ISSN- O: 2458 - 868X, ISSN–P: 2458 – 8687
National Library of Medicine - ID: 101731606

International Journal of Medical Science and Innovative Research (IJMSIR)
IJMSIR : A Medical Publication Hub
Available Online at: www.ijmsir.com
Volume – 9, Issue – 5, October – 2024 , Page No. : 88 – 93

Caeserean Scar Isthamocele with Recurrent Failure of Mirena Coil Insertion and Uterine Ablation: Challenges Overcome By the Usage of Modified Techniques

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Citation this Article: Ashok K Shivashankara, Stephen Porter, J. Janifer Jasmine, "Caeserean Scar Isthamocele with Recurrent Failure of Mirena Coil Insertion and Uterine Ablation: Challenges Overcome By the Usage of Modified Techniques", IJMSIR - October - 2024, Vol – 9, Issue - 5, P. No. 88 – 93.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

A 40-year-old woman who underwent 2 previous caesarean sections suffered from abnormal uterine bleeding of idiopathic cause and visited a general practitioner (GP). The GP inserted a Mirena coil, but due to recurrent failure of Mirena coil insertion, and multiple Mirena coil insertions can be a risk, the patient was referred to an outpatient Gynecologic clinic with the provision of outpatient hysteroscopy or hysterectomy.

In the Gynecologic clinic, all options were discussed with the patient for the management of abnormal uterine bleeding, and the patient chose to have Novasure Endometrial ablation. During the intraoperative procedure, it was noticed that the patient had an acutely retroverted uterus, and the uterine cavity also measured <4 cm, which is the contraindication for Novasure ablation, hence the procedure was stopped. Thereafter, for further management options the patient was referred, after thorough discussion, it was decided by the patient, medical professionals, and surgeons to use a modified technique such as; the patient under an anaesthetic condition instead of traditional techniques (non-anesthetic condition) while operating hysteroscopy for complete cooperation of the patient and Mirena coil insertion.

During hysteroscopy, upon entering the internal os, brownish fluid was observed collecting predominantly on the anterior wall of the uterus. For better visibility of the uterine cavity, and to evacuate the collected blood, another modified technique was used like; an outer hysteroscopic sheath was introduced while increasing the pressure of the fluid. After the evacuation of blood, a pouch was identified in the anterior wall of the uterus diagnosing the patient with isthamocele. As the patient also had acute retroflexion and retroversion uterus, emptying the bladder and traction applied on the anterior lip of the cervix allowed for the straightening of the uterus and improved visualization through hysteroscopy.

By applying modified techniques, finally, the uterine cavity was visualised, utero-cervical length measured 10 cm, and a pipelle endometrial biopsy was performed. Mirena coil was successfully inserted into the uterine cavity and by ultrasound, the site of the Mirena coil was confirmed to be inside the uterine cavity. After an

observation at a daycare, the patient was discharged without complications. In conclusion, by modified techniques, and continuous training, we overcame the challenges of caeserean Scar Isthamocele with recurrent failure of Mirena coil insertion and uterine ablation.

Keywords: Caeserean Scar, Isthamocele, Mirena Coil, Uterine Ablation, retroflexion and retroversion uterus, Modified Techniques, Hysteroscopy

Introduction

Caeserean sections (CS) are a significant surgical obstetric treatment that can save the lives of both the mother and the baby, they are only advised for medically necessary reasons, [1,2].

According to WHO guidelines, a cesarean section (CS) rate of 10–15% of all births is desirable, [3]. The proportions of CS delivery in North America (32.3%), Europe (25%), Latin America (40.5%), and South America (42.9%). The cesarean section in Asian areas has the highest average yearly rate of rise (6.4%), [4]. From only 3% in 1992–1993, the percentage of cesarean deliveries in India has sharply climbed to 17% in 2015–16 and 21.5% in 2019-21, [5].

The complications of cesarean sections (CS) cause both maternal and newborn adverse effects such as bleeding, hysterectomy, and even maternal death, likewise a newborn also faces consequences such as poor Apgar grading (respiration, grimace, appearance, pulse, activity), stillbirth, and premature birth, [6,7].

Potentially significant complex complications in the mother on the anterior wall of the uterine isthmus, over a prior cesarean scar, there is a myometrial defect called an isthamocele defect of uterine scar or niche that resembles a pouch, [8-10]. Isthamocele leads to certain pathologic alterations that further lead to etiopathogenic symptoms like menorrhagia, abnormal uterine bleeding (AUB), cesarean scar pregnancy, inflammation, pelvic pain, dysmenorrhea, and secondary infertility more likely to occur, [11-16].

With the above literature, it is clearly understood that Isthmocele is a complex pathologic change that occurs due to previous cesarean sections, and the case presentation of this present study is a patient with double trouble complications with Isthamocele, and the anatomical challenge was steeply retroverted and retroflexed uterus. This present study describes the challenges encountered in the case presentation of women with double trouble (Isthmocele, and acute retroverted uterus) for the insertion of a Mirena coil and endometrial ablation.

Double-Trouble of the Case Presentation

A 40-year-old woman visited the general practitioner (GP) for significant abnormal uterine bleeding of idiopathic cause with 2 previous caesarean sections. The GP inserted a Mirena coil, but the Mirena coil was misplaced and located in the cervical canal, hence it was removed. On another day, the patient visited for the second time to the GP for Mirena coil insertion, again it was misplaced and it was removed. For the third time, the patient went to the GP for Mirena coil insertion as she had persistent symptoms, this time again Mirena coil was inserted, but again misplaced in the cervical canal. The coil was removed and the GP referred the patient to an outpatient Gynecologic hysteroscopic clinic.

She underwent outpatient hysteroscopy, clinical findings indicated a healthy vulva, vagina, and cervix. The endocervical canal was normal. The uterine cavity was acutely retroverted and retroflexed. A pipelle sample was attempted; however, it was extremely difficult to pass beyond the mid-point of the lower uterine segment, making adequate Mirena coil insertion risk of perforation of uterus. Hence, she was referred to the gynecology outpatient clinic to discuss other management options.

In the outpatient Gynecologic clinic, the patient was given all the options for management of abnormal uterine bleeding, the patient chose to have Novasure Endometrial ablation. The patient was scheduled for Hysteroscopy and Novasure Endometrial Ablation. Intraoperative findings again revealed an acutely retroverted uterus, preventing visualization of both Ostia. The uterine cavity measured less than 4 cm, which is a contraindication for Novasure ablation and the procedure was stopped. Subsequently, she was referred to the gynaecological outpatient clinic for further management discussions. After thorough discussions, the patient consented to another attempt for Mirena coil insertion under general anaesthesia, with a plan for a hysterectomy if this attempt failed.

Pre-operative blood tests and physical examination results were within normal ranges. During hysteroscopy, both the cervix and cervical canal appeared normal. Upon entering the internal os, brownish fluid was observed collecting predominantly on the anterior wall of the uterus. An outer hysteroscopic sheath was introduced to evacuate the collected blood, while increasing the pressure of the fluid, giving a better visibility of the uterine cavity. Once the collected blood was evacuated, a pouch was identified in the anterior wall of the uterus. Given her history of two previous caesarean section and menstrual blood accumulation in the pouch, a per-operative diagnosis of isthamocele was made. Due to acute retroflexion and retroversion of the uterus, complete visualization of the uterine cavity was initially obstructed. However, emptying the bladder and traction applied on the anterior lip of the cervix allowed for the straightening of the uterus and improved visualization through hysteroscopy. Finally, the uterine cavity was visualised and appeared normal with both ostia seen. utero-cervical length measured 10 cm. A pipelle endometrial biopsy was performed. The Mirena coil was successfully inserted into the uterine cavity and confirmed its placed in the uterine cavity by doing an intra operative ultrasound. The patient was discharged as a day care procedure without any complications.

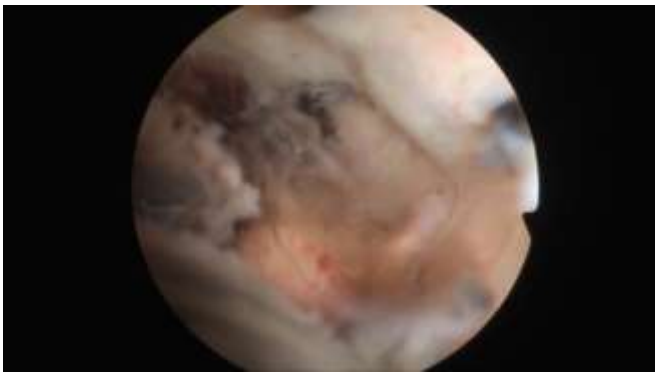

Figure 1 (a): Hysteroscopy Diagnosed Isthamocele with Collected Blood

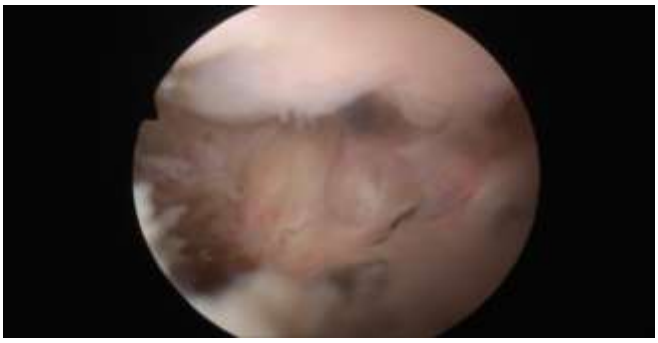

Figure 1 (b): Hysteroscopy diagnosed isthamocele, a defect in the Anterior Uterine Wall

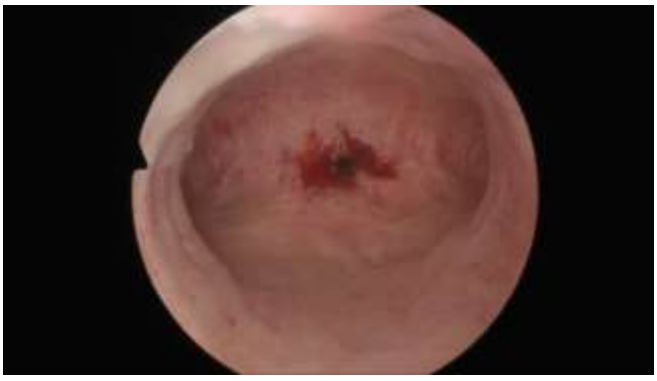

Figure 1 (c): Normal Visualisation of the Uterine Cavity

Figure 2: Post-Procedure Ultrasound to confirm Mirena coil location

Discussion

In our present study, we diagnosed and identified the reason for the displacement of the Mirena coil was a double-trouble of isthamocele, and acute retroverted uterus. Using hysteroscopy and performing a modified technique guided us for positive placement of the Mirena coil. our current study is compatible with the study published by Sipahi S et al who describe that an isthmocele, a scar defect from a cesarean section, has emerged as an emergency, and crucial diagnostics for women who experience abnormal uterine bleeding, pelvic pain, and subsequent infertility. Healthcare professionals must understand the efficacious surgical options available for treating symptomatic isthmocele. Laparoscopic or hysteroscopic are minimally invasive procedures that are a safe and efficient way to improve abnormal uterine bleeding and fertility with lesser discomfort, [17].

Using a modified approach and a hysteroscopic procedure, we were able to positively place the Mirena coil in place after diagnosing the isthmocele and retroverted uterus as the cause of the coil's displacement in the current case scenario. Florio P et al also report that since isthmocele occurs following cesarean sections, and hysteroscopic procedure can be a preferable option for treatment because it is less invasive, and provides a positive therapeutic outcome. Vitale SG et al explain that Surgical hysteroscopy is an effective method for managing intrauterine adhesions as an outpatient procedure, [18, 19].

This present study suggests that individual-based approaches will reduce the complications, and enhance the successful implantation of Mirena coil. Researcher De A presented a 38-year-old case presentation and suggested certain insights such as to reduce discomfort, further complications and difficulties, medical professionals must have experience inserting a Mirena coil and the author also provides insight to prevent device migration to the upper abdomen, omentum, and gut, Trendelenburg position is the best position, [20].

In our present study, we used an hysteroscopic outflow sheath and increased fluid pressure to create better visibility. Bartz DA et al suggest additional solutions for challenging uterine entrance including using a smaller IUD inserter (the LNG 19.5 mg and LNG 13.5 mg applicator diameter dimension is 3.8 mm compared with Mirena at 4.4 mm and Liletta at 4.8 mm), for better visibility using ultrasound, and rotating the applicator to 180 degrees is the best guidance, especially in the retroverted uterus, [21].

Conclusion

Obstetrics and Gynecology clinicians should realize that caesarean scar isthamocele is a potentially complex long-term complication of the C-section, furthermore, if the patient is diagnosed with an acute retroverted uterus, it further complicates the procedures of Mirena coil insertion and hysteroscopy.

Hence, modified innovative techniques, and creative thinking such as operating the patient in an anaesthetic condition as an in-patient instead of traditional

techniques (non-anesthetic condition) aided in the complete cooperation of the patient for the procedure. The use of an outer hysteroscopic sheath and increasing the fluid pressure helped to completely drain the collected blood leading to better visibility of the uterine cavity. Emptying the bladder and with traction on the anterior lip of the cervix, helped in correcting the anatomical abnormality of the uterus, that is steep retroverted and retroflexed uterus. In addition, hands-on training to identify the isthamocele through hysteroscopy and USG, and tailoring the individual-based choice of intervention, and treatment will also promote a good quality of life for the patients.

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