

## ROLE OF HYSTEROSCOPY IN THE MANAGEMENT OF SECONDARY POSTPARTUM HAEMORRHAGE

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### ABSTRACT

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#### INTRODUCTION

Secondary postpartum haemorrhage [PPH] or puerperal haemorrhage, though rare can sometimes cause severe morbidity needing prolonged hospitalisation. Majority of the cases can be managed medically, a few of them requiring surgical interventions. With retained placental tissue being a common cause, emptying the uterus in the puerperium can be difficult and dangerous too as the wall is soft and perforation chances are high. Hysteroscopic evaluation of the puerperal uterus gives us a better picture of the retained bits of placental tissue, and helps in complete evacuation of the tissue without causing much trauma to the fragile uterine wall. It is also more specific than ultrasonogram [USG] to rule out the presence of retained tissue.

#### MATERIAL AND METHODS

17 patients who had secondary PPH and did not respond to the initial medical management were included in the study. Hysteroscopy was done in these cases. Definitive pathology was found in 12 cases; 7 cases had polypoidal tissue [retained bits of placenta], 3 cases had placental tissue adherent to the caesarean scar [placenta accreta] and 2 cases had submucous fibroids.

#### RESULTS

In cases which had retained placental bits, the tissue could be visualised, its exact location noted and the entire tissue could be removed without inciting much trauma to the uterine wall. In cases with placenta accreta, gentle extraction of the adherent tissue could be done without traumatising the scar. In one case which had multiple fibroids with irregular uterine cavity, hysteroscopy helped in localising the retained tissue.

#### CONCLUSION

Hysteroscopy is a useful modality in managing cases of secondary PPH, who have persistent bleeding in the postpartum period.

#### KEYWORDS

Secondary PPH, Retained placenta, Placenta accreta, Hysteroscopy.

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**INTRODUCTION:** Secondary postpartum haemorrhage is vaginal bleeding between 48 hours and 6 weeks after delivery, usually between 6 and 14 days. It is a major cause of maternal morbidity and potential mortality.<sup>[1,2]</sup>

Incidence: 0.47% to 1.44%.<sup>[3]</sup> Lee, Madrazo et al have quoted the incidence to be less than 1%.<sup>[4]</sup>

Unlike the definition of primary PPH, there is no clear or standard definition for quantity of the blood loss associated with secondary PPH. It is a clinical diagnosis of exclusion, generally presenting as abrupt onset of heavy, sometimes massive {>10% of total blood volume} bleeding 7 to 14 days after delivery.<sup>[1]</sup>

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Majority of cases are associated with minor morbidities, but may still require re-admission to hospital, use of antibiotics and surgical intervention. In more extreme cases, major morbidity may require hysterectomy, arterial ligation or radiological intervention.

Secondary PPH can be due to subinvolution or uterine atony that can be due to infection, inflammation [endometritis] or retained placental tissue.<sup>[5]</sup> Subinvolution would seem to be the consequence of failure of obliteration of the vessels underlying the placental site; its mechanism is poorly understood.<sup>[6]</sup> Placental abnormalities like accreta, increta and percreta, which cause massive primary PPH, when managed conservatively may result in secondary PPH, with placental tissue left in situ. Women suffering delayed PPH frequently have retained placental fragments, especially if the bleeding is heavy. This group was noted to have had an increased incidence, in prior pregnancies, of complications, which might reflect aberrant maternal-trophoblastic interaction, such as preeclampsia, intrauterine

growth retardation, spontaneous abortion or retained placenta.<sup>[7,8]</sup> Fibroids, vascular abnormalities like A-V malformations and rarely, haemorrhagic disorders such as von Willebrand disease, carriers of haemophilia A&B are at increased risk of PPH.

Management aims at providing basic resuscitation to establish the cause for bleeding and tailor the treatment according to the cause.

**AIM OF THE STUDY:** Few women with delayed haemorrhage are found to have retained placental fragments. [Williams Obstetrics,<sup>9</sup>]. Therefore, routine curettage in every case of secondary PPH is not recommended. [Lee. 1981]. Another concern is that curettage may worsen bleeding by avulsing part of the implantation site. Ultrasound examination of nearly all postpartum uteri will show high-level echoes in the endometrial cavity because of retained clot and placental fragments; an endometrial diameter up to 2 cm is probably normal. Inexperienced sonographers often report such clot as retained product of conception leading to an unnecessary evacuation of the uterus with all its attendant risks.<sup>[10]</sup> Hence we thought of subjecting cases with delayed haemorrhage to hysteroscopic examination for a better diagnosis of the cause of bleeding.

**MATERIAL AND METHODS:** We conducted a retrospective study on patients who had secondary postpartum haemorrhage. 28 patients were admitted with secondary PPH between October 2014 and December 2015 [14 months]. All these cases were subjected to initial evaluation including ultrasound examination. Medical management with antibiotics and uterotonics was carried out as the first line of management. 11 patients [39.2%] responded to medical treatment and bleeding gradually subsided. 17 patients [60.7%] had persistent bleeding. Hysteroscopic evaluation was done in all these cases except one.

**Patient Criteria:** Only those cases who did not respond to medical management were selected.

Total number of cases with secondary PPH {failed medical management} were 17. Seven [41%] cases were referred from outside; 11 [64%] patients had fullterm normal delivery; 06 [35%] underwent lower segment caesarean section [LSCS] and 1 [5.8%] had preterm delivery. [Table 1]

Onset of bleeding was within 1 week in 6 [35%] patients whereas in 10 [63%] patients, onset of bleeding was after 1 week.

Parity index was 2[11%] for primigravidae and 15[88%] for multigravidae.

Mode of delivery	No. of cases	Percentage
FTND	11	64%
LSCS	06	35%
Preterm delivery	1	5.8%

**Table 1**

Most of the cases had fullterm normal delivery.

**Procedure:** Ultrasound pelvis with Doppler study was done in all patients to detect any intrauterine pathology, and to rule out A-V malformation. Findings on USG - retained products of conception was reported in 14 out of 17 cases, one case had A-V malformation. All patients except the one with A-V malformation were subjected to hysteroscopy, under GA.

Uterine cavity was inspected for any retained placental tissue, exact location of the tissue, any bleeding from scar site in cases of LSCS. The retained tissue was removed with an ovum forceps gently and blunt curettage was done as and when required. Hysteroscope was reintroduced to confirm that the tissue was removed completely.

On hysteroscopy - we found retained bits of placental tissue, forming polypoidal mass in 7 [41.17%] cases, placenta accreta with retained placenta over scar in 3 [17.64%] cases, submucous fibroid in 2 [11.76%] cases, no pathology in 4 [23.52%] cases, and A-V malformation in 1 case [hysteroscopy not done]. [Table 2]

Hysteroscopic findings	No. of cases	Percentage
Retained bits of placental tissue forming polypoidal mass	7	41.17%
Placenta accreta with placenta adherent to scar	3	17.64%
Submucous fibroid	2	11.76%
No pathology	4	23.52%
A-V malformation	1	

**Table 2**

Findings at hysteroscopy.

Difficulties were encountered during the procedure such as – difficulty in distension of uterus as the size of the uterus was bigger; backflow was more; time taken to distend the cavity was much longer and picture quality was not satisfactory due to persistent bleeding.

**RESULTS:** In the 7 cases which had polypoidal growth of retained placental tissue, bleeding was completely controlled after removal of the tissue. In 3 cases of placenta accreta, moderate-to-severe amount of bleeding was encountered while removing the retained placental bits; however, bleeding could be controlled with medical management, and a recheck hysteroscopy was done to check if the tissue was completely removed. In cases with submucous fibroids, conservative management was done medically, and the patients were kept under close followup. Hysteroscopy did not show any pathology in 4 cases, bleeding subsided after giving higher antibiotics and other uterotonics. [cause being infection]. In 1 case, A-V malformation was diagnosed on Doppler ultrasound. When patient did not respond to medical management, internal iliac artery ligation was done successfully.

Difficulties were encountered in 2 cases; P2L2 with 2-previous LSCS [done outside], presented with bleeding per vagina 2 weeks after surgery. Hysteroscopy revealed a polypoidal tissue adherent to the anterior uterine wall close to the scar. Removal of the tissue induced heavy bleeding. Slow, gentle curettage with blunt curette helped in evacuating the tissue completely and bleeding was controlled. A 19-year-old P0, A1, with multiple fibroids, aborted at 20 weeks [outside] was referred with retained placenta. USG showed placenta in the fundal region. Blind evacuation failed in placental removal. Hysteroscopy was done to note the exact location of placenta and the retained tissue was evacuated. Repeat USG showed retained products, patient was kept under followup and a repeat hysteroscopy was done after 2 months.

**DISCUSSION:** Literature shows that 95% of women with secondary PPH present within the first month after delivery; 19% within 7 days, 41% within 8-14 days, 23% in 15-21 days, and 12% in 22-28 days.<sup>[3]</sup> The overdiagnosis of retained placental tissue on USG may lead to unnecessary surgical interventions and its potential complications. In our study, USG showed retained products of conception in 14 cases; however, hysteroscopy showed retained tissue in only 10 cases. However, USG has a good negative predictive value and is helpful in excluding a diagnosis of retained placental tissue. Neil and colleagues assessed 53 women undergoing USG for secondary PPH. In their study, the positive predictive value was 46% and negative predictive value was 96%.<sup>[11]</sup> The use of colour Doppler helps to improve diagnostic accuracy in differentiating clot and tissue, also to rule out A-V malformation.

Management of secondary PPH includes uterotonic drugs, antibiotics; if bleeding persists, surgical evacuation becomes necessary. There is no clear evidence to support which method of evacuation should be done. Manual removal, use of suction catheter and sharp curette have all been described. The risk of uterine perforation is much higher in postpartum uterine evacuation and may be further increased if associated with endometritis. Hoveyda and colleagues describe uterine perforation in 3 out of 85 women undergoing evacuation for secondary PPH.<sup>[12]</sup> In our study, hysteroscopic visualisation helped in complete removal of the tissue, without any incidence of perforation. Blind curettage may worsen the haemorrhage by traumatising the implantation site, inciting more haemorrhage. This is especially true in cases of accreta, which were managed conservatively leaving behind the adherent placental tissue. A study by Lee and associates {1981} has shown the incidence of secondary PPH as 0.7%. In their study, majority of patients on USG did not have retained placental tissue. They do not recommend blind curettage in all cases of secondary PPH.<sup>[13]</sup>

Cooper BC, Hatfield JL, Brumsted JR<sup>[14]</sup> have reported two women who had spontaneous vaginal delivery, developed delayed PPH. Suction curettage with USG guidance was done, but both had persistent products of conception. Subsequently, hysteroscopic resection of the

retained placental tissue was done with complete resolution of their symptoms. They have concluded that hysteroscopic resection is a conservative therapeutic option for placenta accreta in stable patients. We had similar experience in a case with multiple fibroids with irregular uterine cavity, hysteroscopy had to be repeated for complete removal of the tissue.

In our study, we found that hysteroscopic examination of stable patients with persistent bleeding following delivery had several advantages:- it gave a definitive diagnosis of retained tissue, also its exact location, so that the tissue could be removed gently without traumatising the other areas of uterine lining, like the scar; if there was no retained tissue, conservative management could be continued more confidently. Submucous fibroids could be diagnosed, and the retained placental tissue could be more easily located in spite of the uterine cavity being distorted. Bilateral uterine artery embolisation is another means to control secondary PPH. Pelage and colleagues studied 14 women presenting with uncontrollable PPH, at a mean of 16 days after delivery.<sup>[15]</sup> Pledgets of absorbable gelatin sponge were introduced to embolise the uterine arteries bilaterally in 12 cases. Unilateral embolisation of a false aneurysm and an arteriovenous fistula was performed for the other two women. In our study, one case had A-V malformation, as we did not have the facilities for embolisation, bilateral internal iliac artery ligation was done on her. Bleeding was successfully controlled.

**Way Forward:** Ultrasound with Doppler study still stands tall as a first line of investigation in diagnosing the causes of PPH. In patients with persistent bleeding or with persistent retained tissue, hysteroscopic evaluation helps in giving a definitive treatment. It also avoids unnecessary curettage in patients with no retained tissue.

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