Case Report:
Uterovaginal Packing with Rolled Gauze in Postpartum Hemorrhage

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Abstract
Management options for postpartum hemorrhage (PPH) include oxytocics, prostaglandins, genital tract exploration, ligation or angiographic embolization of uterine/internal iliac arteries and hysterectomy. After excluding uterine rupture, genital tract lacerations and retained placental tissue, efforts are directed toward contracting the uterus by bimanual compression and oxytocics. If these are not successful, one must resort to surgical techniques. At this stage, an alternative option to remember is uterovaginal packing. Easy and quick to perform, it may be used to control bleeding by tamponade effect and stabilize the patient until a surgical procedure is arranged. Uterovaginal packing may sometimes obviate the need for surgery altogether. Two cases, a primary and a secondary PPH, managed recently with uterovaginal packing are reported. Despite concerns about concealed hemorrhage or the development of infection with this intervention, none of these problems were encountered and uterine packing was successful even in the case of secondary PPH with documented infection.

Key Words: Uterovaginal packing – Rolled gauze – Postpartum haemorrhage.

Case Report

Case 1:
A 25-year-old primipara attended this hospital with PPH after vaginal delivery of a 2-kg boy at another hospital 2 hours prior to presentation. The placenta had been delivered by controlled cord traction. She was pale (hemoglobin 5.2g/dL) and had tachycardia and hypotension (blood pressure 80/60; pulse 140/min). The uterus was 16 weeks size, not well retracted and the patient was bleeding continuously. Examination under anesthesia revealed partial uterine inversion. After manual reposition, the uterus remained atonic and bleeding continued despite administration of bimanual compression, oxytocin, ergometrine and prostaglandins. Tight uterovaginal packing was done with packing forceps using 6 units of povidone-iodine-soaked rolled gauze (knotted end to end). The rolled gauze was fashioned from a rolled bandage 10cm wide and 4 meters long, which was folded lengthwise 4 times. Bleeding stopped and the patient became hemodynamically stable. She received 5 units of blood transfusion and broad-spectrum antibiotics. Oxytocin infusion was continued for 12 hours. The pack was removed uneventfully 36 hours later. Cultures sent from the uterine cavity at the time of packing grew Escherichia coli with sensitivity to cefotaxime and amikacin, which she had been receiving. She remained afebrile and was discharged 7 days later.

Case 2:
A 27-year-old, Para 2, attended this hospital 40 days after elective cesarean with secondary PPH. During cesarean (at another hospital), the placenta was found adherent and was removed only partially. She had been readmitted to that same hospital with PPH and fever 10 days before presentation to us. There she had received blood transfusion (4 units), oxytocics and antibiotics. Because her condition did not improve, she was referred to our institution. On admission, she was pale (hemoglobin 7.3g/dL) and febrile (39°C), but hemodynamically stable (blood pressure 110/80; pulse 110/min). Her abdomen was soft and the incision had healed. The uterus was subinvovled (16 week’s size), the cervix was 2cm dilated, and placental tissue was extruding from it. Significant vaginal bleeding was present. Broad-spectrum antibiotics were started. The uterus was evacuated under anesthesia, and about 100g of placental tissue was removed. Despite administration of oxytocics and prostaglandins, bleeding continued. Tight uterovaginal packing using 3 units of povidone-iodine-soaked rolled gauze successfully controlled the bleeding. Four units of blood were
transfused during and after the procedure. The pack was removed uneventfully 44 hours later. Placental culture grew anaerobic bacteria. She became afebrile after 5 days and was discharged after 10 days.

**Discussion**

Uterovaginal packing for PPH was frequently practiced prior to the 1960s. Its use subsequently declined because of fear of infection and concealed hemorrhage, [1] although sporadic reports of its successful use have been published [2,3].

This modality is useful in controlling hemorrhage from uterine atony and placental site bleeding caused by placenta previa or placenta accreta [3]. Uterine atony unresponsive to oxytocics is the most common indication for its use [4]. Uterovaginal packing has also been used to gain time to stabilize the patient while arranging for a surgical procedure. In some of these situations, packing itself proved successful, thereby obviating the need for surgery [3].

Its foremost advantage is that it is very simple and quick to perform and requires no special equipment. Tight uniform packing of all areas of the uterine cavity has to be continued vaginally to the introitus in order to maintain a tamponade effect on the uterine sinuses and prevent concealed hemorrhage. In our first case, 6 units of rolled gauze were required because of a large immediate postpartum uterus, whereas in our second case with secondary PPH, 3 units of rolled gauze sufficed. If a correctly placed pack is unable to control hemorrhage, repacking is not advocated and other therapeutic options should be considered [5].

Other methods of uterine tamponade have been tried. The Sengstaken-Blakemore tube [6] has the advantage of being equipped with a drainage channel to prevent concealed hemorrhage. However, it may not always be available. A plastic parachute bag containing gauze soaked in povidone-iodine has been used for packing to prevent a potentially adherent material being placed directly in the uterine cavity [7]. Concerns have been raised that removal of an adherent pack may dislodge clots and restart bleeding, but this problem has not been encountered in practice [3] or in our 2 cases. Recently, tamponade with a condom catheter inflated with 250-500mL of saline has been demonstrated to be helpful in controlling PPH resulting from atony and adherent placenta [8].

Although a foreign body placed in the uterine cavity can act as a nidus for bacterial proliferation, there have been no reported cases of serious infections. The use of a foreign body as a uterine tamponade has been successfully accomplished in a case of PPH with endomyometritis [3]. Use of broad-spectrum antibiotics and removal of the pack within 24-36 hours are important measures to minimize infection, although packs have been removed as early as after 5 hours and as late as after 96 hours [3]. In the second case we report, pack removal was delayed to 44 hours so that it could be done in the morning hours. This did not result in increased infectious morbidity. Pelvic abscess has been reported in 1 patient with failed packing followed by hysterectomy. The abscess was subsequently treated with drainage [4]. In our second case, despite the patient having fever, uterovaginal packing did not worsen her condition. In the presence of infection, even laparotomy and hysterectomy may be followed by such complications as pelvic abscess and secondary hemorrhage.

Primary PPH is among the top 5 causes of maternal mortality in both developed and developing countries [9]. In a review of more than 2000 maternal deaths in the United States, Kaunitz and colleagues [10] reported that 13% were due to hemorrhage, one third of which were attributed to PPH. Of the estimated 600,000 maternal deaths each year, 95% occur in developing countries [11]. In developing countries such as India, where PPH continues to be responsible for a large number of maternal deaths, any simple intervention that can be readily performed to control bleeding by tamponade is crucial. Uterovaginal packing requires no special equipment or expertise to perform and should easily come to the mind of the obstetrician whenever he or she encounters the life-threatening situation of PPH.

In a recent review of obstetric records at the Children's Hospital of Buffalo, New York, 9 cases of uterine packing were reported over a 9-year period (5 during cesarean, 2 after vaginal delivery and 2 after dilatation and evacuation) [4]. Although the incidence of blood transfusion was not reduced, as 8/9 required transfusion and the average blood loss was 2200mL, packing was successful to stop the hemorrhage in 8/9 cases; in only 1 case, hemorrhage continued and a hysterectomy was done. Thus, uterine packing was associated with decreased incidence of hysterectomy. Although not much data on the incidence of blood transfusion are available, it was observed in a study of 9 cases of packing that patients for whom packing was either delayed or unsuccessful received more transfusions than patients who underwent early and...
successful packing [3]. Such reports give evidence that further study should be done on this procedure.

Every obstetrician should be familiar with this simple method, as it may prevent the need for hysterectomy and thus preserve reproductive capability, as well as diminish operative morbidity. After lacerations of the lower genital tract, uterine rupture and retained products have been ruled out, uterine packing should be considered as a presurgical management tool when medical therapy fails to control uterine hemorrhage. This procedure seems reasonable for the control of PPH, as successful outcomes have been reported for the majority of the more than 1000 reported cases of uterine packing for PPH [3]. Its added advantage is that the uterus is conserved.

Thus, uterine packing needs to be remembered as a management option before performing surgical procedures in PPH resulting from placental site bleeding or atony. It may control the problem completely or give time to organize a definitive procedure, which may include transportation to another center where embolization is available. Once packing has been accomplished, the need for another procedure has to be re-evaluated and then decided upon on the basis of the patient’s condition.

References


