FAMILY PLANNING ALLIANCE AUSTRALIA

# Intrauterine device malposition and perforation

Family Planning Alliance Australia: Statement from the Clinical Reference Group of the Medical Advisory Committee March 2022

## Background

A correctly positioned intrauterine device (IUD) is fundally placed with the arms fully extended and the vertical portion extending straight downwards. Generally, if an IUD is within 2 cm of the fundus (i.e. from the fundal end of the cavity, not the serosa, to the superior end of the IUD) and no part is protruding into the cervical canal, it is considered to retain its contraceptive efficacy. (1)

An incorrectly positioned IUD may be:

- located in the lower uterine segment, >2cm from the fundus
- partially expelled or intracervical
- embedded in the myometrium or rotated
- protruding through the serosa or within the abdominal cavity.

## Low lying IUD

An IUD is considered to be low lying if it is positioned more than 2 cm below the uterine fundus.

IUDs can migrate up and down within the uterine cavity with the menstrual cycle. (2-4) If an IUD is found to be low lying shortly after insertion, alternative contraception can be advised for a period of time until a repeat ultrasound is performed to allow the IUD to reposition.

The efficacy of the hormonal-IUD may be less affected by its position in the uterine cavity than a copper IUD, because of the local release of levonorgestrel. (5) However contraceptive efficacy of any low-lying IUD cannot be guaranteed. The decision to remove and replace a device is a matter of individual clinical judgement following discussion with the patient and consideration of individual circumstances such as age, background fertility, uterine cavity size and risk of reinsertion.

There is insufficient evidence to indicate increased bleeding, pain or risk of expulsion with a low lying IUD if it sits above the internal os. (6)

If any part of the IUD protrudes into the cervical canal, it is not considered effective for contraception. It should be removed and replaced.

## Partial expulsion or intracervical IUD

An IUD is considered intracervical when at least part of the IUD sits within the cervical canal. In a partial expulsion the IUD sits in the cervical canal and the tip extends through the external os. This can present as cramping or pain, and/or a change in bleeding pattern. There is an increased risk of pregnancy if the IUD sits within the cervical canal. (7) The IUD should be removed and replaced.

## Embedded IUD

An embedded IUD is a term used to describe penetration of part of the IUD (usually the arm) into the myometrium without breaching the serosa. An embedded IUD should be removed as impingement on the myometrium may cause pressure necrosis of underlying tissue which could lead to perforation of the device. (8, 9) If an ultrasound suggests an IUD is embedded in an asymptomatic patient, and ongoing IUD use is desired, a repeat ultrasound may be considered to confirm the diagnosis, preferably with a radiology provider experienced in the interpretation of gynaecological imaging. It is often possible to remove an embedded IUD by applying gentle traction. Efforts to remove the IUD should be abandoned if there is pain or resistance and the person should be referred for specialist management which will often involve hysteroscopic removal. Referral to a specialist ultrasound service for removal under ultrasound guidance may also be an option.(10) Immediate replacement is acceptable if the IUD suspected of being embedded is easily removed. A period of 6 weeks to allow myometrial repair can be considered if the removal was difficult and alternative contraception is acceptable.

## IUD perforation

A perforated IUD can be protruding through the serosa (partial) or completely outside the uterus and within the abdominal cavity (complete). Perforation is rarely associated with serious sequelae (11-13) although there has been a case report of a small bowel obstruction, due to adhesions. (14)

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The risk of perforation with IUD insertion is 0.9 per 1,000 insertions at 12 months.(15, 16) There is an increased risk of perforation in the postpartum period, thought to be associated with uterine atrophy. There is 6.1 times increase in risk in those who are breastfeeding, compared to those not breastfeeding. (16) An excess risk remains up to 9 months postpartum regardless of breast feeding.(15, 16) It is plausible that the risk of perforation might be increased in other situations where a degree of uterine atrophy occurs, e.g., long term use of depot medroxyprogesterone acetate (Depot Provera), testosterone used for gender affirmation therapy or postmenopause, although there are no studies specifically demonstrating this.

Less experienced inserters have a higher perforation rate than more experienced inserters.(11)
Perforation can occur with the sound, the introducer, or the IUD itself. If perforation with the sound or introducer is suspected the procedure should be abandoned.

In some instances, an embedded IUD may eventually perforate by making its way through the myometrium to the serosal surface. Perforation over a period of time may also occur if the device dimensions are larger than the uterus. (8)

The majority of IUD perforations are not detected at the time of insertion.(17) Around 1 in 3 are detected 12 months or more after insertion. (12)

Perforation should be considered if:
- The uterine length sounds to >10 cm
- There is unexpected bleeding from the cervical os at the time of insertion
- The IUD threads cannot be seen
- There is persistent unexpected pain and or bleeding post insertion
- Threads are visible and the IUD cannot be easily removed
- A pregnancy occurs. (13)

Following IUD insertion, there should be a low threshold to investigate, i.e., difficult insertion particularly if the patient has risk factors for uterine perforation or the inserter is inexperienced.

If perforation with the IUD is suspected and the patient is assessed as haemodynamically stable, they can be discharged home with a plan for alternative contraception cover. A pelvic ultrasound should be performed without unnecessary delay to localise the device. If the device cannot be visualised on pelvic ultrasound, an abdominal X-Ray should be performed to detect an extra-uterine device. Although many patients are asymptomatic with IUD perforation, and there is a very low risk of injury to intra-abdominal and pelvic structures, (2), the patient should be referred for laparoscopic removal and additional contraception offered. (3) Antibiotic cover is not required while waiting for removal. Patients should be advised to present to the emergency department if showing symptoms of intraabdominal sepsis e.g., severe abdominal pain, vomiting, fever, or rigors.

## References

1. Intrauterine Contraception: Faculty of Sexual & Reproductive Healthcare Clinical Effectiveness Unit; 2015 [updated September 2019; cited 2021 23 June]. Available from: https://www.fsrh.org/standards-and-guidance/documents/ceuguidanceintrauterinecontraception/.
2. Faundes D, Perdigao A, Faundes A, Bahamondes L, Petta CA. T-shaped IUDs accommodate in their position during the first 3 months after insertion. Contraception. 2000;62(4):165-8.
3. Morales-Rosello J. Spontaneous upward movement of lowly placed T-shaped IUDs. Contraception. 2005;72(6):430-1.
4. Faundes D, Bahamondes L, Faundes A, Petta CA. T-shaped IUD move vertically with endometrial growth and involution during the menstrual cycle. Contraception. 1998;57(6):413-5.
5. Pakarinen P, Luukkainen T. Five years' experience with a small intracervical/intrauterine levonorgestrel-releasing device. Contraception. 2005;72(5):342-5.
6. Golightly E, Gebbie AE. Low-lying or malpositioned intrauterine devices and systems. J Fam Plann Reprod Health Care. 2014;40(2):108-12.
7. Anteby E, Revel A, Ben-Chetrit A, Rosen B, Tadmor O, Yagel S. Intrauterine device failure: relation to its location within the uterine cavity. Obstetrics and gynecology. 1993;81(1):112-4.
8. Goldstuck ND, Wildemeersch D. Role of uterine forces in intrauterine device embedment, perforation, and expulsion. Int J Womens Health. 2014;6:735-44.
9. Ferguson CA, Costescu D, Jamieson MA, Jong L. Transmural migration and perforation of a levonorgestrel intrauterine system: a case

report and review of the literature. Contraception. 2016;93(1):81-6.
10. Townsend L, Luxford E, Mizia K. Effectiveness of ultrasound-guided removal of intrauterine devices. Aust N Z J Obstet Gynaecol. 2022.
11. Rowlands S, Oloto E, Horwell DH. Intrauterine devices and risk of uterine perforation: current perspectives. Open Access J Contracept. 2016;7:19-32.
12. Barnett C, Moehner S, Do Minh T, Heinemann K. Perforation risk and intra-uterine devices: results of the EURAS-IUD 5-year extension study. Eur J Contracept Reprod Health Care. 2017;22(6):424-8.
13. Kaislasuo J, Suhonen S, Gissler M, Lahteenmaki P, Heikinheimo O. Uterine perforation caused by intrauterine devices: clinical course and treatment. Human reproduction. 2013.
14. Loveless A, Dhari A, Kilpatrick CC. Perforated levonorgestrel-releasing intrauterine system resulting in small bowel obstruction: a case report. J Reprod Med. 2014;59(11-12):611-3.
15. Heinemann K, Barnett C, Reed S, Mohner S, Do Minh T. IUD use among parous women and risk of uterine perforation: a secondary analysis. Contraception. 2017;95(6):605-7.
16. Heinemann K, Reed S, Moehner S, Do Minh T. Risk of uterine perforation with levonorgestrel-releasing and copper intrauterine devices in the European Active Surveillance Study on Intrauterine Devices. Contraception. 2015;91(4):274-9.
17. Harrison-Woolrych M, Ashton J, Coulter D. Uterine perforation on intrauterine device insertion: is the incidence higher than previously reported? Contraception. 2003;67(1):53-6.

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The Medical Advisory Committee of Family Planning Alliance Australia is comprised of senior medical educators, senior medical officers and medical directors of the member family planning organisations. The Clinical Reference Group of the Medical Advisory Committee exists as a means to review current clinical practice and provide evidence based recommendations for use by sexual and reproductive health practitioners where clinical guidance is lacking.



## State / Territory sexual health and family planning organisations

**Western Australia**
SHQ (Sexual Health Quarters)
shq.org.au

**Northern Territory**
Family Planning Welfare Association of NT
fpwnt.com.au

**South Australia**
SHINE SA
shinesa.org.au

**Queensland**
True
true.org.au

**ACT**
Sexual Health and Family Planning ACT
shfpact.org.au

**New South Wales**
Family Planning NSW
fpnsw.org.au

**Victoria**
Sexual Health Victoria
shvic.org.au

**Tasmania**
Family Planning Tasmania
fpt.asn.au