

A successful hysteroscopic treatment of recurrent intrauterine adhesions using a balloon stent

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ABSTRACT

A 43-year-old woman was referred to our Department for secondary amenorrhea. Her clinical history showed a spontaneous abortion followed by dilatation and curettage and a previous hysteroscopic adhesiolysis for Asherman's syndrome. A diagnostic hysteroscopy was performed and revealed an hematometra and a uterine cavity obliteration with multiple adhesions. An ultrasound-guided hysteroscopic adhesiolysis was performed and a balloon stent was inserted in the uterine cavity to prevent the reformation of adhesions. The intrauterine catheter was kept in place for five days with antibiotic coverage. The menstrual period presented regularly. A diagnostic hysteroscopy was performed one and two months after the procedure. Both exams revealed a regular uterine cavity without reformation of adhesions.

Keywords: Asherman's syndrome; Hysteroscopic treatment of adhesions; Intrauterine balloon stent; Hysteroscopy; Recurrent intrauterine adhesions

INTRODUCTION

The diagnosis of intrauterine adhesions also known as Asherman's syndrome has been increasing over the last few decades⁽¹⁾. Most cases are associated with surgical trauma to the basalis layer of the endometrium. They frequently occur following dilatation and curettage of the pregnant uterus after spontaneous abortion, although any uterine insult or surgery may lead to adhesions development. Lesions are characterized by fibrous connective tissue bridges that can vary from filmy to dense and may cause partial or complete obliteration of the uterine cavity. Intrauterine adhesion can affect menstrual function and fertility: most women with Asherman's syndrome have alterations in duration and amount of the menstrual flow such as amenorrhea or hypomenorrhea. Those who have amenorrhea may also have severe pelvic pain and retrograde

SOMMARIO

Una paziente di 43 anni è afferrita presso il nostro Dipartimento per amenorrea secondaria. La sua storia clinica mostrava un aborto spontaneo seguito da revisione della cavità uterina ed una precedente adesioliisi isteroscopica per sindrome di Asherman. È stata eseguita un'isteroscopia diagnostica che ha rivelato una ematometra ed una cavità uterina oblitterata da numerose aderenze. È stata quindi sottoposta ad un'adesioliisi isteroscopica sotto guida ecografica con inserimento di uno stent per la prevenzione delle recidive. Il catetere intrauterino è stato mantenuto in situ per cinque giorni con copertura antibiotica. I cicli mestruali successivi si sono presentati regolarmente. Un'isteroscopia diagnostica di controllo è stata eseguita sia il primo che il secondo mese post-operatori. Entrambi gli esami hanno rivelato una cavità uterina regolare e priva di aderenze.

menstruation caused by outflow obstruction. In addition to abnormal menses, patients may present infertility and pregnancy disorders such as recurrent spontaneous abortion, placenta accreta and intrauterine growth restriction⁽²⁾. Nowadays hysteroscopy is the standard method to diagnose, treat and follow up this condition⁽³⁾. Various techniques for adhesiolysis and for prevention of adhesion reformation have been studied. We described a case of successful treatment of recurrent intrauterine adhesions using a balloon stent.

CASE PRESENTATION

A 43-year-old woman was referred to our Department for secondary amenorrhea. She reported a spontaneous abortion followed by dilatation and curettage (D&C). Her history started after D&C: she presented secondary amenorrhea and, after diagnostic hysteroscopy which diagnosed an Asherman's syndrome,

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she performed an hysteroscopic adhesiolysis. Two months after adhesiolysis she came to our Department since she noted again a reduction of menstrual flow followed by amenorrhea. Her vaginal examination and transvaginal ultrasound revealed no abnormalities. Hysteroscopy was then performed in outpatient bases using CO₂ as the distension medium and a 4 mm sheathed diagnostic hysteroscope. The exam revealed an hematometra and a uterine cavity obliteration with multiple fibrous adhesions. Asherman's syndrome was classified according to the Modified Classification of European Society of Hysteroscopy (ESH) as moderate (ESGE grade III). An ultrasound-guided hysteroscopic adhesiolysis was performed under general anaesthesia. A 9 mm resectoscope with 0° optical system (Karl Storz, Germany) equipped with a hysteroscopic monopolar (Collin's) knife was introduced into the uterine cavity. Glycine 1.5% was used as distending media instilled from a flexible 5000-mL bag wrapped in a pressure cuff connected to a manometer and pumped up to 10 - 50 mmHg. All the synechiae were removed and a silicon Foley catheter (Rusch, No. 22) inflated with 4 cc of saline solution was inserted into the uterine cavity to prevent the reformation of adhesions. No complication occurred during the procedure. The day after the procedure transvaginal ultrasound was performed to control the correct positioning of the balloon (Figure 1).

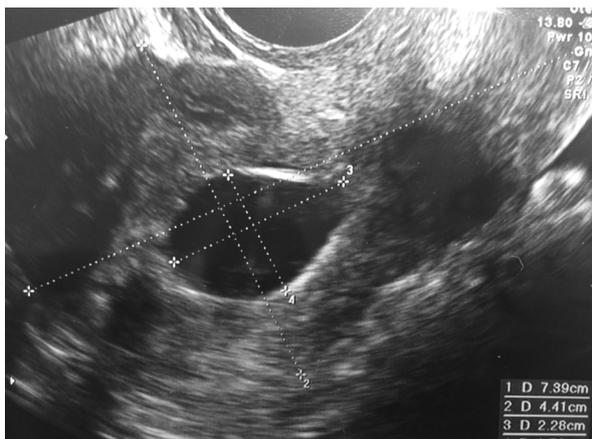


Figure 1: Intrauterine balloon stent.

The intrauterine catheter was kept in place for five days using ciprofloxacin for antibiotic prophylaxis. The patient was discharged on the third postoperative day and came back on the fifth postoperative day to remove the balloon

with no discomfort for the patient. The menstrual period presented regularly after fifteen days and she didn't complain any pelvic pain. A diagnostic hysteroscopy was performed one month after the procedure during the proliferative phase. The exam revealed a regular uterine cavity. A second diagnostic hysteroscopy was then performed to evaluate the uterine cavity two months after the procedure. Also at the second hysteroscopy, there was no reformation of adhesions (Figure 2) and the patient didn't complain any symptom.



Figure 2: Postoperative diagnostic hysteroscopy showing a regular uterine cavity.

DISCUSSION

The exact prevalence of Asherman's syndrome is difficult to determine, but the incidence has been increasing over the last few decades, probably influenced by the number of abortion performed, the increase in intrauterine surgery as well as better diagnostic techniques like transvaginal ultrasound, sonohysterography and hysteroscopy⁽⁴⁾. Hysteroscopy allows direct inspection of the uterine cavity for diagnosis, classification and treatment: accurately confirms the presence, extent and degree of adhesions, and assess the quality of the endometrium⁽⁵⁾. Many classifications have been proposed, mainly based on hysteroscopic findings as the principal parameter for assessment of the condition and prediction of the results. Most published

classifications on intrauterine adhesions, except for the American Fertility Society one, have not stressed the correlation between the menstrual function and the severity of the condition. This is an important prognostic point because menstrual pattern may reflect the amount of endometrium available for regeneration after adhesiolysis⁽⁶⁾. We had chosen to classify according to ESGE classification (1995 modified version) of intrauterine adhesions, as it clearly reflects the severity of adhesions⁽⁷⁾.

Treatment of moderate Asherman's syndrome is still a challenge⁽⁴⁾. Nowadays hysteroscopy is considered the standard method for treating intrauterine adhesions. Lysis under direct vision is safer and more complete than blind curettage and may minimize the destruction of the normal endometrium. Continuous maintenance of distension is a key to success. Filmy and central adhesions should be cut first, in order to allow adequate distension of the uterine cavity, while marginal and dense adhesions should be attacked last, keeping in mind the greater risk of uterine perforation and bleeding. Guidance during difficult hysteroscopic surgeries is necessary to avoid uterine perforation, therefore we decided to perform a transabdominal ultrasound-guided adhesiolysis because of the lower uterine perforation rate and the lower cost⁽⁸⁾.

The main challenge of hysteroscopic adhesiolysis is the high rate of reformation of adhesions, especially in severe-type Asherman's syndrome, in which the recurrence rate may be up to 62.5%⁽⁹⁾. A number of strategies have been proposed to reduce the recurrence of adhesions after surgery.

The first approach was the use of IUD after hysteroscopic adhesiolysis. Many studies reported different outcome but no comparative studies have confirmed the type or size of IUD or duration of placement. Moreover several investigators reported an increase of intrauterine adhesion reformation associated with local inflammation⁽¹⁰⁾. Many authors have also examined the use of hyaluronic acid gel into the uterine cavity after adhesiolysis^(11,12). There are some preliminary evidence that hyaluronic acid gel may be of benefit in reducing intra-uterine adhesions, although as of now there is no firm evidence to

confirm its value. Myers et al.⁽¹³⁾ first introduced the Foley balloon catheter after surgery to prevent adhesion reformation, and achieved satisfactory results. Amer et al.⁽¹⁴⁾ assessed the efficacy of a Foley catheter balloon which was inserted after the hysteroscopic adhesiolysis procedure and removed one week later.

Kodaman and Arici proposed that adhesions, if they were to recur, would be formed by the 5th postoperative day, after the time called "lag period" of wound healing⁽¹⁵⁾. Consequently, they supposed that the balloon should stay within the uterine cavity for at least a week prior to its removal. Nevertheless in our case we achieved a satisfactory result after only five days of permanence of the catheter.

To the best of our knowledge, no other authors reported data on the efficacy of the balloon stent on recurrent Asherman's syndrome.

Office hysteroscopy is useful for follow-up after treatment of intrauterine adhesions. Several studies showed that an early second-look office hysteroscopy may diagnose and eventually lyse new filmy adhesions before they become dense and significantly reduce their reformation⁽¹⁶⁾.

Many authors studied the reproductive outcome in patients who underwent hysteroscopic adhesiolysis. Particularly, Yu et al reported that the chances of conception in women who remained in amenorrhea were significantly lower than those who continued to have menses and that at second look hysteroscopy, the conception rate in women who had reformation of intrauterine adhesions was significantly lower⁽¹⁷⁾. Therefore the outcome of hysteroscopic adhesiolysis for Asherman's syndrome is significantly affected by recurrence of intrauterine adhesions. In consideration of these results, appropriate counseling should be given to the patients with severe or recurrent intrauterine adhesions who desire pregnancy.

In conclusion, currently several methods have been evaluated for the prevention of adhesions but none has proven its effectiveness for moderate and severe Asherman's syndrome particularly in case of recidives. Further research in Asherman's syndrome should be directed toward reduction of the incidence of adhesion reformation after intra-uterine surgery in order to improve the outcome particularly in patients who desire pregnancy.

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