

Effect of hysteroscopic lysis of intrauterine adhesions in menstruating women on subsequent late proliferative phase endometrial thickness

J.H. Check^{1,2}, C. Dieterich², J.K. Choe^{1,2}

¹Cooper Medical School of Rowan University, Camden, NJ

²Cooper Institute for Reproductive and Hormonal Disorders, P.C., Mt. Laurel, NJ (USA)

Summary

Purpose: To determine if adhesiolysis of intrauterine adhesions improves or is detrimental to post-operative endometrial thickness in women with normal menstruation. **Materials and Methods:** Endometrial thickness by sonography was determined at the time of the mature dominant follicle, both in a cycle prior and then following hysteroscopic adhesiolysis. **Results:** The pre- and post-average endometrial thicknesses were exactly the same. Considering three endometrial thickness categories (4-5 mm poor prognosis, 5-6 mm fair prognosis, and ≥ 8 mm good prognosis) one woman went from fair to good, but three went from good to fair, and one went from good to poor. **Conclusions:** Through there were no significant differences, but there was a trend for diminished endometrial thickness. Thin endometria has been associated with diminished fecundity. This preliminary study should encourage a large prospective controlled study evaluating the effect of adhesiolysis on endometrial thickness and pregnancy rates in women with normal menses despite intrauterine adhesions.

Key words: Menstruating women; Intrauterine adhesions; Adhesiolysis; Endometrial thickness.

Introduction

The presence of intrauterine adhesions can be an etiologic factor for infertility or miscarriage [1, 2]. Hysteroscopic adhesiolysis seems to improve reproductive outcome, but to date there are no prospective controlled studies performed to determine the role of concomitant fertility treatment following adhesiolysis [3, 4].

Adhesiolysis of severe adhesions resulting in amenorrhea, even if subsequent uterine cavity evaluation seems to show restitution of a normal uterine cavity, is associated with lower success rates compared to adhesiolysis for mild disease [5]. Berman, in his review of intrauterine adhesions stated that “others may have relatively normal menstrual cycles and only present with complaints of infertility” [6].

It is not clear because of lack of controlled studies if intrauterine adhesions not inhibiting relatively normal menses are a definite cause of infertility, or whether pregnancy following adhesiolysis is related to removal of adhesions or subsequent fertility treatment.

A thin endometrium seems to correlate with diminished pregnancy outcome [7-9]. One small study of seven cases suggested that pre-operative endometrial thickness was predictive of clinical outcome [10].

The objective of the present study was to determine in women with apparently normal menstruation, but who

demonstrated the likelihood of intrauterine adhesions by sonohysterogram or hysterosalpingogram, the effect of hysteroscopic adhesiolysis on subsequent endometrial thickness.

Materials and Methods

Infertile women, as opposed to those with recurrent miscarriage, who demonstrated apparent adhesions on sonohysterogram or hysterosalpingography had hysteroscopies performed and agreed to have adhesiolysis if the diagnosis was confirmed.

Only women who formed mature follicles (as defined as attaining an 18-24 mm average diameter follicle with a serum estradiol > 200 pg/mL) were recruited. Endometrial thickness was then determined at the time of a mature follicle in the cycle prior to hysteroscopy. Endometrial thickness was then determined at the time of a mature follicle in the first natural cycle investigation following the hysteroscopic lysis of adhesions.

The surgery was scheduled during early proliferative phase. All cases were performed with a 12-degree telescope. The uterine cavity was distended with sorbitol solution. In the majority of patients ($> 90\%$), hysteroscopy with lysis of adhesions was performed with hysteroscopy scissors. In a few patients ($< 10\%$), hysteroscopy was switched to resectoscopy to stop bleeding with electric loop during procedures. The monopolar electrical generator was set at 50-60 watts. Then lysis of adhesions was completed by the scissors.

None of the patients had fluid imbalance or hyponatremia develop during surgery or post-operatively. Post-operative follow-

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Table 1. — Endometrial thickness at time of peak follicular maturation in women found to have intrauterine adhesions by sonohysterogram.

Endometrial thickness (mm)	Number of women
4-5	0
6-7	8 (4 with 6 mm, 4 with 7 mm)
≥ 8	22

Table 2. — Endometrial thickness at time of peak follicular maturation in first cycle of investigation post-surgical adhesiolysis of intrauterine adhesions.

Endometrial thickness (mm)	Number of women
4-5	1
6-7	11 (7 with 6 mm, 4 with 7 mm)
≥ 8	18

up consisted of a sonohysterogram performed one to two months after surgery. All cases were performed by two experienced hysteroscopic surgeons with the majority of cases performed by the most experienced surgeon.

The women were divided into three endometrial thickness groups both before and after surgery: 4-5 mm - poor prognosis group, 6-7 mm - fair prognosis group, and ≥ 8 mm - good prognosis group.

Results

Thirty consecutive cases were evaluated. Pre-surgical endometrial thickness is seen in Table 1. Thus, before surgery 73.4% had an endometrial thickness considered in the normal fertile range.

Post-surgical endometrial thickness according to fertility potential categories is seen in Table 2. Thus post-surgery there were 60.0% who demonstrated endometrial thickness in the normal fertility category.

Though the difference between 73.4% and 60% was not significantly different by Fisher's exact test, there was certainly no trend for improvement of thickness following surgery. The average endometrial thickness was 8.4 mm both before and after surgery. Only one woman improved her fertility category following adhesiolysis - fair to good category.

There were three women who went from the normal fertility category to the fair category. Most concerning was the woman who went from the normal fertility category to the poor category post-operatively.

Discussion

This study was not designed to evaluate whether adhesiolysis improves pregnancy rates in infertile women with normal menses. The possibility exists that even without improving endometrial thickness, adhesiolysis may improve abnormal endometrial receptor factors, e.g., hypoxia.

These data from the present study should encourage a cooperative prospective study evaluating whether adhesiolysis for adhesions in women with normal menses is beneficial for achieving pregnancies in subfertile women, or no benefit, or detrimental. It should be noted that the one woman going from the normal to the poor fertility potential category had the surgery performed by the less experienced surgeon.

There is little question that hysteroscopic adhesiolysis improves fertility outcome in women with severe intrauterine adhesions leading to amenorrhea or oligomenorrhea [5]. However, it is not clear that removal of intrauterine adhesions for mild adhesions, where menses are normal, is beneficial. Future properly performed prospective studies are needed to define if and when to perform such surgery.

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Corresponding Author:
J.H. CHECK, M.D., Ph.D.
7447 Old York Road
Melrose Park, PA 19027 (USA)
e-mail: laurie@ccivf.com