Journal of Gynecology Obstetrics and Human Reproduction 48 (2019) 151–154

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Original Article

Operative hysteroscopy for retained products of conception: Efficacy and subsequent fertility

Perrine Capmas[a,b,*], Anina Lobersztajn[a], Laura Duminil[a], Tiphaine Barral[a], Anne-Gaëlle Pourcelot[a,c], Hervé Fernandez[a,b,c]

[a] AP-HP, Department of Gynecology and Obstetrics, Hospital Bicêtre, GHU Sud, F-94276, Le Kremlin Bicêtre, France
[b] INSERM, U1018, Centre of research in Epidemiology and population health (CESP), F-94276, Le Kremlin Bicêtre, France
[c] Faculty of medicine, University Paris Saclay, F-94276, Le Kremlin Bicêtre, France

ARTICLE INFO

Article history:
Received 18 June 2018
Received in revised form 11 December 2018
Accepted 12 December 2018
Available online 12 December 2018

Keywords:
Hysteroscopy
Retained product of conception
Intra-uterine adhesions
Fertility
Placental retention
Trophoblastic retention

ABSTRACT

Retained product of conception complicates nearly 1% of pregnancies and can lead to synechiae and compromise ulterior fertility. The aim of this study is to evaluate efficiency of operative hysteroscopy in management of retained products of conception (RPOC). Secondary objectives are assessments of intra-uterine adhesions rate and later fertility.

This unicentric retrospective study includes women who undertook an operative hysteroscopy for retained products of conception between January 2012 and March 2014. Assessment of the efficiency of operative hysteroscopy is defined by a complete resection of retained products of conception confirmed by office hysteroscopy.

One hundred fourteen women were included in the study. Efficiency of operative hysteroscopy for retained products of conception is 91% for women with a postoperative office hysteroscopy. The authors observed a 7.5% rate of postoperative intra-uterine adhesions. Fertility rate was 83% (30 women out of 36 with a desired pregnancy).

Hysteroscopic resection of retained products of conception is an efficient procedure and seems to be a real alternative.

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Introduction

Retained product of conception (RPOC) is defined by abnormal trophoblastic persistence or retained placenta inside the uterus cavity after a pregnancy independently of the outcome. It complicates around 6% of pregnancy [1] whether it is a miscarriage, a late fetal loss, a medical pregnancy termination, a voluntary pregnancy interruption, a normal delivery or a caesarean section [2].

RPOC is mostly symptomatic (menstrual disorders, pain, fever, amenorrhea) but can also be fortuitously discovered throughout exploration of late fetal loss or repeated miscarriage. Untreated RPOC can compromise future fertility [3].

Surgical management is the treatment of reference by uterine curettage which removes residual trophoblastic tissue inside the uterine cavity after cervical dilatation [4]. However, this treatment leads to a high level of intra-uterine adhesions (10–40% depending on studies [5–8] risk of incomplete resection [6] and uterine perforation. In case of incomplete removal of RPOC, a second procedure is needed, increasing the risk of complexe intra-uterine adhesions, such as Asherman's syndrome [9]. A postoperative office hysteroscopy is therefore recommended by French guidelines [10]

Operative hysteroscopy is therefore an alternative to uterine curettage which display the advantage of a "visual control", leading to higher level of complete treatment, a reduction of second procedure rate and a decrease of postoperative intra-uterine adhesions by limitation of the operative field [5,11].

Aim of this study is to evaluate efficiency of operative hysteroscopy in RPOC. Secondary objectives include rate of intra-uterine adhesions, rate of subsequent pregnancy and time delay to pregnancy.

Methods

This retrospective unicentric study was performed in the gynaecologic unit of a teaching hospital. Women who underwent operative hysteroscopy for RPOC between January 2012 and March

* Corresponding author at: Service de Gynécologie Obstétrique, Hôpital Bicêtre, 78 avenue du General Leclerc, 94270, Le Kremlin Bicetre, France.
E-mail address: perrine.capmas@aphp.fr (P. Capmas).

http://dx.doi.org/10.1016/j.jogoh.2018.12.005
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2014 were included. Excluding criteria stand in performing both curettage and operative hysteroscopy during the same procedure.

Primary objective was assessment of efficiency of operative hysteroscopy defined by diagnosis hysteroscopy confirming complete treatment and secondary objective was intra-uterine adhesion rate and pregnancy rate after surgical procedure.

Diagnosis of RPOC was assessed by clinical examination, pelvic sonography and office hysteroscopy after a minimum period of 45 days [1,3]. Operative hysteroscopies were performed in operative rooms under locoregional or general anaesthesia. Women were in gynaecologic position and procedure was carried out after cervical dilatation using Hegar's candle, two Pozzi tenaculum and a speculum. A 9 mm resectoscope was employed and resection was realized as often as possible without energy in order to preserve endometrium and limit intrauterine adhesions. When energy was necessary, bipolar energy was used. Preferential distending medium used was physiological serum with a pressure between 70 and 150 mmHg. Pathological examination of resected tissue was fulfilled.

Postoperative office hysteroscopy was systematically prescribed 4–8 weeks following surgical procedure, which confirmed complete treatment and absence of intra-uterine adhesions. When office hysteroscopy concludes to abnormality (persistent trophoblastic retention or intra-uterine adhesions), a second operative procedure was performed. In these cases, March criteria were applied.

A distant phone survey was then performed to obtain information about subsequent pregnancy. Women were informed about the study by both a postal letter and a phone call in which patient's consent was accounted for. An ethical committee approbation was obtained: CEROG 2014-GYN-0208. Statistical analysis was performed using STATA software (STATA/SE 10.0, Stata Press, 204 Zachry Engineering center College Station, TX, 77843, USA). Results are reported as percentage and mean with 95% confidence interval [IC95%].

Results

One hundred fourteen (114) women undertook operative hysteroscopy for RPOC during the study period and were therefore included in the study. Mean age was 33.5 [31.7–35.2] years old with a rate of previous pregnancy of 2.82 [2.50–3.16] and previous deliveries of 1.41 [1.14–1.68]. Preoperative sonography and office hysteroscopy identified mean size of RPOC of 22 [19–25] mm. Mean times from end of the pregnancy to operative hysteroscopy was 109 [70–149] days. These results are presented in Table 1.

RPOC were revealed in most of cases by abnormal bleeding (76% of cases) ; others symptoms included amenorrhea, pain, infectious (endometritis) or others. These results are presented in Fig. 1. Diagnosis was confirmed by pathological exam in 100 women out of 103 (97%). Myoma was differential diagnosis for the 3 other women. For 11 women, there was no pathological exam (9.7%).

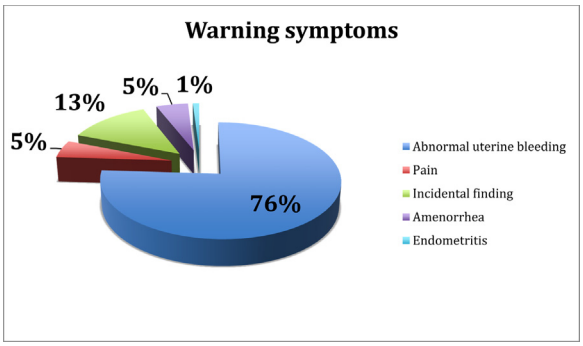

Fig. 1. Warning symptoms.

RPOC occurred mostly after medical therapy for first trimester miscarriage (23%) and vaginal birth delivery (17%), as they are the most frequent providers. These results are reported in Fig. 2.

Twenty-nine women (25.4%) were excluded: 3 because of a misdiagnosis (myoma instead of RPOC) and 26 were lost to follow-up and did not honour their appointment for postoperative office hysteroscopy. Thirty-two women out of the 85 others did not have office hysteroscopy. There was no significant difference for age, size of the retention, time until diagnosis of retention and achieving of pregnancy between women who honor their appointment for diagnosis hysteroscopy and the ones who didn't. Fifty-three (46.5%) women had a postoperative office hysteroscopy and 5 of them showed persistent RPOC (9%). Operative hysteroscopy then totally removed RPOC in 91% of cases of women with a diagnosis hysteroscopy. These results are presented in the flow chart in Fig. 3.

Out of the 53 women who had office hysteroscopy, 4 (7.5%) women presented synechiae. Three of them were type 1 synechiae according to March's criteria described as velamentous and one of them had complex isthmic synechiae (type 2 of March criteria).

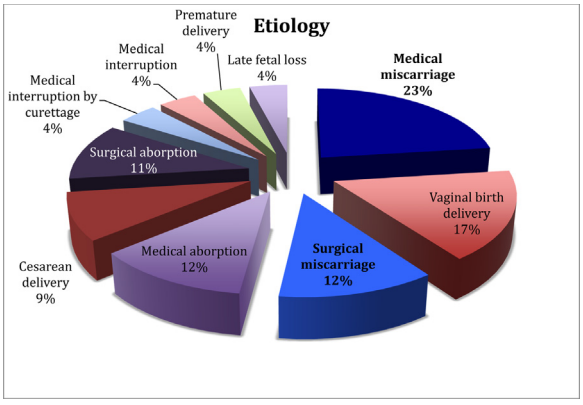

Fig. 2. Etiology of retained product of conception.

Table 1
Pre and post-operative characteristics.

Preoperative characteristics (n=114)	Mean	IC 95%
Age(years)	33.5	31.7-35.2
Number of previous pregnancy	2.82	2.50-3.16
Number of previous delivery	1.41	1.14-1.68
Time between end of the pregnancy and operative hysteroscopy (days)	109	70-149
Size of the retained product of conception (RPOC) (mm)	22	19-25

Post-operative characteristics (n=85)	N	Rate
Complete removal of RPOC	80	94.1%
Postoperative office hysteroscopy	53	46.5%

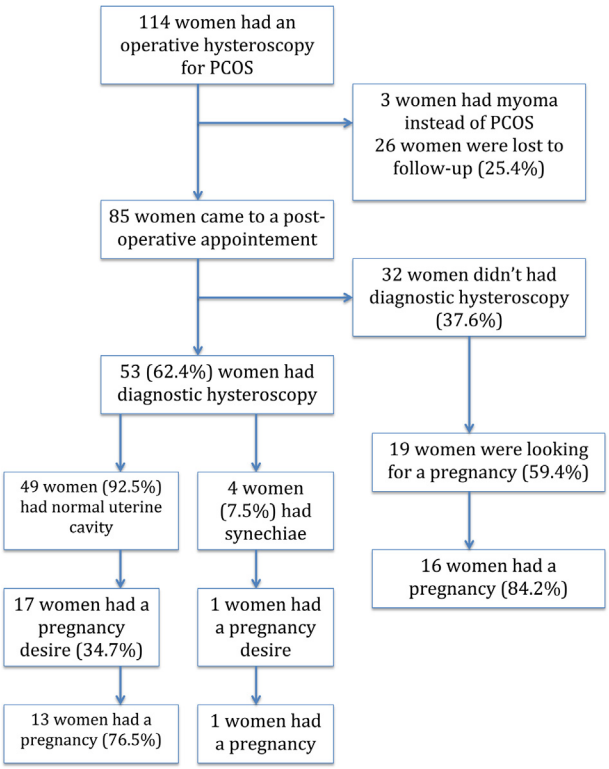

Fig. 3. Flow chart.

For subsequent fertility, 36 women out of 84 (42.9%) desired another pregnancy. Thirty of them obtained a pregnancy (83%) in a mean time of 224 [121–322] days. Pregnancy outcomes are 17 vaginal birth deliveries (57%), 8 caesarean section (27%) and 5 miscarriages (17%). For the 6 women with a pregnancy desire who did not achieve pregnancy, the follow-up time was shorter than a year.

There was no significant difference in the issue or pregnancy between the women who had the office hysteroscopy control and the ones who did not have it. The rate of miscarriage was 12.5% (2/16) in women who didn't attempt the postoperative hysteroscopy. There was no placentation abnormality in the reported pregnancy.

Discussion

Operative hysteroscopy seems like a valid alternative for the management of RPOC. Efficiency in this study is 91% in women with a diagnosis hysteroscopy and led to few complications such as intra-uterine adhesions (7,5%). Subsequent pregnancy rate is 83% of women with a pregnancy desire in a short mean time (around 8 months).

Published studies about operative hysteroscopy for RPOC show similar results with a success rate around 95% [4,12–14]. Golan et al. reported 159 women with a 100% rate of normal menses after hysteroscopy procedure but in this study only 21 women (13%) had a postoperative office hysteroscopy (normal in 100% of cases) [13]. Goldenberg et al. also published a 100% success rate of office hysteroscopy for RPOC in 18 women [14]. On the opposite, Hrazdirova et al. found that a second operative procedure was necessary for 644% of the 45 women included [15].

For subsequent fertility, published studies also found that operative hysteroscopy led higher rate of spontaneous pregnancy (69–92%) within a short mean time of conception [6]. Golan et al. reported a 82% rate of pregnancy in 28 women with a 75% rate of "take home baby"(13). Cohen et al. also reported a 82% rate of pregnancy [5]. These results are reported in Table 2.

As previously mention, gold standard for RPOC is currently uterine curettage nevermind higher risk of complications such as intra-uterine adhesions and endometritis mainly. Two studies compared operative hysteroscopy to uterine curettage and reported a longer mean time for pregnancy after uterine curettage; 12.9 versus 7.4 months for Ben-Ami et al. and 11 months versus 7.3 months for Cohen et al. [5,16]. The present study reported the same mean time for subsequent pregnancy after operative hysteroscopy.

Rate of intra-uterine adhesions after uterine curettage has been evaluated from 17 to 30% [6]. It increases with the number of previous curettage. Friedler and al. found a 16.3% synechiae rate after a single curettage. This rate increases up to 32% after three procedures (including more than 50% of complex synechiae) [9]. Romer et al. also reported a high rate of intra-uterine adhesions after multiple procedures (47.6%) [17]. In a literature review, a rate of 22.4% of intra-uterine synechiae was reported significantly different after dilatation –curetage (30%) compared to operative hysteroscopy (13%) [6]. The rate of intra-uterine adhesions is lower in the presented study. However, the risk of intra-uterine adhesions is real and probably justifies indication of office hysteroscopy 4 to 6 weeks after operative hysteroscopy to diagnosed and managed these intra-uterine adhesions. However, when an office hysteroscopy is proposed, like in the presented study, the rate of 38% of women who did not honour their appointment out of the lost to follow-up women. This rate is high even if it is lower than the 49.7% rate reported in another study [18] and might be the result of an apprehension of women about office hysteroscopy.

Rein et al. compared dilatation curettage to hysteroscopic resection for residual trophoblastic tissue in two centres, which evaluated intrauterine adhesions rate. Hysteroscopic led to significantly less intrauterine adhesions (4.2%) compared to curettage (30.8%). Rate of conception was also improved after hysteroscopic resection (68.8% versus 59.9%) and lower mean time to obtain pregnancy (11.5 months versus 14.5 months) [11]. Operative hysteroscopy seems to reduce rate of intra-uterine adhesions. However there is no prospective comparative study between office hysteroscopy and uterine curettage. Published synechiae rate after office hysteroscopy for RPOC are from 0 to 9.1%. Faivre et al. reported a 9% synechiae rate (2 women out of the 22 with office hysteroscopy) (12). This rate is similar to the one reported in this study.

Table 2
Comparison with published results.

	n	Efficacy	Pregnancy desire	Pregnancy rate	Mean time	Office hysteroscopy	Synechiae
Goldenberg et al. [14]	18	100%	–	–	–	5 (27.8%)	0 (0%)
Cohen et al. [5]	46	100%	17	14 (82%)	7.3 +/- 6.7		
Faivre et al. [12]	50	98%	30	23 (77%)	–	22 (44%)	2 (9.1%)
Golan et al. [13]	159	100%	28	23 (82%)		21 (132%)	0 (0%)
Rein et al. [11]	53	100%	45	31 (69%)	27 months [7-39]	48 (90.6%)	2 (4.2%)
Presented study	114	94,1%	36	30 (83%)	7.3 months [4.0-10.6]	53 (46.5%)	4 (7.5%)

Another important argument in favour of operative hysteroscopy to treat RPOC is peroperative finding of uterine malformation. In this study, no uterine malformation was reported but Faivre et al. reported a 10% uterine malformation rate discovered during procedure in their series [12]. A uterine septum should even be treated during the same procedure.

Strength of this study is its size with only one other study with a higher number of women with a postoperative office hysteroscopy and a systematic review that includes more women but with more heterogeneity compared to a unique center study (6,18)

(REF). There is however limits to this study; first of all, the retrospective character of the study but also the absence of comparative group with uterine curettage. A prospective randomized trial is performed and should allow definitive conclusions about the interest of operative hysteroscopy for RPOC [19].

Conflict of interest

None

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