

# Asymptomatic isthmico-cervical uterine perforation with IUD – our experience and literature review

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## Summary

**Purpose:** The study aim was to report an unusual case of a misplaced IUD in isthmico-cervical region causing partial uterine perforation and discuss literature data regarding such a condition. **Case Report:** A 50-year-old women was referred to the present institution for IUD extraction. She was diagnosed with spontaneously misplaced IUD located in isthmico-cervical region of the uterus causing partial perforation. The time of dislocation was unknown, as she was completely asymptomatic for ten years after IUD application. Moreover, she had no risk factors for device misplacement. The removal of IUD was uneventful. **Conclusion:** Isthmico-cervical misplacement of IUD, although rare, can occur at any time and can be asymptomatic. Thus, women with IUD should be annually checked-up in order to prevent possible IUD complications.

**Key words:** Intrauterine device; Secondary perforation; Asymptomatic uterine misplacement.

## Introduction

Intrauterine device (IUD) is one of the most popular and widely used (14% of women worldwide) methods of contraception. IUD is confirmed as a safe and reliable [1, 2]. Rare complications of IUD contraception are device misplacement and uterine perforation. Misplacement and perforation can occur at any time. They are mostly followed by pelvic pain and bleeding but can also be completely asymptomatic [3, 4].

The aim of this paper was to report an unusual case of a misplaced IUD that caused asymptomatic partial uterine perforation in the isthmico-cervical region diagnosed at the time of extraction ten years after application and to discuss literature data regarding such conditions.

## Case Report

A 50-year-old woman (secundipara, secundigravida) was referred to the present institution for IUD extraction. At the time of referral she was menopausal for two years. The copper device was inserted ten years ago, two years after her last delivery. Following IUD application, patient did not have irregular bleeding, pelvic pain, or any other symptom of possible complications. Therefore, she did not go to regular annual gynecological check-ups. On gynecological examination IUD was suspected to lie in oblique position through isthmico-cervical region of the uterus, thus

deforming the cervix (Figure 1). The arms of the IUD were located on the left, while the rest of the IUD was embedded in the right uterine wall, reaching just below the mucosa, causing the partial uterine perforation (Figure 1). Ultrasound examination confirmed the clinical findings. As the part of the institutional protocol, pelvic X-ray scan was made. It revealed the presence of T-shaped IUD in the pelvis inferior to the pelvic brim. However, IUD seemed to be dislocated and positioned almost horizontally (Figure 1). The IUD was grasped with a forceps and applying arcuate movement gently pulled out of the uterine wall and extracted through the cervical canal.

Control ultrasound scan after intervention showed partial uterine perforation that was made by the IUD (Figure 1). There were no other pathological findings in the uterus or adnexal regions. Moreover, there was no free liquid in the Douglas pouch. The intervention was uneventful and the patient was discharged from the Clinic on the same day. Regular annually gynecological check-ups were suggested.

## Discussion

Perforation of the uterus by IUD is uncommon, but when it occurs it can cause potentially serious complications. After penetrating the uterine wall, IUD can migrate to the peritoneal cavity, intestines, bladder, ureter or fallopian tubes causing chronic pelvic pain, dyspareunia, bleeding, stone formation, infection, and other visceral complications [1,5].

IUD perforation can be primary or secondary [6]. Most

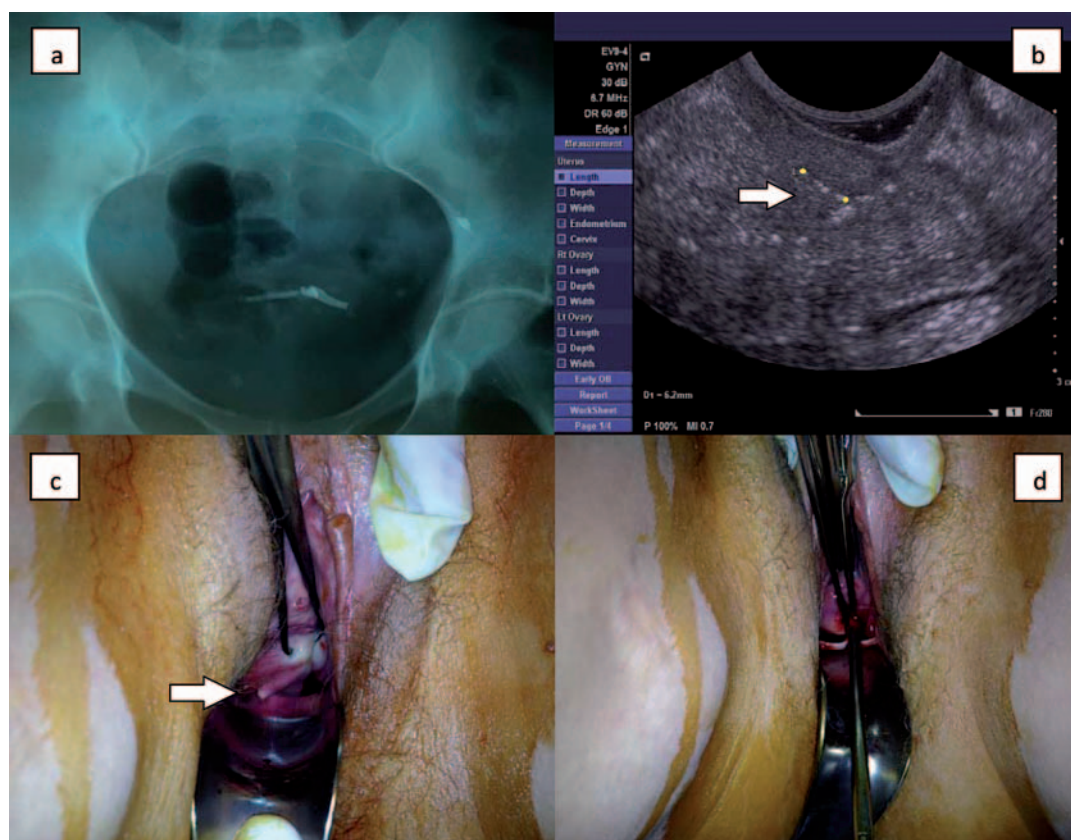


Figure 1. — IUD cervical perforation (a – pelvic X-ray before IUD extraction; b – control ultrasound scan of the uterus after IUD extraction with the marked perforation site; c – partial IUD perforation of the isthmico-cervical region distorting the cervix; d – transcervical IUD extraction).

perforations are primary and occur at the time of insertion. The forces required to perforate the uterus are higher than the forces needed to insert an IUD [6]. Therefore, severe pain at insertion might indicate uterine perforation, but as some pain during application can be expected, this factor is not reliable for differentiating successful placement from complications [7].

The secondary perforation also regarded as “migrating IUD” denotes that an IUD, which was in the uterine cavity for eight weeks or more after insertion, is found in an ectopic position [6]. The IUD remains in place due to the equilibrium between downward fundal force and upward forces of the myometrial promontory [6]. However, uterine muscle can also provide the force responsible for IUD misplacement. In some women, IUDs can be driven by the myometrial force alone to dislocate from its adequate intrauterine position [6].

Women experiencing IUD perforation are usually multiparas in their early 30's [7]. No clinically significant differences in incidence of IUD perforations or patient characteristics have been registered between different types of IUD (copper or levonorgestrel-releasing) [7]. Several risk factors for uterine perforation have been described such as atrophic uterus, multiparity, history of cesarean delivery and myomectomy, uterine anomalies or posture with a steep flexion angle (hyperanteflexed or retroflexed), insertion

performed promptly after curettage, as well as an inadequate insertion technique [1,8]. Some authors have hypothesized that IUD users who experience secondary perforation have abnormally arranged myometrial fibers [6]. Contributing factors to IUD perforation also include the immediate post-partum period (six months after delivery) and lactation (regardless of the IUD insertion time) due to uterine involution and increased contractility [7, 9].

Most IUDs remain in situ, but if there is a disproportion between IUD size and volume of the uterine cavity, device can be expelled through cervix or perforate some of the uterine walls [6, 8]. IUD misplacement of different extent occurs in up to 18% of IUD users. It is more common in women with smaller fundal endometrial diameters [9]. IUD misplacement is variable, ranging from embedment into the endometrium or myometrium to complete transuterine perforation through the serosa with migration of the IUD into the peritoneal cavity [9]. IUD will be expelled through the path with least resistance. The penetration of the uterine wall is usually slow until finally IUD protrudes through the serosa [10]. Majority of perforations occur in the uterine corpus and fundus. There are only few cases reported in the literature with cervical perforation caused by an IUD [11].

According to the literature, the median time from insertion to diagnosis of misplaced IUD is on average five months [8]. So far, only few cases of IUD inserted a cou-

ple of years prior to perforation have been reported [11]. Studies regarding IUD-associated perforations indicate that the majority of perforations present with mild symptoms. Symptoms usually begin immediately after perforation or within next five days. Nevertheless, one-third of patients are asymptomatic [1, 12]. The most common symptoms are abnormal bleeding, pelvic pain or both, together with missing threads or unintended pregnancy [1,2]. While sudden heavy bleeding may indicate IUD expulsion or perforation, inter-menstrual spotting is more common [10, 13]. Signs and symptoms mostly force women to seek medical care. Asymptomatic patients are usually diagnosed during routine check-ups or because of unintended pregnancy [14].

After IUD insertion, its position should be confirmed via its threads. A misplaced IUD is usually suspected by shortening or disappearance of its retrieval threads. Still, threads may break off or retract into the cervical canal or uterus. Missing or shortened threads need detailed diagnostics. Cytobrush or IUD hook can be used to locate retracted threads in the cervical canal, but if the threads are not located, pelvic ultrasound or abdominal X-ray should be undertaken [10]. Prevention of IUD misplacement and its complications include regular annual gynecological check-ups [5, 7].

The primary diagnostic examination of IUD misplacement or uterine perforation should be a vaginal ultrasound. If diagnosis is not confirmed by ultrasound, the pelvic and abdominal X-ray should be performed [2, 9, 15]. Computerized tomography or magnetic resonance imaging are good alternatives for further investigation if visceral complications are suspected [9, 15]. Moreover, hysteroscopy or curettage can be used for both diagnosis and treatment. The traditional form of treatment has been laparotomy, but nowadays laparoscopy, as less invasive and safer procedure, is the treatment of choice for abdominal misplacement [5, 9].

Intramurally embedded IUDs as well as partially perforating IUDs could be removed by hysteroscopy [1]. In patients with partial expulsion of the IUD into the cervix, IUD removal can usually be achieved by traction with alligator forceps or an IUD hook. The IUD should not be reinserted. If there is resistance to removal or the IUD breaks, operative hysteroscopy should be undertaken [9]. The majority of patients can be treated on outpatient basis, while only those with suspected infection need inpatient treatment [10].

The present reported case is distinct due to a completely spontaneous misplacement of the IUD with a partial perforation of the isthmico-cervical region. The time when the dislocation occurred remains unknown, as the patient was completely asymptomatic for ten years following IUD application. Moreover, the patient had no risk factors for IUD-related uterine perforation. Besides all the complications, the removal of IUD was uneventful.

## Conclusion

Secondary cervical perforation by IUD is extremely rare, but can happen at any time and be asymptomatic. Thus, women with IUD need to be advised regarding the possibility of asymptomatic IUD misplacement and benefits of regular annual gynecological examinations.

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