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COMMENTARY

Commentary on “Assessment of Risk Factors of Intrauterine Adhesions in Patients with Induced Abortion and the Curative Effect of Hysteroscopic Surgery”

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The term Intrauterine Adhesions (IUA), refers to the presence of synechiae that can lead to a partial or total obliteration of the uterine cavity and to a modification of the normal uterine shape.1 IUA strongly influence the health of women causing decrease in fertility, recurrent pregnancy loss, dysmenorrhea, amenorrhea, hypomenorrhea, and abnormal placenta morphology such as placenta previa and accreta.2

As reported by many authors, estimating the true incidence and prevalence is challenging primarily due to the asymptomatic development of patients with IUA.3,4 An increasing frequency of intrauterine synechiae is recently reported in literature, but it could be connected to the rising number of surgical uterine operations that are the main cause of IUA and to the growing number of hysteroscopic procedures performed with a diagnostic purpose.4 The most common etiology of IUA5 seems to be the endometrial damage caused by previous intrauterine operations, such as induced abortion, myomectomy, curettage6 and less invasive surgical operations.7 However, recent data suggest the possibility that minimally invasive procedures, such as hysteroscopic tissue removal system, may not increase the rate of postoperative adhesions compared to other surgical procedures.8 Moreover, a direct relation between the number of intrauterine surgical procedures and the severity and recurrence of intrauterine adhesions is noted in literature.9 The mechanism of synechiae formation consists of a trauma creating adhesions of the scar tissue responsible for the severe alteration of the uterine shape and a loss of the natural uterine cavity. The histopathological characteristics of the synechia changes as time passes: the oldest ones are made of fibrous tissue.10

However, other elements are related to the pathogenesis of intrauterine synechiae as like pregnancy, missed abortion,11 curettage and infections.2 A recent study of Tao Z. et al. suggests that adhesion related cytokines (such as b-fibroblast growth factor, platelet derived growth factor, and transforming growth factor type 1), can be involved in intrauterine adhesion pathogenesis.12

Mo et al. in their article focused on the assessment of risk factors of the intrauterine adhesions in patients with induced abortion and the curative effect of hysteroscopic surgery.13 The data were retrospectively analyzed to investigate the presence of several risk factors responsible for intrauterine adhesions in 1,500 women who underwent induced abortions, including cases of threatened, missed, inevitable, and incomplete abortions. A standard questionnaire was filled in by patients reporting age, gestational age, menarche age, gravidity, preoperative inflammations state based on symptoms, intrauterine negative sucking pressure, and duration of the induced abortion procedure. In addition, hysteroscopy was performed to determinate the presence or not of IUA and their degree using the adhesions classification of European Society of Hysteroscopy and European Society for Gynaecological Endoscopy. The study determined that women with...
intrauterine adhesions have a history of more gravidity, higher negative sucking pressure, and longer duration of the induced abortion procedure considering them as independent risk factors of IUA. Moreover, it suggested the possibility of using hysteroscopy as a surgical procedure to treat adhesions.\textsuperscript{13}

Despite the known fact that intrauterine adhesions are mainly caused by previous intrauterine operations, other aspects have been suggested as responsible for their pathogenesis. In this view, considering the study of Wallach G. et al. that underlined missed miscarriages as a predisposition factor for intrauterine adhesions, finding a moderate percentage of them in women treated with curettage after a silent abortion,\textsuperscript{11} we totally agree with the choice of the author et al. to include in this study women with missed abortion. In fact, this condition can lead to synchiae and endometrial fibrosis formation by the promotion of fibroblastic activity and collagen creation stimulated by amniocorial remnants, before endometrial regeneration replacement.\textsuperscript{14}

As noted by the authors the evaluation of the preoperative inflammation status is important, however they conduct it just using symptoms reported by patients such as abdominal pain, fever, vaginal discharge, and odor. Despite no recent studies about the determination of C-reactive protein levels in serum of women with intrauterine adhesions are reported in literature, it may be appropriate to measure it in blood of women before undergoing suction induced abortion. The C-reactive protein levels, in fact, rapidly increase in women with pelvic inflammatory disease as demonstrated in the study of Lehtinen.\textsuperscript{15} Moreover, as reported by Rabau,\textsuperscript{16} C-reactive protein levels are elevated also in endometrial inflammation. We also believe that the accuracy of the presented study could be considerably improved considering that the use of periabortal antibiotic therapy in induced abortion suction can decrease the risk of postoperative inflammation, as it is clearly reported in the work of Sawaya\textsuperscript{17} and Low.\textsuperscript{18} Antibiotics have a substantial protective effect in women treated for abortion and the use of periabortal medication may prevent up to 50\% of all cases of postoperative infections. In addition, several studies recommended the routine usage of the antibiotic prophylaxis in all women undergoing the surgical abortion procedure to avoid postabortal sequelae.\textsuperscript{19,20} Furthermore, the study did not investigate if retained products of conception (RPOC) remain in the uterine cavity after the induced abortion procedure. Their intrauterine retention could be diagnosed by observing clinical sign and symptoms such as vaginal bleeding, pain, and fever\textsuperscript{21} and an abnormal uterine cavity with a transvaginal sonography.\textsuperscript{22} In our opinion, this kind of instrumental exam, performed after a uterine evacuation procedure could be helpful to reduce the incidence of RPOC and the total complication rate as demonstrated by Debby.\textsuperscript{23} In fact, these remnants, often of placental origin,\textsuperscript{24} may potentially cause intrauterine adhesion formation and thus infertility due to an inflammatory state.\textsuperscript{21}

Finally, we consider the hysteroscopy as a secure and versatile surgical procedure useful in diagnosis and treatment of several gynecological and obstetric pathologies.\textsuperscript{25,26} The association of this minimally invasive approach with modified instruments and pharmacological medication permits to treat even challenging affections as polypoid formations of big size, cervical pregnancies, and severe bleeding.\textsuperscript{27–29} Furthermore, a recent study suggests that the hysteroscopy safety could be incremented by the performance of monitoring some parameters and symptoms during the procedure to prevent and avoid possible complications.\textsuperscript{30}

Therefore, we concur with the main idea reported by the authors to introduce the hysteroscopy as a valid procedure to treat intrauterine adhesions.\textsuperscript{13} This concept is supported by several studies that investigated the use of hysteroscopic adhesiolysis with the purpose of increasing the pregnancy rate. For example, Cholkeri-Singh et al. have conducted a small prospective study about this topic that showed a positive outcome in term of conceiving.\textsuperscript{21} The same results are reported by Kodaman et al. that optimized the fertility outcome by the accurate diagnosis of intrauterine adhesions and their treatment with hysteroscopic resection.\textsuperscript{31} Moreover, it should be helpful to investigate the use of hysteroscopy to treat RPOC after abortion to reduce the risk of postoperative adhesions as recently suggested by the study of Smorgick et al. The results show that the use of hysteroscopy in the removal of RPOC following medical abortion is related with a low incidence of postoperative synechiae.\textsuperscript{32} Nevertheless, all these studies are limited by the small number of people recruited, therefore controlled trials and randomized studies would be desirable to delve deeper into the topic.

Although we really appreciated the methodology of the proposed study and consider that the outcomes can help in the management of the clinical practice of intrauterine adhesions, we recommend the conduction of further studies as randomized controlled trials employing a larger cohort to improve the validity of the presented results and to give the future researches a better understanding of the argument.

**DECLARATION OF INTEREST**

The authors report no conflict of interest. The authors alone are responsible for the content and writing of the article.
REFERENCES

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