evidence-based review. Obstetrician & Gynaecologist. 2012 Oct 1;14(4).
- Bolognese RJ, Corson SL, Piver MS. The saf-t-coil, an IUD. Fertility and Sterility. 1968 Nov 1;19(6):957-9.
- Martínez F, López-Arregui E. Infection risk and intrauterine devices. Acta obstetricia et gynecologica Scandinavica. 2009 Jan 1;88(3):246-50.
- Könönen E, Wade WG. Actinomyces and related organisms in human infections. Clinical microbiology reviews. 2015 Apr;28(2):419-42.
- Valicenti JF, Pappas AA, Graber CD, Williamson HO, Willis NF. Detection and prevalence of IUD-associated Actinomyces colonization and related morbidity: a prospective study of 69,925 cervical smears. Jama. 1982 Feb 26;247(8):1149-52
- FSRH Guideline (March 2023) Intrauterine Contraception. BMJ Sexual & Reproductive Health 2023; 49:Suppl 1. Published https://srh.bmj.com/content/49/Suppl_1. doi: 10.1136/bmj.srh-2023-IUC
- Hubacher D. Intrauterine devices & infection: review of the literature. Indian Journal of Medical Research. 2014 Nov 1;140(Suppl 1):S53-7.