

Intrauterine Device Partial Migration into the Bladder with Stone Formation: A Case Report

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Introduction

The intrauterine device is one of the most widely used contraceptive methods in the world [1]. It is considered a safe and effective mean of contraception [1]. Few complications are reported secondary to its use [2]. The intrauterine device is one of the most used contraceptive methods in the world. Its migration through uterine perforation is particularly rare and its incidence is in the range of 0.5 to 1/1000 [3]. Migration through uterine perforation is the most feared and serious complication. It commonly occurs towards the abdominal cavity and more rarely towards the bladder. However, there are several articles on intra bladder migration of IUD have been published in recent years reporting mainly complete migrations [4]. In this case, migration is most often associated with the formation of a bladder stone [5].

We report the case of a patient with partial migration of IUD into the bladder. This work reports the first case of IUD migration in our department this past 2 years. Partial intra-bladder migration is particularly rare and very few articles report such cases. The IUD migrated by crossing the uterine wall by its upper 3/4 while remaining anchored in the uterine wall in its lower part, creating a bridging aspect between the bladder and the uterus.

Case Report

Here is a 39-year-old patient with no previous history of disease, who had normal vaginal delivery three times. She had an IUD inserted 5 months after her last delivery.

The patient was seen in gynecological consultation for IUD check-up at 6 weeks with perfect visualization of the 2 IUD threads through the external orifice of the uterine cervix.

The patient consulted 2 years later for pelvic pain associated with pollakiuria that had been progressing for 20 days without any other associated signs. A cytobacteriological examination of the urine was carried out before the consultation and returned sterile.

At the gynecological examination, a lack of visualization of IUD threads was noted. A plain abdominal X-ray was taken as a first-line procedure and revealed a malposition of the IUD associated with a calcium tone opacity, probably related to a bladder stone as shown in Figure 1.

A pelvic CT scan revealed IUD migration by bridging the uterine fundus and the anterosuperior border of the bladder with the formation of a sequelae granuloma containing a macro-calcification of 16 mm in diameter, probably related to a bladder calculus, associated with reactive parietal thickening of the opposite bladder wall (Figure 2). No abnormalities were noted in either kidney.



Figure 1: Plain abdominal X-ray showing the malposition of the IUD with a calcium tone opacity.

The patient was therefore scheduled for surgical removal of the IUD. An open cystolithotomy was performed to remove the bladder portion of the IUD associated with the bladder stone. The bladder was then sutured with 3/0 and 2/0 vicryl in two separate planes.

The removed end was therefore free while the lower end was still in the myometrium. We cut the IUD flush with its uterine insertion and then removed it with forceps. This was followed by removal of the lower intramyometrial end anchored in the uterus to allow complete removal of the IUD (Figure 3).

The bladder was then sutured with 3/0 and 2/0 vicryl in two separate planes. An omental flap was placed between the vesical sutures and the uterine wall in order to fill in the dead space in order to prevent a vesico uterine fistula. A tubal section ligation was performed at the same time after the patient's consent. A urinary catheter was left in place for 7 days and the postoperative follow-up was simple.

Discussion

Physiopathology

Migration by uterine perforation is a complex and difficult mechanism to apprehend. Its pathophysiology remains uncertain [6].

Several risk factors seem to be involved in uterine perforation, such as uterine thickness, uterine malposition, time of insertion, history of pelvic surgery, genital infections, multiparity, recent abortion and the experience of the doctor performing the insertion [7-10].

These factors must therefore be systematically researched and taken into consideration before any IUD insertion.

Our patient had no particular history and the IUD insertion was performed by a specialist with more than 10 years of experience, which shows that although these factors are involved, their absence does not exclude the risk of migration of the intrauterine device.

Perforation may be partial or complete, depending on whether the IUD completely or incompletely crossed through the uterine wall [11].

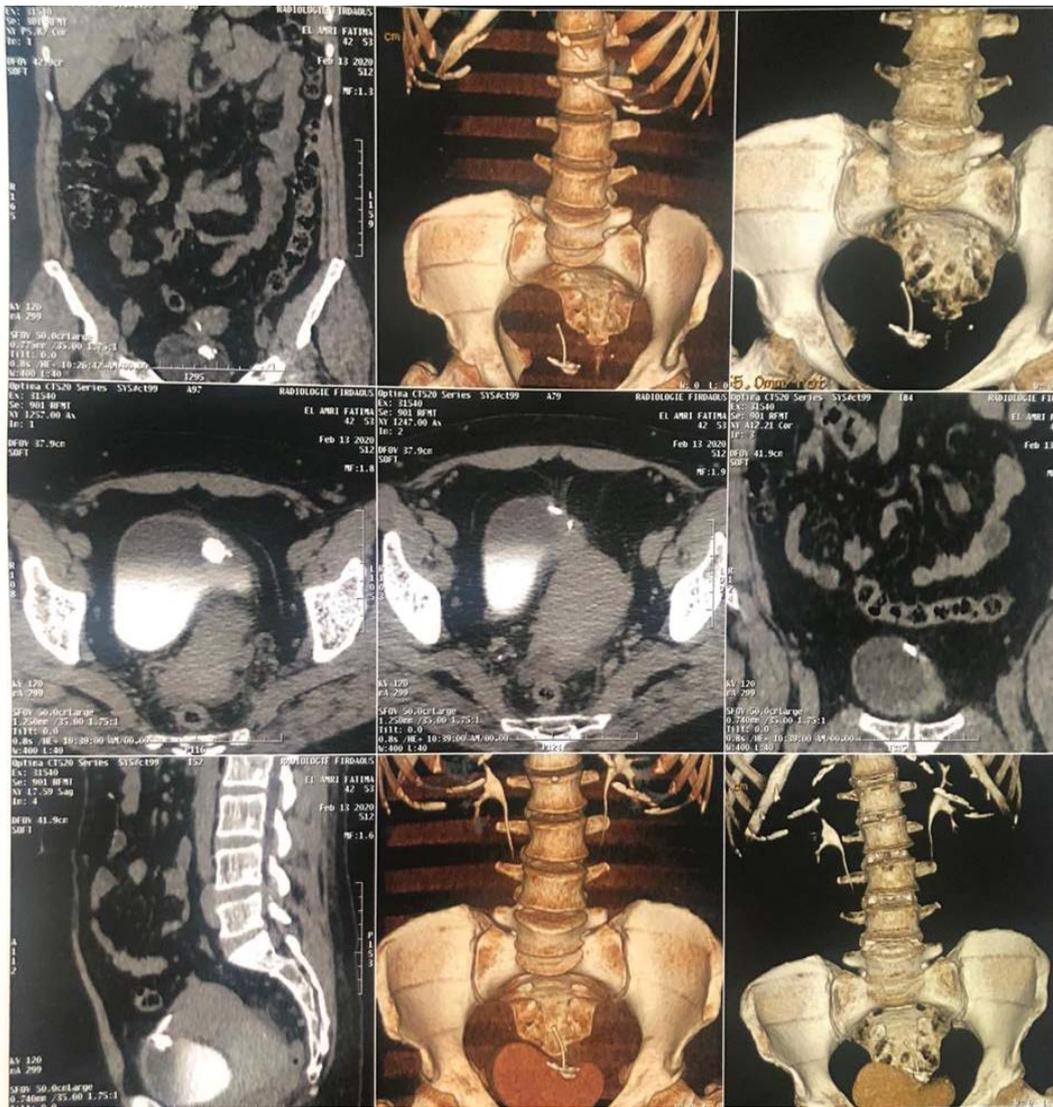


Figure 2: Pelvic CT scan showing the bridge between the uterus and the bladder.

In our case, it was a partial perforation ; the intrauterine device migrated in a bridge form by inserting into its upper 3/4 intravesical, while its lower end remained blocked in the myometrium.

Also, the formation of calculus on the IUD can only be secondary to the migration of the IUD into the bladder [12], as it is in the case of our patient.

Diagnosis

The diagnosis of the IUD’s migration is based on clinical and paraclinical elements. Clinically, the symptoms that occur are most often related to the site of migration. In the case of intra-vesical migration, symptoms of the lower urinary tract are predominant, such as urinary frequency, pelvic pain, dysuria, hematuria and recurrent urinary tract infections despite appropriate antibiotic therapy [13].

A gynaecological examination to note the lack of visualization of the IUD threads through the external os of the cervix is an essential and indispensable part of the clinical examination of any IUD-bearing patient. In our patient, a pollakiuria associated with pelvic pain that had been evolving for more than 2 weeks was the reason for consultation.

The gynaecological examination during the consultation revealed an inability to identify the IUD threads, leading to the suspicion that the IUD migrated through uterine perforation. Most often the diagnosis is paraclinical, first directed by the clinic and evoked on a plain abdominal X-ray, revealing an IUD in a bad position and a possible opacity of



Figure 3: Removed IUD and its portions.

calcium tone in relation to a sterile bladder calculus [14], and above all makes it possible to eliminate a possible expulsion of the IUD [15-17].

Abdominal ultrasound confirms the site of migration and the presence or absence of an associated vesical stone [18]. Endovaginal ultrasonography remains more interesting in the case of partial migration in order to study the residual intrauterine portion of the IUD [19].

Cystoscopy is a reliable diagnostic tool and provides ideal endoscopic treatment in cases of complete intravesical migration[20]. The pelvic scanner is generally used as a second line exam for better topographic characterization and especially in cases of complicated or partial migration [21].

In our case, a plain abdominal X-ray revealed a malposition of the IUD with a calcium tone opacity. An abdominal-pelvic CT scan was carried out from the outset to confirm the diagnosis of partial intravesical migration with bladder lithiasis and a bridging aspect between the bladder and the uterus.

Management

Management of these ectopic IUD migrations remains controversial in asymptomatic cases. Nevertheless, WHO recommends the systematic removal of IUDs that have migrated outside the uterus, as soon as the diagnosis is established, regardless of the type or site of migration [22,23].

In the case of intravesical migration, different treatment options are available. Cystoscopy remains the reference treatment, allowing a minimally invasive approach and simpler post-operative outcomes [24]. However, in the case of partial and/or complicated migration, laparoscopic or open surgery is necessary [25].

In our case, the migration was partial and the lower extremity was anchored in the myometrial wall making removal of the uterine end difficult, hence the use of open surgery.

Conclusion

IUD insertion is a contraceptive method that combines safety and effectiveness. Although complications are rare, migration through uterine perforation is a serious complication. Intravesical migration is most often accompanied by the formation of a bladder stone. Diagnosis is evoked by clinical examination and paraclinical evidence can confirm the migration. The management of these migrations is systematic and can be done by endoscopic treatment ensuring a minimally invasive approach or by open surgery in complex cases.

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