

Endoscopic treatment of intrauterine adhesions

S. Pace, P. Stentella, R. Catania, P. L. Palazzetti, A. Frega

2nd Clinic of Obstetrics and Gynaecology, University "La Sapienza", Rome (Italy)

Summary

Purpose of investigation: The authors investigated the validity of hysteroscopy as a diagnostic and operative technique in cases of intrauterine adhesions.

Methods: 6,680 hysteroscopies were carried out between June 1987 and December 2000 with 201 patients presenting intrauterine adhesions. Only 75 patients underwent resection of the adhesions by hysteroscopy with 94.6% of functional restoration and 93.3% of anatomic resolution.

Results: At 2-month follow-up the uterine cavity was completely regular in 70 cases, while in four cases a second surgical treatment was necessary.

Conclusion: Good anatomic results are obtained after hysteroscopic treatment of intrauterine adhesions, and pregnancy rates vary from 28.7 to 53.6%.

Key words: Hysteroscopy; Intrauterine adhesions.

Introduction

The first case of intrauterine adhesions following postpartum curettage was described in 1894 by Fritsch [1] in a 24-years-old patient who presented with secondary amenorrhea. In 1948 Asherman [2] finally reported on and defined "amenorrhea traumatica" as an amenorrhea due to intrauterine adhesions following a traumatic curettage, and a couple of years later also included in this pathologic entity the partial occlusion of the uterine cavity secondary to adhesions. Symptomatology varies according to the degree of uterine cavity occlusion and severity of the adhesions [2-5]. Many cases are asymptomatic and are diagnosed occasionally during hystero-graphy or hysteroscopy, and are generally represented by mild intrauterine adhesions. According to the extent and site and the degree of fibrosis of these adhesions we can find three types of symptoms:

- menstrual disorders (such as hypomenorrhea, amenorrhea);
- infertility;
- obstetrical pathologies.

Usually amenorrhea appears in patients with isthmic adhesions with consequent hematometra, while hypomenorrhea is secondary to a reduced endometrial surface such as in a marginal type. Infertility secondary to intrauterine adhesions is easy to explain in cases of complete stenosis of the isthmus or of the uterine cavity.

In cases of partial adhesions the factor responsible for sterility is an inadequate implantation in the endometrium. In these cases vascular alterations play an important role in the development of endometrium and in the consequent implantation.

Materials and Methods

From June 1987 through December 2000, 201 cases of intrauterine adhesions were found out of 6,680 office hysteroscopies performed at the Service of Hysteroscopy, Department of Obstetrics and Gynecology "La Sapienza" University of Rome.

Patient age ranged from 24 to 40 years. The main complaints were hypomenorrhea, amenorrhea, repeated and habitual abortion and secondary sterility. In a few cases intrauterine adhesions were diagnosed during hysteroscopy performed for other indications.

Diagnostic hysteroscopy was performed as an outpatient service with a Hamou microhysteroscope (4 mm diameter, 25 cm length). Dilatation of the uterine cavity was obtained by insufflating CO₂ at a mean pressure of 40 mmHg.

We selected 75 patients with a previous history of abortion, aged between 20 and 40 years. They all underwent endoscopic treatment by different means according to the degree of severity.

In 30 cases with minimal adhesions as well as in four cases with a moderate type, an atraumatic lysis with the point of the hysteroscope was enough, with no need for anesthesia or hospitalization.

In 18 patients the treatment was performed as an outpatient service without anesthesia, using a 5 mm K. Storz hysteroscope with semirigid scissors and with saline solution as the distending medium.

In the remaining 23 cases hospitalization was requested because of the need of general anesthesia. Ten of these patients were treated with an office-hysteroscope without dilatation of the cervix, using sorbitol-mannitol as the distending medium. In the other 13 patients the treatment was performed with a 9,5 mm hysteroscopic resectoscope (K. Storz), using a hysteroscopic monopolar knife after prudent dilatation of the cervix up to 10 mm by Hegar's dilator.

Results

We selected 75 patients who had a history of abortions. Anatomic resolution was achieved in 71 cases while in

four cases we had to perform a second resolutive surgical treatment after two months because of residual adhesions. They all had a previous curettage and presented with different degrees of severity:

- 30 were treated as outpatients because they presented minimal adhesions and did not need anesthesia.

- 33 presented with a moderate lesion, out of which ten needed hospitalization because of more extensive lesions.

- finally 12 presented with severe forms and were all treated under general anesthesia.

The only complication during this type of surgery was a case of perforation immediately repaired by laparoscopy.

The outcome was brilliant with a normal restoration of the endometrium and end of pelvic pain.

At follow-up 28 patients decided to plan a pregnancy and in 15 (53.6%) cases this goal was achieved, with nine deliveries (32.1%).

Six had a spontaneous delivery, while of the three cesarean sections, one was performed at 35 weeks of gestation because of placenta praevia.

Discussion

The incidence of intrauterine adhesions is hard to define and its diagnosis is often by chance during a HSG or hysteroscopy performed for menstrual anomalies and with no direct relation to Asherman's Syndrome.

All factors contributing to alterations of the endometrium can cause the development of intrauterine adhesions, but predisposing and determinant factors have to be defined [11, 12]. Among the predisposing factors we find the pregnant uterus which is surely more exposed because its mucosa is thin, the uterine muscle is soft and traumatism due to curettage can alter the uterine cavity and in particular the basal layer.

Schenker *et al.* suggested that the mechanism of development of intrauterine adhesions is trophoblastic or placental retention [13, 14]. In fact, in vivo studies have confirmed that the presence of villi increases fibroblastic activity and collagen concentrations.

A determining factor is a traumatic event such as postpartum or post-abortion curettage and surgical events such as cesarean section, laparotomic or hysteroscopic myomectomies.

Obstetrical pathology such as placenta praevia, accretion, premature delivery and habitual abortion should always make us suspect the presence of intrauterine adhesions.

Hysterosalpingography is the most accurate screening method showing filling defects at different sites and persisting on sequential films [6-8]. Hysteroscopy provides a topographic evaluation of the lesion with a complete severity scoring. The exact evaluation of the surrounding endometrium and the eventual presence of associated pathology permits a correct presurgical study of the cavity [9, 10].

We can find three types of adhesions:

- 1) mucous, thin or filmy, adhesions similar to the surrounding endometrium;

- 2) fibromuscular, covered by atrophic endometrium with several glandular openings;

- 3) fibroconnectival not covered by endometrium with connective tissue.

According to our experience, we can assert that hysteroscopy plays a main diagnostic and therapeutic role which provides significant advantages:

- Accurate diagnosis with topographic evaluation both of the lesion and the surrounding endometrium.

- Dissection of the adhesions under direct vision and often on an outpatient basis.

- Restoration of normal menstrual periods and subsequent conception.

Macroscopically intrauterine adhesions are secondary to coaptation of endometrial epithelium, myometrium or collagenous tissue, explaining the different aspects found during hysteroscopy. Adhesions involving only endometrium are macroscopically similar to the surrounding endometrium. The myometrial and connective type are the most frequent and are characterized by the presence of a thin layer of endometrial tissue with many glandular openings. Finally the fibroconnectival adhesions lack an endometrial lining with connective tissue. According to their extent we can classify corporal adhesions with partial occlusion of the ostia and fundus, cervical-isthmic adhesions with a more or less complete stenosis of the cervical canal and finally complex adhesions involving more than two-thirds of the uterine cavity, isthmus and cervical canal with occlusion of the ostia and fundus and coaptation of the uterine walls.

Recently hysteroscopy has renewed the interest in this pathology by increasing the number of cases detected and reducing the number of false positives provided by hystero-radiography.

However, even when a satisfying anatomical result is obtained normal endometrial function and subsequent pregnancy to term are not guaranteed. In any case normal size and shape of the uterine cavity is the gold standard goal of hysteroscopic treatment.

Different techniques have been performed using semi-rigid scissors with a 5 mm hysteroscope and fluid distension in an office setting performing hysteroscopic resection with a monopolar probe and in other cases laser treatment.

A good anatomical result is usually obtained: 70.6 to 97% after one or several endoscopic sessions; results for menstrual disorders are also good: 75 to 100% in different series [17].

The pregnancy rate varies from 28.7 to 57.4% and in our series the pregnancy rate was 53.6% and live births 32.1% [9-20].

In conclusion operative hysteroscopy is certainly the best method to diagnose and treat all intrauterine adhesions.

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Address reprint requests to:
S. PACE, M.D.
II Clinic of Obstetrics and Gynaecology
University "La Sapienza"
Viale Regina Elena, 324
00161 Rome (Italy)

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