

The use of a hysteroscopic resectoscope for repeat evacuation of retained products of conception procedures: a case series

J. D. M. Nicopoulos · A. Treharne · A. Raza ·
R. Richardson

Received: 23 October 2009 / Accepted: 2 December 2009 / Published online: 8 January 2010
© Springer-Verlag 2009

Abstract The blind nature of the surgical management of retained products of conception allows for a significant risk of uterine perforation or the need for repeat evacuation and subsequent morbidity due to a failed procedure. These risks may be increased postpartum or at a repeat surgical procedure. We present a case series of five patients with clinical, sonographic, or histological diagnosis of retained products of conception following either failed surgical evacuation or postpartum. All were treated surgically without complication using the loop of a saline hysteroscopic resectoscope to allow removal under direct vision of retained tissue.

Keywords Hysteroscopy · Miscarriage · Retained products of conception

Introduction

Miscarriage (as either early embryonic or foetal demise) occurs in approximately 10–20% of clinically recognised conceptions [1]. Surgical evacuation of the retained products of the conception (ERPC) has traditionally been the standard management predominantly on the assumption of the risk of infection or bleeding without intervention. With the increasing availability of early pregnancy units, appropriate counselling, and 24-h access to advice and support (a prerequisite set out by the Royal College of Obstetricians and Gynaecologists [1]), the use of expectant and medical management is more prevalent. This move

towards a more patient-orientated approach is supported by recent randomised evidence in 1,200 women with incomplete miscarriage or early foetal demise at less than 13 weeks. They demonstrated no significant difference in infection rates between the three treatment modalities, although unplanned admissions and unplanned surgical curettage were significantly higher in the medical and expectant group (13% and 44%, respectively, versus 5% for surgical) [2].

If surgical treatment is performed, vacuum aspiration is the method of choice with significantly decreased blood loss, postoperative pain, and duration compared to sharp curettage [3]. In view of the blind nature of the procedure, along with the 5% risk of repeat procedure demonstrated in the Miscarriage Treatment (MIST) trial [2], there is also the risk of uterine perforation. These complications further add to the already significant emotional and physical burden on couples, as well as placing further demands on National Health Service resources.

Following initial failed surgical evacuation, the retained tissue is often focal, and blind removal guided by the texturous change on feeling normal endometrium is less clear-cut. This is highlighted by one study that noted only 58% of histological samples from re-evacuation resulted in evidence of gestational tissue [4]. Similarly, the removal of retained products postpartum is potentially associated with an increase risk of uterine perforation.

We present a case series to demonstrate a hysteroscopic technique for effective removal of retained tissue products of conception (RPOC) under direct vision, either following previous treatment failure or postpartum.

Case series

In the 2-year period to December 2008, five women who experienced the complication of retained products after

J. D. M. Nicopoulos (✉) · A. Treharne · A. Raza · R. Richardson
Department of Gynaecology,
Chelsea & Westminster Foundation Trust,
369 Fulham Rd,
London SW10 9NH, UK
e-mail: jnicopoulos@aol.com

primary management of their miscarriage were treated using operative hysteroscopy:

- Case 1: A 35-year-old Gravida 1 Para 0 presented 6 weeks after an 18-week miscarriage of dichorionic twins. After spontaneous delivery, complete miscarriage was diagnosed. Initially, there was persistent bleeding, and transvaginal ultrasonography did not suggest retained products. She received a course of oral antibiotics in primary care for a suspected endometritis. Heavy bleeding associated with back pain recurred 2 weeks later. On our initial assessment, abdominal and pelvic examination was unremarkable, and a pipelle endometrial sample was obtained. Urgent histology confirmed mildly disordered proliferative endometrium in part and the remainder composed of necrotic tissue in which the outlines of chorionic villi, along with scanty viable decidua, were recognised.
- Case 2: A 39-year-old Para 1⁺³ (spontaneous vaginal delivery and two previous first trimester miscarriages requiring ERPC) presented with a history of abnormal vaginal 3 months after an ERPC for a third first trimester incomplete miscarriage. Following the procedure, she appeared to have two periods 34 days apart but bled persistently thereafter. Ultrasound assessment suggested an intrauterine mass, and serum β hCG remained elevated at 47 iu/ml in the absence of sexual activity since the initial surgery.
- Case 3: A 35-year-old Para 0⁺¹ presented 38 days after diagnosis of a delayed miscarriage at 9-week gestation. Spontaneous miscarriage followed 3 days later with persistent spotting thereafter. Initial sonography was inconclusive, but on repeat, the endometrium was thin and smooth to the fundus where there was an area of focal thickening and mixed echogenicity which was highly vascular on Doppler flow.
- Case 4: A 40-year-old Para 0 presented at 8-week gestation. The pregnancy was conceived following in vitro fertilisation, complicated by mild OHSS and suboptimal endometrial development where five eggs were collected and two embryos transferred. Initial ultrasound at 6 weeks confirmed a viable intrauterine pregnancy but routine 8-week ultrasound demonstrated an embryo (crown-rump length 7.5 mm) without foetal heart beat in association with a collapsing yolk sac confirming delayed miscarriage. An ERPC was performed but continuous pain and bleeding persisted for 3 weeks thereafter suggestive of RPOC.

Case 5: A 37-year-old Para 2⁺¹ was diagnosed with a delayed miscarriage at 10-week gestation; an ERPC performed, and discharged the same day. She was readmitted 1 week later with a history of vaginal bleeding with clots and feeling “generally unwell” unwell for 4 days, although she was not pyrexia. Following commencement on intravenous antibiotics, an ultrasound scan demonstrated retained products with increased vascularity.

In all cases, following diagnosis of suspected RPOC, patients were admitted, and written consent was obtained. Under general anaesthesia, an abdominal and pelvic examination was performed, the cervix dilated to 8 mm, and a saline resectoscope (Olympus, Southend, UK) inserted under direct vision using a wide-bore Y-type irrigation set (Easy flow ultra set, Baxter, UK). The endometrial cavity was expanded to obtain a clearer view with saline. This was added via 3-l bags (Baxter, UK) using either gravity or a pressure bag (Infusible Pressure Infuser, Vital Signs Inc, United States) with a maximal saline pressure of 150 mmHg allowing direct visualisation of size and location of RPOC. Fluid balance was monitored intraoperatively, and no significant deficit recorded. In all cases, a focal area of tissue was identified in an otherwise normal cavity.

The loop-cutting electrode was used as a blunt curette to allow removal of products under direct vision (Fig. 1a–d). Figure 1a–b demonstrates irregular endometrium and retained products obscuring the right ostium prior to treatment, and Fig. 1c–d demonstrates the regular endometrial cavity following treatment. In only one case was bipolar energy required to assist removal due to adherence of tissue to underlying myometrium. Blood loss was <100 ml in all cases, and no haemostatic interventions were required. The removed products were sent for histology, with confirmation of gestational tissue in all cases (ranging from 12×7×3 to 50×40×5 mm in) with varying degrees of endometrial lymphocytic infiltration.

All patients were discharged on the day of surgery with prophylactic antibiotic cover for 7 days (Doxycycline, 100 mg twice daily), and all had uneventful post-operative courses.

Discussion

Our case series demonstrates a novel use of the operative hysteroscope in the removal of retained products of conception.

Although not suitable for primary management of miscarriage due to the increased vascularity at initial miscarriage and subsequent suboptimal views, cost implications, and level of skill required, the direct visualisation

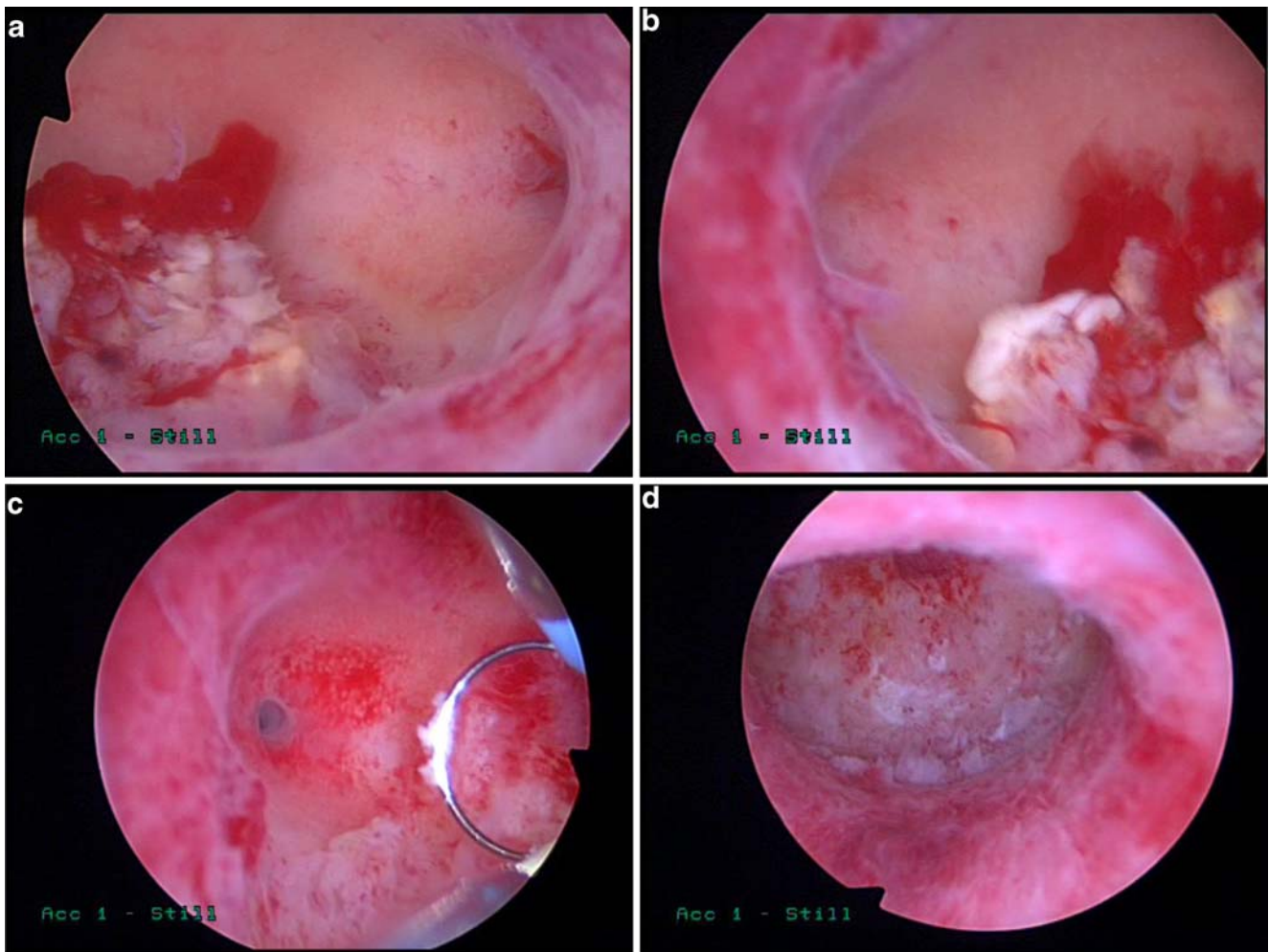


Fig. 1 **a** Retained products prior to treatment 248×186 mm (72×72 DPI). **b** Retained products prior to treatment 248×186 mm (72×72 DPI). **c** Right ostial view posttreatment 248×186 mm (72×72 DPI). **d** Endometrial cavity posttreatment 248×186 mm (72×72 DPI)

of the uterine cavity in selected circumstances, such as following initial surgical failure, postpartum, or in the presence of uterine anomalies where the surgical risk of the alternative blind technique may be high, offers a potentially safer alternative.

Whilst previous studies have used hysteroscopy to visualise retained products [5], published series of the use of hysteroscopic resection for RPOC is limited and predominantly in the management of secondary haemorrhage in the postpartum uterus [6, 7]. The hysteroscopic management of first trimester RPOC is reported in only one previous series [8] of posttermination complications.

Hysteroscopic visualisation and removal of products potentially minimises the risk of perforation and risk of failed removal of often focal areas of tissue. Avoidance of unnecessary curettage of healthy endometrium may also minimise the long-term risk of intrauterine adhesions and Asherman's syndrome in these women of reproductive age. Visual assessment of the cavity may also provide further

information on uterine anatomy in the case of recurrent miscarriage, which, if documented well, may avoid repeat investigational procedures in the future. The risk of further RPOC and possible intervention should also be minimised with this technique with direct visualisation allowing confidence that all RPOC have been removed and minimising further psychological trauma.

Although this series offers a potentially safer alternative to traditional repeat ERPC, larger series and ideally randomised trials are required to confirm the efficacy, confirm the lack of short or long-term complications presented, and identify parameters (whether ultrasonographic, serological, or clinical) that would aid patient selection for such management.

Conflict of interest There is no actual or potential conflict of interest in relation to this article.

References

1. The management of early pregnancy loss: Green-Top Guideline No. 25. Royal College of Obstetricians & Gynaecologists
2. Trinder J, Brocklehurst P, Porter R, Read M, Vyas S, Smith L (2006) Management of miscarriage: expectant, medical or surgical? Results of a randomised control trial (miscarriage treatment (MIST) trial). *BMJ* 332:1235–1238
3. Forna F, Gulmezoglu AM (2003) Surgical procedures to evacuate incomplete abortion. *Cochrane Database of Systematic Reviews*
4. Matijevic R, Knezevic M, Grgic O, Zlodi-Hrsak L (2009) Diagnostic accuracy of sonographic and clinical parameters in the prediction of retained products of conception. *J Ultrasound Med* 28(3):295–299
5. Agarwal S, Girish T, Habayeb O, Davies Q, Aravindan R (2009) An interesting case of ultrasound and hysteroscopy-guided surgical evacuation of the retained products of conception for early fetal demise. *J Obstet Gynaecol* 29(6):547–548
6. Shoukkrey MN, Fakokunde AF, Whitlow B, Evans-Jones JC (2005) Postpartum transcervical endometrial resection under laparoscopic control for retained degenerated products of conception. *Gynecol Surg* 2:201–203
7. Dankert T, Vleugels M (2008) Hysteroscopic resection of retained placental tissue: a feasibility study. *Gynecol Surg* 5:121–124
8. Goldberg M, Schiff E, Achiron R, Lipitz S, Mashiach S (1997) Managing residual trophoblastic tissue. *J Reprod Med* 42:6–28