Curettage and Asherman's Syndrome—Lessons to (Re-) Learn?

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Abstract

Objective: To investigate the noted cluster of cases of Asherman's syndrome in an 18-month period at an Early Pregnancy Assessment Centre at a tertiary care institution.

Methods: A practice audit was performed involving (a) a detailed chart review of the six index cases; and (b) compilation of treatment choices for all new patient referrals in the same 18-month time frame from July 2011 to December 2012. Diagnosis of Asherman's syndrome was made with a combination of clinical menstrual symptoms and hysteroscopic diagnosis of intrauterine adhesions.

Results: Of 1580 new patient referrals, 884 chose one of four forms of active management for early pregnancy failure. Six women (6/844, 0.7%) were subsequently found to have Asherman's syndrome. All six women (100%) underwent sharp curettage, and three (50%) had repeat curettage performed. No cases of Asherman's were reported following manual vacuum aspiration (0/191) or medical management with misoprostol (0/210).

Conclusion: Asherman's syndrome remains a risk for those undergoing dilatation and curettage for management of spontaneous abortion and should be an important component of the informed consent for this procedure. Both sharp and repeated curettage remain important risk factors and should be employed judiciously. The evaluation of the common risk factors associated with these cases could target changes in practice.

Résumé

Objectif : Se pencher sur le groupe de cas de syndrome d'Asherman qui ont été constatés sur une période de 18 mois au sein du centre d'évaluation de la grossesse précoce d'un établissement de soins tertiaires.

Méthodes : Nous avons mené un audit de pratique mettant en jeu (a) une analyse détaillée des dossiers des six cas probants et (b) une compilation des choix de traitement pour toutes les nouvelles patientes de ce centre au cours de la même période de 18 mois (de juillet 2011 à décembre 2012). Un diagnostic de syndrome d'Asherman a été porté en fonction d'une combinaison de symptômes menstruels cliniques et d'un diagnostic hystéroscopique d'adhérences intra-utérines.

Résultats : Chez les 1 580 nouvelles patientes de ce centre, 884 ont choisi l'une des quatre formes de prise en charge active de l'échec précoce de la grossesse. On a par la suite constaté la présence du syndrome d'Asherman chez six femmes (6/844, 0,7 %). Ces six femmes (100 %) ont subi une dilatation-curetage; trois d'entre elles (50 %) ont dû subir un deuxième curetage. Aucun cas de syndrome d'Asherman n'a été signalé à la suite d'une aspiration manuelle (0/191) ou d'une prise en charge médicale au moyen de misoprostol (0/210).

Conclusion : Le syndrome d'Asherman demeure un risque pour les femmes qui subissent une dilatation-curetage aux fins de la prise en charge d'un avortement spontané et devrait constituer une composante importante du processus de consentement éclairé en ce qui concerne cette intervention. La tenue d'une dilatation-curetage et d'un deuxième curetage demeurent d'importants facteurs de risque; ces interventions devraient donc être utilisées de façon judicieuse. L'évaluation des facteurs de risque courants associés à ces cas pourrait permettre de cibler des changements en matière de pratique.

Key Words: Asherman's syndrome, intrauterine adhesions, spontaneous abortion, dilatation and curettage

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INTRODUCTION

Since the first description of intrauterine adhesions in 1894,[1] the clinical scenario of symptomatic uterine synechiae has become widely known as Asherman's syndrome.[2–5] The diagnosis requires documentation of intrauterine adhesions in addition to clinical features such as amenorrhea, hypomenorrhea, subfertility, recurrent pregnancy loss, or abnormal placentation.[2,4] The true prevalence is unknown, but ranges from 2% to 48% in prospective series of women following surgical evacuation of an early pregnancy loss.[4] Dilatation and curettage is a known risk factor for the condition, particularly when multiple procedures or sharp curettage are involved.[2,5]

The Early Pregnancy Assessment Clinic at BC Women's Hospital provides rapid access to diagnosis, counselling, and treatment for women with first trimester bleeding and pain.[6] All new patients undergo clinical assessment and transvaginal ultrasound. Those with non-viable pregnancies or retained products of conception are offered expectant, medical, or surgical management (Table 1). Women with a gestational sac size > 9 weeks or medical concerns (e.g., morbid obesity, anxiety) are encouraged to use the hospital's facilities that offer conscious sedation or general anaesthesia. Otherwise, counselling is generally non-directive and driven by patient choice and desire for a particular form of pain control.

The clinic's standardized informed consent process involves a discussion about risks such as Asherman's syndrome, but until recently the complication was not frequently reported at the clinic. Within an 18-month period (from July 2011 to December 2012), the care providers at EPAC identified six cases of Asherman's syndrome following treatment for an early pregnancy loss. These cases prompted a practice audit that sought to investigate possible shared risk factors among the cases to identify areas where practice change could potentially be targeted.

METHODS

A practice audit was performed involving all new patient referrals to EPAC between July 1, 2011, and December 31, 2012. This included a detailed chart review of the six index cases and questioning of medical and nursing staff to identify possible additional cases. Treatment choice and disposition were abstracted from a treatment log where they had been recorded in a non-identifying fashion.

To identify previous reports of intrauterine adhesions following uterine evacuation, we conducted a systematic search of Medline for articles published between 1946 and 2013, using the Medical Subject Headings "abortion, spontaneous" combined with any of "infertility, female," "hysteroscopy," "tissue adhesions," "amenorrhea," "uterine diseases," "menstrual disturbances," "gynatresia," "vacuum curettage," and "dilatation and curettage."

Ethics approval was obtained from the University of British Columbia/ Children's and Women's Health Centre of British Columbia Research Ethics Board.

RESULTS

Between July 2011 and December 2012, 1580 new patients were evaluated at EPAC for first trimester bleeding or pain. Of those, 884 chose one of four forms of active management for early pregnancy failure (Table 1). Six of those women (6/884; 0.7%) contacted the clinic after eight or more weeks complaining of hypomenorrhea or amenorrhea; hysteroscopy revealed IUA consistent with the diagnosis of Asherman's syndrome (Tables 2 and 3) according to the American Society of Reproductive Medicine classification system.[7]

All six women (100%) underwent sharp curettage at the time of their D&C. Three of six (50%) had repeat curettage performed. No cases of Asherman's syndrome were reported following manual vacuum aspiration (0/191) or medical management with misoprostol (0/210) (Table 3).

DISCUSSION

Asherman's syndrome is a known, but infrequent, complication of D&C. The true incidence and prevalence are unknown, as most women do not undergo routine evaluation of their uterine cavity following pregnancy termination or management of early pregnancy loss. In addition, there are no longitudinal studies evaluating adhesion formation post-D&C in women with previously documented normal uterine cavities. Such D&Cs are often performed by on-call or rotating health care providers who will not have follow-up contact with the woman, thus perpetuating the difficulty in ascertaining the true rate of occurrence of this complication.

A cluster of six self-reported cases in an 18-month period initiated this practice audit and research report. The 1% (6/674) incidence of Asherman's syndrome following all

ABBREVIATIONS

D&C	dilatation and curettage
EPAC	Early Pregnancy Assessment Clinic
IUA	intrauterine adhesions
MVA	manual vacuum aspiration

Table 1. Active management protocols for non-viable pregnancy or retained products of conception

Treatment	Location	Analgesia/Anaesthesia	Uterine evacuation	Sharp curettage	Cervical procedures
Misoprostol	Home	Oral non-narcotic analgesia if needed	800 µg misoprostol vaginally with repeat in 24 hours if needed	N/A	N/A
Manual vacuum aspiration	Ambulatory Early Pregnancy Assessment Clinic	Oral hydromorphone, acetominophen, ibuprofen and misoprostol	Manual vacuum aspiration with soft suction curette	Rare	Paracervical block Mechanical dilatation used uncommonly
Vacuum aspiration with conscious sedation	Ambulatory surgical facility dedicated to pregnancy termination/loss	IV conscious sedation with fentanyl and midazolam	Manual or electric suction aspiration with soft or rigid curette	Common	Paracervical block Mechanical dilatation
Dilatation & curettage	Hospital operating room	General anaesthesia	Electric suction aspiration with rigid curette	Typically routine	Mechanical dilatation

Table 2. Case series of patients with Asherman's syndrome post miscarriage

Case	Age	Gravidity/ Parity	Previous D&C	Gestational age by LMP*	Gestational age by transvaginal ultrasound	Management	Sharp curettage	Repeat sharp curettage	Presenting symptoms	AFS adhesion severity†	Outcome post diagnosis
1	30	G3P1	2	9+1	8+4	VACS	Yes	Repeat VACS with repeat sharp curettage for elevated serum βhCG	Hypomenorrhea	Mild	Hysteroscopic resection Lost to follow-up
2	34	G2P1	0	9+0	N/A (RPOC[5])	VACS	Yes	—	Amenorrhea with cyclic cramping	Severe	Hysteroscopic resection ×2 D&C for miscarriage no. 2 Salpingectomy for ectopic pregnancy
3	31	G1P0	0	8+3	6+6	VACS	Yes	Repeat VACS ×2, repeat sharp curettage ×1 for retained products of conception	Amenorrhea	Severe	Hysteroscopic resection Term delivery with partial placenta accreta
4	37	G3P0	1	9+4	5+6	VACS	Yes	—	Amenorrhea	Severe	Hysteroscopic resection Normal menses Lost to follow-up
5	36	G1P0	0	Not known	9+6	D&C in operating room	Yes	Repeat D&C with repeat sharp curettage for retained products of conception	Amenorrhea	Severe	Hysteroscopic resection ×2 D&C for miscarriage no. 2 Current pregnancy in 2nd trimester
6	33	G2P0	0	8+1	6+4	VACS	Yes	—	Amenorrhea	Severe	Hysteroscopic resection Normal menses Lost to follow-up

VACS: vacuum aspiration with conscious sedation

*Last menstrual period

†American Fertility Society classification of intrauterine adhesions[7]

Table 3. Occurrence of Asherman's syndrome by active treatment choice following diagnosis of non-viable pregnancy

Treatment choice	Asherman's Syndrome n (%)
Misoprostol (n = 210)	0 (0)
MVA (n = 191)	0 (0)
VACS (n = 406)	5 (1.2)
D&C (n = 77)	1 (1.3)

forms of suction uterine evacuation was reassuringly low. However, this number likely represents an underestimate of the true incidence at our institution, as cases were identified only by self-reporting of menstrual symptoms. Women received written and verbal instructions to contact the clinic if they remained amenorrheic eight weeks post-miscarriage, but it is possible that some presented with other symptoms or sought evaluation and treatment elsewhere. As a result of the practice audit, those patient instructions were modified for consistency and clarity. Notably, all six of the current subjects presented with menstrual disturbances, emphasizing the importance of this symptom in assessing the risk of Asherman's syndrome.

From our literature search, we were able to identify only one case series describing IUA following manual vacuum aspiration. Dalton et al. reported a 1.1% incidence (3/262 cases) of IUA following MVA without sharp curettage.[8] While we were reassured to find no cases of Asherman's syndrome following 191 MVA procedures at our clinic, we cannot rule out the possibility of asymptomatic IUA formation following MVA. Both our study cohort and the case series of Dalton et al. were hampered by relatively small sample sizes and ascertainment bias related to self-reporting.

Neither the current series nor any previous publications that we are aware of have documented IUA formation following various forms of uterine evacuation in women with previously normal uterine cavities. We are not aware of other research reports evaluating Asherman's syndrome following various methods of uterine evacuation in the same institution. Our six cases all had recognized risk factors for Asherman's syndrome, including sharp curettage (6/6) and repeat sharp curettage (3/6). As well, two of our six subjects had undergone previous D&C procedures, which may have contributed to adhesions formation. Although we cannot confirm a causal relation, it would appear that sharp and/or repeated curettage continues to predispose to adhesion formation, while procedures without sharp curettage (such as MVA) likely have a lower risk.

The main limitations of this series include small numbers, ascertainment bias due to self-reporting of menstrual symptoms (as described above), and lack of systematically collected information about the uterine cavity prior to and following the index pregnancy loss. The nature of the data collection in this practice audit did not allow us to identify women with asymptomatic IUAs, or women with IUAs that predisposed to later sequelae such as infertility, recurrent pregnancy loss, or abnormal placentation. In addition, we did not have ethics approval or consent to contact all 884 women who underwent active management at our centre to obtain long-term follow-up information. Unfortunately, these limitations typify the literature and highlight the difficulties with long-term follow-up in this area.

With the development of EPAC and pregnancy termination programs, large numbers of women undergo medical or surgical uterine evacuation. However, by their nature, such programs are generally not designed to provide ongoing gynaecologic care beyond the index pregnancy or pregnancy loss, thus challenging their detection of long-term complications. While retrospective in nature and limited by self-reporting, these findings contribute to our understanding of factors predisposing to Asherman's syndrome. Given the cluster of cases noted in this research report, inclusion of the risk of Asherman's syndrome in the informed consent process remains important. In addition, both sharp and repeat curettage are known risk factors for IUA formation, yet their use is still commonplace in certain settings. While repeat curettage may be unavoidable in some cases of retained products of conception, the current findings suggest that it may be prudent to minimize the use of sharp curettage for uncomplicated suction uterine evacuation procedures. However, such a strategy will be effective only if it is not associated with a higher incidence of incomplete uterine evacuation. We have used these results as the impetus to initiate a larger study using systematic hysteroscopy to evaluate IUA formation and the incidence of retained products of conception following various forms of uterine evacuation in a cohort of women with previously documented normal uterine cavities.

Although uncommon, IUA are generally iatrogenic in nature. Awareness of such complications in one's program or institution and attention to predisposing factors are important steps in reducing risk. Despite its imperfections as a research tool, this practice audit has been used to raise local awareness of Asherman's syndrome, and to change patterns of practice including pre- and post-procedure counselling, management of post-miscarriage amenorrhea and procedural technique. We encourage other programs to participate in similar assessments, and to share their

findings locally and/or nationally in an attempt to reduce the occurrence of such complications.

CONCLUSION

A cluster of six cases prompted a practice audit that raised local awareness of Asherman's syndrome. This led to improvements in the program's patient-information materials and development of standardized protocols to facilitate uniform counselling about and management of post-miscarriage amenorrhea. Review of these six cases and discussion among care providers has since led to a marked decrease in the use of sharp curettage following vacuum aspiration with conscious sedation, as well as a shift towards MVA at our institution.

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REFERENCES

1. Fritsh H. Ein Fall von volligem Schwund ser Gebarmutterhohle nach Auskratzung. Zentralbl Gynaekol 1894;18:1337–42.
2. Asherman JG. Amenorrhoea traumatica (atretica). J Obstet Gynaecol Br Emp 1948;55:23–30.
3. Hoffman BL, Schorge JO, Schaffer JI, Halvorson LM, Bradshaw KD, Cunningham FG, et al., eds. Williams Gynecology. 2nd ed. New York: McGraw-Hill; 2012.
4. Yu D, Wong YM, Cheong Y, Xia E, Li TC. Asherman syndrome—one century later. Fertil Steril 2008;89(4):759–79.
5. Deans R, Abbott J. Review of intrauterine adhesions. J Minim Invasive Gynecol 2010;17(5):555–69.
6. Racette N. Early pregnancy assessment clinic. B C Med J 2010;52(2):101.
7. The American Fertility Society. The American Fertility Society classifications of adnexal adhesions, distal tubal occlusion, tubal occlusion secondary to tubal ligation, tubal pregnancies, mullerian anomalies and intrauterine adhesions. Fertil Steril 1988;49(6):944–5.
8. Dalton VK, Saunders NA, Harris LH, Williams JA, Lebovic DI. Intrauterine adhesions after manual vacuum aspiration for early pregnancy failure. Fertil Steril 2006;85(6):1823.e1–3.