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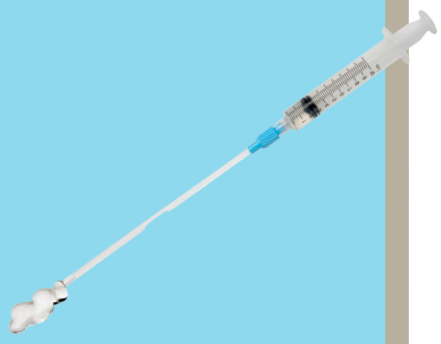

Oxiplex/IU®
Adhesion Barrier Gel for Intrauterine Surgery

CASE REPORT

Hysteroscopic Metroplasty

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Case Introduction

A 29 year old patient from São Paulo was referred to the Women's Hospital-SP with a history of primary conjugal infertility and a septate uterus. The diagnostic hysteroscopy examination showed two hemi endometrial cavities separated by an incomplete septum. The patient underwent surgical hysteroscopy for metroplasty guided by transabdominal ultrasonography, achieving a complete opening of the uterine cavity. This was followed by the application of intrauterine gel to prevent adhesions.

In the hysteroscopy performed 30 days after the procedure, no intrauterine adhesions were visualized, and the patient was referred for follow-up with an assisted reproduction team for in vitro fertilization treatment. This case report is a continuation of a series of 3 cases, in which metroplasties associated with gel application were performed, with the aim of evaluating the prevention of intrauterine adhesions following complex surgical hysteroscopies (1).

Case Presentation

While trying to manage uterine malformations, it is crucial to obtain an accurate diagnosis, as the treatment will depend on it. Among the Müllerian congenital anomalies, the septate uterus is the most common, representing approximately 55% of these diagnosed cases. Its prevalence is estimated at up to 1.5% among women of reproductive age.

The main diagnostic tools for uterine malformations include two-dimensional ultrasound, hysterosalpingography, hysteroscopy, laparoscopy, 3D ultrasound, and nuclear magnetic resonance. Hysteroscopy, in particular, is considered the gold standard for evaluating the uterine cavity and plays a crucial role in both the diagnosis and treatment of these uterine anomalies.

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Several formulations of anti-adhesive barrier gels have been used over the years in laparotomies and laparoscopic gynecological surgeries, later expanded for use in the uterine cavity, with the aim of preventing postoperative adhesions.

Oxiplex/IU® Adhesion Barrier Gel (FzioMed®, San Luis Obispo, CA, USA) is a dual polymer gel marketed in Brazil by LAS Brasil, composed of carboxymethylcellulose (CMC) and polyethylene oxide (PEO). Gels composed of CMC and PEO have been shown to decrease the formation of post-surgical adhesions in animal models, with CMC being the compound responsible for the mechanical barrier and adherence to tissue and PEO having its participation in the inhibition of protein deposition on tissue surfaces. Oxiplex/IU is proposed to serve as an absorbable mechanical barrier, temporarily keeping opposite uterine walls separate that have undergone surgical trauma, to reduce risk of adhesion formation. This work provides a case report that demonstrates the importance of ultrasound guidance in a challenging hysteroscopic surgery and the effectiveness of the dual polymer anti-adhesive gel composed of carboxymethylcellulose and polyethylene oxide (Oxiplex/IU) in preventing intrauterine adhesions.

The 29 year old nulliparous patient, with a clinical history of primary conjugal infertility for 7 years, was followed by the assisted reproduction team at the Woman's Hospital SP. She was referred for evaluation due to a pelvic resonance image suggesting an incomplete septum, measuring 2.5cm and a distance between the ostia of 5.8cm (Photo 1). In addition, the exam showed findings compatible with endometrioma in the right ovary measuring 5.8x4.2cm and bilateral hydrosalpinx.

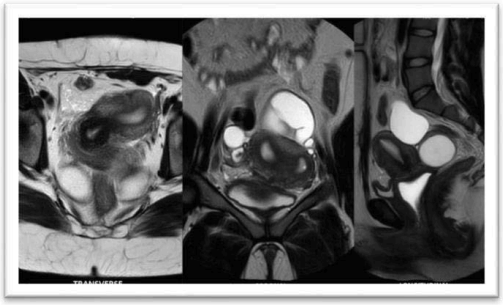

Photo 1

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Operative Approach

The patient underwent video laparoscopy on 07/31/2023, with bilateral salpingectomy and lysis of pelvic adhesions and was referred for evaluation of the uterine cavity with diagnostic hysteroscopy. The patient underwent diagnostic hysteroscopy on 08/14/2023 by vaginoscopy in a day hospital, without anesthesia and with the Bettocchi system, using a 2.9mm 30° optic and 0.9% physiological saline as a distension medium. The exam showed a single lower uterine cervix and two symmetrical hemi-cavities, separated by an incomplete septum, with extension from the uterine fundus to the middle third of the cavity (Photo 2).

Photo 2

Subsequently, the patient underwent surgical hysteroscopy on 08/25/2023, using a monopolar resectoscope, 4mm 30° optic, Collins electrode, Glycine as a distension medium, under spinal anesthesia. The appearance of the uterine cavity according to the previous diagnostic hysteroscopy was confirmed.

Photo 3

Metroplasty was performed, guided by transabdominal ultrasound, obtaining a complete opening of the uterine cavity (Photo 3). After reestablishing the anatomy of the uterine cavity, 10 mL of absorbable intrauterine anti-adhesive gel was applied.

Photo 4

In the postoperative follow-up, she underwent diagnostic hysteroscopy on 09/29/2023 which visualized a normal appearing singe uterine fundus, with small fibrin deposition and no intrauterine adhesions (Photo 5).

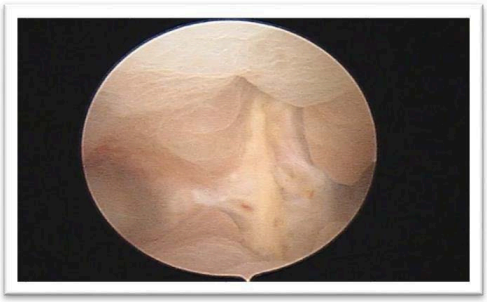

Photo 5

Follow-up

The follow-up hysteroscopy by a new pelvic magnetic resonance imaging performed on 10/30/2023 showed a uterus with a usual shape, slightly wavy contour and slight arching in the contour of the endometrial cavity of the fundic region, without septa (Photo 6). After the hysteroscopic treatment of the intrauterine septum, the patient was released to follow up to the assisted reproduction team for in vitro fertilization. Again, no adhesions were visualized.

Photo 6

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Conclusion

Congenital uterine malformations are often incidentally diagnosed during investigations related to subfertility, recurrent miscarriages, or menstrual disorders. They have been implicated as potential causes of infertility, recurrent miscarriages, premature delivery, abnormal fetal presentation, and fetal growth restriction[1].

The definition of a septate uterus has been a central issue due to the lack of a universally accepted criterion. In 2013, the European Society of Human Reproduction and Embryology (ESHRE) and the European Society for Gynaecological Endoscopy (ESGE) established the CONUTA (CONgenital UTerine Anomalies) group with the aim of creating a new, precise, and straightforward classification system for these anomalies. In this system, uterine anomalies are divided into classes and subclasses, while cervical and vaginal anomalies are independently classified into coexisting subclasses[1].

Hysteroscopy is a technique that allows direct visualization of the uterine cavity and tubal ostia, demonstrating high accuracy in both detecting and diagnosing uterine malformations. However, for a comprehensive evaluation of uterine anomalies, evaluating the uterine contour is crucial to successful reproduction and supplementation and diagnostic laparoscopy is commonly performed.
The combination of hysteroscopy and laparoscopy has been considered the gold standard for the definitive diagnosis of congenital uterine anomalies. Nevertheless, this approach is gradually being surpassed by less invasive methods, such as magnetic resonance imaging (MRI)[2].

A pelvic MRI is capable of identifying a uterine septum non-invasively, providing an accurate representation of both the internal contour of the uterine cavity and the external contour of the uterus. Studies have demonstrated that MRI shows comparable diagnostic performance to 3D ultrasound in identifying a uterine septum. Therefore, considering the advantages of MRI, it is increasingly being used for evaluating uterine anomalies[2].

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