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Asherman's Syndrome: A recurring problem

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Abstract:

Asherman's syndrome is a global disease with a significant impact on the reproductive career among women. Its exact prevalence is quite difficult to ascertain as there are different methods to diagnose and several classifications being used. Its increasing incidence has been credited to a great number of uterine surgeries and improved accuracy of imaging studies. The clinical manifestations of this condition range from secondary amenorrhea, hypomenorrhea, dysmenorrhea, infertility, and recurrent pregnancy loss. Hysteroscopy played an important role in its diagnosis and management.

Keywords:

Asherman's syndrome, intrauterine adhesions, synechiolysis

Introduction

Asherman's Syndrome is an acquired clinical condition which resulted from partial or complete uterine obliteration by intrauterine adhesions (IUAs). It occurs when there is trauma to the basalis layer of the endometrium typically after curettage, myomectomy, or intrauterine infection. The symptoms include one or more of the following: menstrual irregularity characterized by hypomenorrhea or amenorrhea, infertility, pregnancy loss, and obstetric complications such as abnormal placental attachment and preterm labor.[1]

Hysteroscopy remains to be the gold standard for diagnosing the extent of the disease at the same time allowing the clinician to treat the patient simultaneously.

Case Report

A 27-year-old G2P0 (0020) complained of a 4-year history of intermittent vaginal bleeding associated with hypogastric pain and consulted at the outpatient department. She had two spontaneous abortions and underwent completion curettage, two hysteroscopic polypectomies, and endometrial biopsy due to abnormal uterine bleeding. Histopathology results showed endometrial polyp.

There was recurrence of vaginal bleeding a month before admission. Saline infusion sonography was done which showed interruption of the endometrium–myometrial junction at the right anterolateral portion of the corpus on instillation of saline solution. There were two hyperechogenic bands of varying thickness (0.5 cm thickest) seen bridging the anterior and posterior endometrium at the left mid-corpus [Figure 1].

She was scheduled for hysteroscopic synechiolysis. Intraoperatively, there were fibrous bands with small irregular endometrial bridges and pockets seen. Marginal synechiae appeared as falciform bands, whereas centrally located synechiae appeared as columnar-shaped bands [Figure 2]. On synechiolysis, transverse fibrous adhesions were lysed inadvertently on advancement of the scope and the remaining adhesions posteriorly were resected using bipolar angled loop electrode, whereas marginal synechiae were addressed

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using Collin's loop [Figure 3]. Continuous resection was done until C-shaped areas were visible on the lateral walls, tubal ostia were seen, and the presence of blood can be appreciated [Figure 4]. Postoperatively, she was given estradiol valerate 2 mg per tabled three times a day for 21 days followed by medroxyprogesterone acetate 10 mg per tablet once a day for 10 days per cycle for 6 cycles.

Second-look hysteroscopy was performed during follow-up showing recurrence of adhesions [Figure 5]. The planned procedure for the patient was to perform hysteroscopic synechiolysis with the application of antiadhesion gel.

Discussion

Asherman's Syndrome is characterized by the occurrence of adhesions due to trauma or removal of the basalis layer of the endometrium in the opposing areas within the endometrial cavity. It can induce vascular ischemia and inflammatory changes promoting fibrosis and decreased endometrial receptivity.[2] This condition can eventually lead to potential complications such as amenorrhea, decreased fertility, increased risk of pregnancy loss, and abnormal placental implantation.[3]

The prevalence is quite difficult to define as the diagnostic methods have changed over the years and different classifications are being used. According to Smikle *et al*., 0.3%–21.5% of women developed IUA after curettage while 31% among patients who underwent hysteroscopic myomectomy.[3] The use of uterine compression sutures to treat severe postpartum hemorrhage has also been associated with the development of adhesions in 19%–27% of women.[3] Sharma *et al*. pointed out that infection such as genital tuberculosis is another cause of Asherman's syndrome leading to oligomenorrhea or amenorrhea.[4]

Hysteroscopy is the gold standard in studies comparing different diagnostic modalities, and several classification systems are based on hysteroscopic findings.[5] Two-dimensional (2D) transvaginal ultrasound (TVUS) can provide clear images and is used routinely as a first-line diagnostic tool. Adhesions typically appear as "bridging bands" of tissue distorting the cavity. Filmy adhesions are described as thin, undulating membranes that are most easily seen on real-time scanning. The integrity of the endometrial–myometrial junction can also be assessed.[6] However, the sensitivity and specificity of 2D-transvaginal ultrasound for intrauterine adhesions (IUA) are not high enough for clinical use (52% and 11%, respectively).[6]

Saline infusion sonohysterography is used to evaluate the uterus and endometrial cavity, allowing a detailed visualization of the uterine cavity in both longitudinal

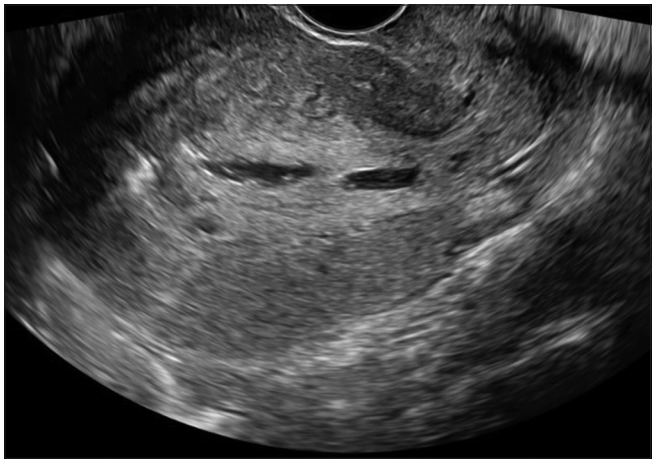

Figure 1: Saline infusion sonography showing the two hyperechogenic bands

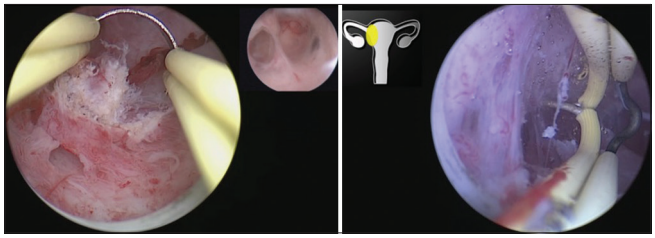

Figure 3: Synechiolysis using bipolar angled loop electrode and Collin's knife

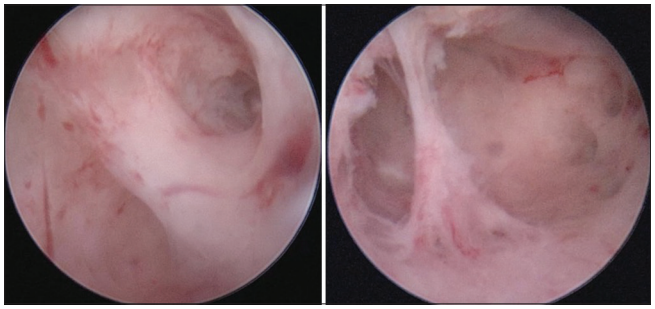

Figure 2: Intrauterine adhesions. Fibrous bands, marginal and central synechiae

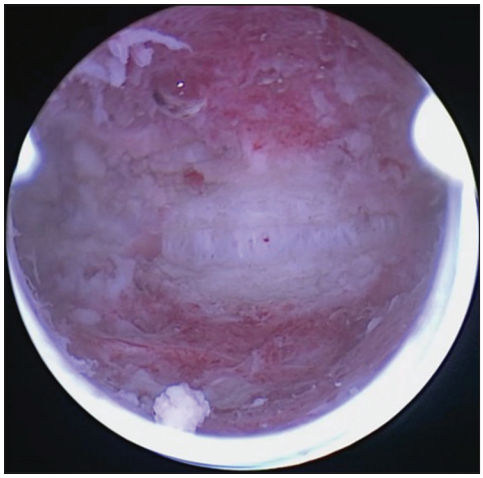

Figure 4: Postsynechiolysis

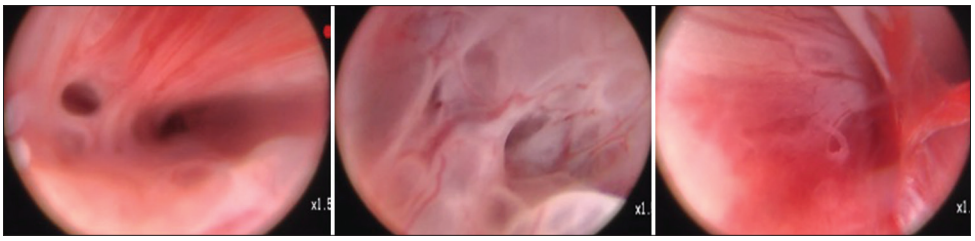

Figure 5: Second Look Hysteroscopy (Office Hysteroscopy): Fibrous bands on the isthmic and midcorpus areas of the endometrial cavity

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and transverse planes. The endometrium can be evaluated for the presence of polyps, submucous fibroids, intrauterine synechiae, and foreign bodies.[7] In our index patient, the result showed IUAs compatible with synechiae.

Hysterosalpingography, on the other hand, is a commonly used first-line investigation of uterine abnormalities and infertility. The presence of adhesions is characterized as filling defects that do not change with positioning.[8]

The use of 3D ultrasound has further enhanced the role of ultrasound in the diagnosis of uterine anomalies as it enables imaging in close proximity to the uterus improving image resolution. Performing a preoperative evaluation using this tool will provide a detailed map of the intrauterine cavity delineating the location of the obliterated areas as well as areas with functional endometrium facilitating the procedure.[9]

Diagnostic hysteroscopy is considered the gold standard for the diagnosis of IUAs allowing to determine not only the presence of IUAs but also the extent and type of adhesions; it also has an additional benefit of immediate treatment. However, in the presence of severe cavity obliteration, the risk of complications is high and the access of the upper uterine cavity becomes impossible. Thus, in cases of severe adhesions, the use of imaging modalities is the main alternative to facilitate the diagnosis.[10]

Several classification systems have been proposed for Asherman's syndrome although none of them is currently endorsed universally. The severity of the disease has been classified by the American Fertility Society into three stages:[11]

- Mild disease: Few filmy adhesions involving less than a third of the uterine cavity with normal menses or hypomenorrhea
- Moderate disease: Filmy and dense adhesions, the involvement of one-third to two-thirds of the cavity, and hypomenorrhea
- Severe disease: Dense adhesions involving more than two-thirds of the cavity with amenorrhea.

According to Fouks *et al.*, the prognosis for patients with moderate-to-severe disease after surgery has lower chances of conceiving and delivery, but this can be improved after surgery once the cavity has been reconstructed and menses recur.[12] For patients who had undergone *in vitro* fertilization post-adhesiolysis, those with moderate and severe adhesions were shown to have a detrimental effect on reproductive performance, and endometrial thickness was shown to be an important predictor for live births.

The management of Asherman's Syndrome can be addressed by several treatment modalities such as expectant, medical and surgical. Surgery is emerging as the mainstay of treatment. The goal is to achieve restoration of the uterine cavity until both ostia are visualized in the same plane. The recurrence rate after hysteroscopic synechiolysis is as follows: mild cases at 0%, moderate cases at 26%, and 48% among severe cases.[13]

In terms of surgical management, usage of bipolar electrosurgery showed that the occurrence of IUA was 7.5% in comparison to the unipolar energy system at 35%.[14] However, currently, the use of "cold loop" system was associated with relatively low risk of IUA formation at 4.2%.[14]

The reformation of adhesions can be addressed using intrauterine device, Foley catheter, hyaluronic gel, and estrogen treatment.[12] The use of gels has reduced the severity of postoperative IUAs after hysteroscopy, and it is suitable for application in a limited and irregular space, such as the endometrial cavity. The derivatives of hyaluronic acid with other main components, such as sodium D-glucuronate and N-acetyl-glucosamine, which is a linear polysaccharide with 25,000 repeating disaccharide units, composed major supportive and protective components in a vitreous body, saliva, synovial fluid, cartilage, skin, and umbilical cord.[14] In a systematic review and meta-analysis by Zhao *et al.*, they stated that marrow mononuclear stem cell-based therapy along with hormone replacement therapy can be an option in treating these patients. The benefits observed were improvement in menstrual volume, increased endometrial thickness, restored regular menstrual cycle, and enhanced pregnancy outcome.[15] Furthermore, the use of platelet-rich plasma infusion after hysteroscopic adhesiolysis has been shown to be effective in decreasing

the grade of IUAs as well as improving the duration and amount of menstrual menses, but more studies are needed.

In our patient, oral estrogen was given postoperatively for adhesion prevention. However, recurrence of adhesions was observed on second-look hysteroscopy. Thus, a repeat synechiolysis will be done along with the application of hyaluronic gel.

Conclusion

Asherman's Syndrome is uncommon, acquired, and considered as refractory gynecological disorder. Hysteroscopic synechiolysis is the gold standard in treating this condition as lysis of adhesions can be done under direct visualization and magnification. However, the recurrence of adhesion postsurgery is another hurdle that every gynecologist should face as it affects menstrual resumption and reproductive outcomes among patients.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Authorship contributions

Dr. Sigrid Aguirre-Barinaga was involved in conceptualization, making the original draft, and editing.

Dr. Marie Janice Alcantara-Boquiren was involved in the reviewing end editing of the manuscript.

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Conflicts of interest

There are no conflicts of interest.

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