

## Secondary Postpartum Hemorrhage

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**OBJECTIVES** – To assess the incidence, clinical features, investigations and management of secondary postpartum hemorrhage (PPH). **METHODS** – A retrospective analysis of 31 cases who presented with secondary PPH was carried out. **RESULTS** – The incidence of secondary PPH was 1.67%. Three of these women also had primary PPH due to atonic uterus. In 45.2% of cases secondary PPH occurred during the second postpartum week. Sonography findings were suggestive of retained products of conception in 27 cases. Thirtyfive percent of women responded to conservative line of management and 65% required surgical evacuation. Only in 40% of cases, the ultrasound diagnosis of retained products was confirmed by histology. **CONCLUSION** - Role of ultrasound is debatable. Unnecessary operative procedures on the puerperal uterus should be avoided. Curettage material should be sent for histopathology

**Key words :** ssecondary postpartum puerperal hemorrhage

### Introduction

Secondary postpartum hemorrhage (PPH) is defined as excessive bleeding from the uterus occurring 24 hours to 6 weeks after delivery. In the diagnosis of secondary PPH, there is no quantifying factor in the amount of blood loss and it is a subjective impression of an increase in the amount of bleeding after 24 hours following delivery. The common causes of secondary PPH include retained products of conception and / or infection<sup>1</sup> and rarer causes include infection and dehiscence of cesarean section scar, choriocarcinoma and hematological disorders such as thrombocytopenia and Von Willebrand's disease. In the present day practice ultrasound is being routinely used in the diagnosis of retained products of conception. However its use in PPH is controversial as the organized blood clots and decidua are difficult to distinguish from retained products.

This study was undertaken to assess the incidence of secondary PPH and to analyse the clinical features, bacteriological and ultrasonic investigations and management of 31 cases who presented with secondary PPH in a District General Hospital in UK.

### Materials and Methods

Thirty one cases presented between June 1997 and May 1998 with secondary PPH. During the above period, there

were 1852 deliveries. The records of these 31 patients were analyzed with regards to antenatal and labor profile, investigations and management. The predictability of obstetric events and investigations in diagnosing retained products was also studied, using 't' test, for statistical analysis.

### Results

The incidence of secondary PPH in this study was 1.67%. There were 10 (32%) primiparas and 21 (68%) multiparas; the mean age was 27 years and 5 months.

There was a previous history of miscarriage in seven cases (22%) and of termination of pregnancy in five cases (16%). A history of primary PPH in previous pregnancies was present in two women. Antenatal problems such as preeclampsia, IUGR, APH, multiple pregnancy and diabetes were seen in seven cases (22%).

Thirty women (96.7%) delivered between 37 and 42 weeks of gestation and one woman had pre-term delivery at 36 weeks. Twenty five (80.5%) women had a normal vaginal delivery, two (6.5%) were delivered by ventouse and four (13%) by cesarean section. Of the 27 cases who had vaginal delivery, placenta was removed by controlled cord traction in 26 cases and one case needed manual removal of placenta under anesthesia. Placenta was reported as complete in all the 31 cases, however, the membranes appeared ragged and incomplete in four cases. Three women had had primary PPH due to atonic uterus. When they presented with secondary PPH, one was managed conservatively and two required surgical evacuation, and the presence of placental tissue was confirmed histologically in both these cases.

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In six cases (19.4%) secondary PPH occurred during the first week, in 14 (45.2%) during the second week, in two (6.4%) during the third week, in two (6.4%) during the fourth week and in seven (22.8%) during the sixth week (Table I). Of the four women who underwent cesarean section, in three secondary PPH occurred in the sixth week and sonography revealed retained products in two of these. One of them was managed conservatively. The other was taken for surgical evacuation but the procedure was abandoned as there was suspicion of perforation of the uterus.

High vaginal swab and full blood count were carried out in all the 31 patients and there was evidence of infection in seven and all of them were positive for anaerobes. While awaiting the culture result, all were given either amoxicillin with clavulanic acid (augmentin) or cephelexin and metronidazole. Ultrasound scanning was carried out on all women. In four cases, scan did not show evidence of retained products. Therefore, they were managed conservatively with antibiotics and oxytocics. Sonography findings were suggestive of retained products in 27 cases (87%). Treatment options were discussed with these women and 16 of them opted to have conservative management, of which seven responded well. The other nine continued to bleed and therefore surgical evacuation was carried out subsequently. Eleven patients opted for surgical evacuation at the first instance. Of the 20 cases who had surgical evacuation, there was histological evidence of placental tissue in only eight (40%). Others were reported as degenerative decidua or endometritis or organized clots (Table II). The overall management outcome was that 35% responded to conservative management and 65% required surgical evacuation. No major postoperative complications were seen in this small series. Four patients (13%) necessitated blood transfusion because of heavy bleeding either before or at the time of evacuation. A correlation was attempted between the histological diagnosis of retained products and the clinical features and investigative measures that were carried out (Table III). In three patients who had primary PPH, evacuation was carried out in two cases and retained products were confirmed in both these cases (100%). Of the seven cases who were positive for infection, the incidence of retained products in the curettage examined was 50% and it was 39% when there was no evidence of infection. The incidence of retained products was 42% when the membranes were reported complete and was nil when the membranes were reported incomplete. (Table III)

Table I : Day of onset of bleeding

Days	No.	%
4-7	6	19.4
8 - 14	14	45.2
15 - 21	2	6.5
22 - 28	2	6.5
29 - 35	0	0
36 - 42	7	22.5

Table II : Correlation between sonography findings and histology

Sonography	Retained products seen on histology			
	Yes		No	
	No.	%	No.	%
Retained Products seen in 20	8	40%	12	60%

Table III : Correlation between clinical and bacteriological features and histology

Clinical Features	No.	Management		Retained Products Present	Incidence of Retain Products
		Conser-vative	Evacua-tion of uterus		
<b>Blood Loss</b>					
>500 ML	3	1	2	2	100%
<500 ML	28	10	18	6	33%
<b>Membranes</b>					
Incomplete	4	3	1	0	0%
Complete	27	8	19	8	42%
<b>Puerperal Morbidity</b>					
Yes	3	1	2	1	50%
No	28	10	18	7	39%
<b>Culture</b>					
Positive	7	1	6	3	50%
Negative	23	10	13	4	31%

These findings were not significant on statistical analysis.

### Discussion

The incidence of secondary PPH in our study was 1.67%. The study by Rome<sup>2</sup> showed an incidence of 1.29% and Hoveyda and Mackenzie<sup>3</sup> reported an incidence of 0.8%. There are no definitive risk factors that could predict the presence of retained products and secondary PPH. Study by Rome<sup>2</sup> showed a positive correlation between puerperal morbidity and primary PPH with the presence of retained products. However King et al<sup>4</sup> studied 83 patients with secondary PPH and did not identify any predictive antenatal or obstetric factors. Recent study by Hoveyde and Mackenzie<sup>3</sup> showed a seven fold increased rate with a history of primary PPH and a four fold increased rate with a history of manual removal of a retained placenta. In our analysis, though primary PPH showed a positive correlation with secondary PPH, this was not statistically significant, because of small numbers.

The use of ultrasound in diagnosing the cause of PPH is controversial as organized clots are difficult to differentiate from the retained products. In our analysis, only in 40% of cases the ultrasound diagnosis of retained products was confirmed by histology. Our experience was similar to that of King et al<sup>4</sup> and Hoveyda and Mackenzie<sup>3</sup>. In a study by Malvern et al<sup>5</sup>, the false positive result in the diagnosis of retained products was 17% and, the false negative result was 1.7%; the ultrasound was more accurate in excluding the retained products of conception. The management of secondary PPH is a clinical dilemma. In our study, retained products were seen only in 8 of the 20 cases who had surgical evacuation. The risk of operative morbidity such as perforation of the uterus and severe hemorrhage associated with the surgical procedure cannot be ignored. Because of these risks, patients presenting with mild bleeding should be treated conservatively with oxytocics and antibiotics. Only if the bleeding persists inspite of conservative management or if there is heavy bleeding, surgical evacuation should be carried out. Caution should be exercised in the management of secondary

PPH following cesarean section. These cases are unlikely to be associated with retained products and the operative procedure on the uterus may be dangerous. In cases where heavy bleeding occurs 2-3 weeks following cesarean section, either non-healing of the uterine incision or dehiscence of the scar following infection should be thought of<sup>6</sup>.

Though the incidence of secondary PPH is low, it is one of the causes of maternal morbidity. As there seem to be no definite risk factors to identify retained products and the rate of false positive diagnosis with sonography is high, management should probably be guided by the clinical presentation. Unnecessary operative procedure on the puerperal uterus should be avoided and caution should be taken in managing cases following cesarean section. It is important that all curettage should be sent for histology to pick up an occasional case of choriocarcinoma.

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