Intrauterine Adhesions Following Miscarriage: Look and Learn

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Abstract

Objective: To examine the incidence of intrauterine adhesions (IUA) following the management of miscarriage in women with previously documented normal uterine cavities.

Methods: We conducted a retrospective cohort study from two fertility clinics with standard practice protocols for evaluating the uterine cavity prior to infertility treatment and following clinical pregnancy loss. A database query and manual chart review identified 144 women with normal uterine cavities who experienced a miscarriage between January 2010 and November 2012 and returned to the clinic for follow-up hysteroscopy. Following documentation of a non-viable clinical pregnancy using transvaginal ultrasound, patients chose expectant, medical, or surgical management according to standardized clinical protocols. The primary outcome was the detection of IUA. Secondary outcomes included the presence of retained products of conception and various risk factors associated with the development of IUA.

Results: The incidence of IUA following early pregnancy loss was 6.3%. There were no significant differences in patient characteristics between those with and without IUA. There was a significant association between IUA and increasing uterine size, particularly in the presence of multiple gestation ($P = 0.039$). Mechanical suction dilatation and curettage (D&C) was a risk factor for IUA, but manual vacuum aspiration was not a risk factor ($P = 0.003$). Retained products of conception were found in 13.9% of study participants, and the incidence did not differ among management options.

Conclusions: This appears to be the first documentation of IUA that were entirely attributable to the index miscarriage or its management. There appears to be an increased risk of IUA following D&C with larger uteri and multiple pregnancies and following mechanical suction D&C.

Résumé

Objectif : Examiner l'incidence des adhérences intra-utérines (AIU) à la suite de la prise en charge de la fausse couche dans le cas de femmes chez lesquelles la présence d'une cavité utérine normale avait auparavant été documentée.

Méthodes : Nous avons mené une étude de cohorte rétrospective à partir de deux cliniques de fertilité comptant des protocoles de pratique standard pour ce qui est de l'évaluation de la cavité utérine avant la mise en œuvre d'un traitement contre l'infertilité et à la suite d'une perte de grossesse clinique. Une interrogation de base de données et une analyse manuelle de dossiers ont permis d'identifier 144 femmes présentant une cavité utérine normale qui ont connu une fausse couche entre janvier 2010 et novembre 2012, et qui sont revenues à la clinique pour une hystéroscopie de suivi. À la suite de la documentation (au moyen d'une échographie transvaginale) d'une grossesse clinique non viable, les patientes ont choisi d'avoir recours à une prise en charge non interventionniste, médicale ou chirurgicale conformément aux protocoles cliniques standardisés. Le critère d'évaluation principal a été la détection d'AIU. Parmi les critères d'évaluation secondaires, on trouvait la présence de produits de conception en rétention et divers facteurs de risque associés à l'apparition d'AIU.

Résultats : L'incidence des AIU à la suite d'une perte de grossesse précoce a été de 6,3 %. Aucune différence significative n'a été constatée en matière de caractéristiques propres aux patientes entre celles qui présentaient des AIU et celles qui n'en présentaient pas. Une association significative a été constatée entre les AIU et une augmentation de la taille de l'utérus, particulièrement en présence d'une gestation multiple ($P = 0,039$). La mise en œuvre d'une dilatation-curetage (DC) faisant appel à une aspiration mécanique constituait un facteur de risque pour ce qui est des AIU; toutefois, celle d'une DC faisant appel à une aspiration manuelle n'en constituait pas un ($P = 0,003$). Des produits de conception en rétention ont été constatés chez 13,9 % des participantes à l'étude et leur incidence ne différait pas d'une option de prise en charge à l'autre.

Conclusions : Notre étude semble être la première à s'être penchée sur les AIU entièrement attribuables à la fausse couche de référence ou à sa prise en charge. Le risque d'AIU semble être accru à la suite d'une DC menée en présence d'un utérus de taille supérieure et d'une gestation multiple, ainsi qu'à la suite d'une DC faisant appel à une aspiration mécanique.

Key Words: Asherman's syndrome, intrauterine adhesions

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INTRODUCTION

Intrauterine adhesions (IUA) are believed to form following a process that damages the basalis layer of the endometrium.[1] The recently gravid uterus is particularly susceptible. Asherman's syndrome typically is found in a subset of women with IUA who present with symptomatic uterine synechiae; associated clinical features include amenorrhea, hypomenorrhea, subfertility, recurrent pregnancy loss, or abnormal placentation.[2] The prevalence of IUA is variable, ranging from 2% to 48% in a prospective series of women following surgical evacuation of an early pregnancy loss.[2] Unfortunately, the true prevalence remains uncertain because no studies to date have included prior documentation of a normal uterine cavity.

Dilatation and curettage (D&C) is a known risk factor for developing IUA and Asherman's syndrome, with increased risk associated with multiple procedures or the use of sharp curettage.[3,4] However, Tam et al. were unable to find a difference in adhesion formation among women without prior historical risk factors who had been randomly assigned to expectant, medical, or surgical management of miscarriage.[5] Furthermore, Smith et al. reported no difference in pregnancy rates over five years after randomization to expectant, medical, or surgical management of miscarriage.[6] Taken together, these findings illustrate the challenges in documenting whether adhesions are attributable to the miscarriage or its treatment and whether such adhesions have an impact on subsequent reproductive function.

Several studies have reported the association between various risk factors and the development of IUA.[1–4,7] However, to our knowledge, there have been no published reports describing the likelihood of formation of IUA in women with previously documented normal uterine cavities. A recent cluster of cases of Asherman's syndrome following D&C at our institution led to a practice audit aimed at identifying such risk factors[8] and underscored the need for additional longitudinal evaluation.

The existence of standardized practice patterns at two local infertility clinics and our regional Early Pregnancy Assessment Clinic (EPAC) prompted us to determine whether women undergoing infertility investigations could provide an opportunity for longitudinal follow-up of certain early pregnancy outcomes. We sought to identify women with a documented normal uterine cavity who subsequently conceived, had an early pregnancy loss, and returned for standardized hysteroscopic reevaluation of their uterine cavity before attempting to conceive again. Within that subset of women, our goal was to evaluate the incidence of IUA and retained products of conception (RPOC) following expectant, medical, or surgical management of their miscarriage.

ABBREVIATIONS

D&C	dilatation and curettage
IUA	intrauterine adhesions
RPOC	retained products of conception

METHODS

We performed a retrospective cohort study of women who sought care at two infertility clinics in which standard practice involved confirmation of a normal uterine cavity at baseline. The outcome of each subsequent clinical pregnancy was then documented. A database query identified 287 women who had experienced a clinical miscarriage between January 2010 and November 2012, followed by an office hysteroscopy in the ensuing two to four months.

The charts for these 287 women were reviewed to determine eligibility for the study. Women were considered eligible if their preconception hysteroscopy or hysterosalpingogram revealed a normal uterine cavity, either at baseline or at second-look hysteroscopy following successful surgical correction of abnormalities such as endometrial polyps, IUA, or a uterine septum. Women were excluded (n = 102) if they had an ongoing intrauterine pregnancy or pregnancy of unknown location, experienced a second trimester loss, or did not return for a follow-up hysteroscopy. Lastly, during the process of a physical move, 41 charts could not be located for review. These unanticipated exclusions arose when the two participating infertility clinics were created by division of a single clinic into two unrelated entities during the chart review. After these 143 exclusions, 144 charts were available for review.

All women had experienced a non-viable intrauterine pregnancy documented by first trimester transvaginal ultrasound. Regardless of mode of conception, all women received standardized counselling regarding expectant, medical, or surgical options for management. Women with a gestational sac > 9 weeks' size or with medical concerns (e.g., morbid obesity, severe anxiety) were encouraged to use the hospital facilities offering conscious sedation or general anaesthesia. Otherwise, counselling was generally non-directive and was driven by patient choice and desire for a particular form of pain control.

Treatment was organized through the infertility clinic or EPAC at B.C. Women' s Hospital & Health Centre according to standardized treatment protocols.[8,9] Treatment