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Case Report Open Access

Interest of the Pelvic Packing in Post-partum Haemorrhage Refractory to Hysterectomy

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Abstract

Post-partum haemorrhage is a serious complication of delivery involving maternal life prognosis. Haemostasis hysterectomy is often the ultimate solution of maternal rescue. However, in some situations, this bleeding persists despite the intervention. Thus, other techniques are used in particular pelvic packing. It is a simple technique which promises favourable results in some situations of persistent obstetrical bleeding. So, it constitutes a well alternative of other techniques such as vascular ligation and arterial embolization.

On the occasion of two new cases and a literature review, we will try to define the indications and limitations of pelvic packing in the management of severe postpartum bleeding; as well as its practicalities.

Keywords: Haemostasis hysterectomy; Post-partum haemorrhage; Pelvic packing; Maternal mortality

Introduction

Postpartum haemorrhage is the leading cause of mortality and maternal morbidity in Tunisia. It complicates 4-5% of births [1,2] and is often unpredictable [3]. The management of these haemorrhages is well codified. Thus, in case of failure of conservative treatment, the hysterectomy is the only and ultimate saving treatment. However, in some severe bleeding situations associated with coagulation disorders, hysterectomy is sometimes insufficient requiring the use of other techniques including pelvic packing. However, literature poverty about pelvic packing is the reason of a defect in the knowledge of this technique by obstetricians and consequently less operating in post-partum haemorrhage management.

Our objective is to evaluate the interest of the pelvic packing in the management of severe post-partum haemorrhage and to specify its indications, its limits and its complications through two new cases and a literature review.

Case 1

Mrs. Z.A, 39 years old, multiparous was referred to our department from a level 1 maternity for post-partum haemorrhage. The patient was unconscious, pale, pulse = 128, BP = 60/40, painful abdomen on palpation and abundant genital bleeding. The patient had been conditioned and biological tests including a blood group (GS), a blood count (CBC), prothrombin time (PT), a serum fibrin was practiced. The uterine revision revealed a uterine rupture. Under general anesthesia and intensive care, laparotomy was performed revealing a haemoperitoneum of 1L and a rupture of the right edge of the uterus, a retroperitoneal hematoma extending from the cecum to the renal space. Biology had objectified GS : B +, Hb = 5.3 g/ml, Plq = 47000 / ml, TP = 21% and serum fibrin = 1.09 g / l.

A hysterectomy with right oophorectomy was performed as well as an opening of the posterior parietal peritoneum with evacuation of the hematoma leaving a bloody bed. During surgery the patient received 6 pockets of red blood cells, 13 pockets of PFC, 8 platelet packs and 3 g of fibrinogen and a dose of active factor VII (new seven).

BP had been stabilized at 100/60, pulse = 120, and biological control was: Hb = 7.4 g/ml; TP = 31%, the serum fibrin =1.5 g / l.

In front of persistent bleeding at the retroperitoneal lodge and vaginal resection margin, rebel at any hemostatic gesture, we decided pelvic packing with multiple fields wrapped and placed in the pelvis and facing the renal space; as well as an installation of two intra-abdominal suction drains. The initial outcome was favourable. After 48 hours, it was found oliguria and elevated creatinine. An abdominal CT scan was performed did not show renal dilatation or intraperitoneal effusion with fields in place. All evokes an abdominal compartment syndrome. So we decided fields' extraction. The subsequent evolution was favourable. The patient left the hospital within 7 days.

Case 2

Ms. Z.O, 34 years old, 4th para was admitted for pelvic pain and blackish bleeding on a 34 weeks pregnancy. Clinical examination and ultrasound had concluded on a retro placental hematoma with fetal death in utero. Cesarean delivery for stagnation of dilatation was performed, extracting a stillborn male sex 2700 gr weight and presence of a hematoma of 500 gr, the uterus was hypotonic and blackish with heavy bleeding, biology had shown: Hb = 6 g/ml, PT = 21%, serum fibrin = 0.9 g / l. The patient had received a transfusion of 3 blood units and 7 pockets of PFC. After failure of medical and obstetrical means, a hysterectomy was performed. Haemostasis was considered good, and parietal closure was accomplished with suction red on.

The initial outcome was favourable. Eight hours later; it was noted hemodynamic instability with maternal agitation. The radon had brought 400 cc of blood. Biological control : TP = 20%, serum fibrin = 1.09 g / l. Revision surgery was performed and showed a diffuse bleeding from the vaginal resection margin and peritoneum with haemorrhagic

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intraperitoneal suffusions without obvious vascular bleeding justifying surgery. It was, therefore, conducted a pelvic packing. Multiple fields were wrapped in a large compress and buried in the pelvis with hermetic closure of the abdominal wall. During surgery the patient had received 4 bags of blood, 8 pockets of PFC, 3 g of fibrinogen with antibiotic coverage. The outcome was favourable with hemodynamic stabilization. Biology practiced at H5 showed: TP = 36%, Hb = 8.6 g/ml and serum fibrin = 1.87 g / l. Revision surgery was performed at H72 to remove the packing materials. The subsequent evolution was favourable, and the patient had left our department on the 8th day.

Comments

Post-partum haemorrhage has always been the concern of obstetricians and resuscitators who are sometimes faced with situations where the usual obstetrical and medical measures are exceeded as well as the conservative surgery. Thus, the hysterectomy finds its indication. However, massive bleeding associated with haemostasis disorders resist to this radical surgical alternative requiring the use of other techniques such as: arterial embolization, vascular ligation and pelvic packing.

Arterial embolization helps to develop a vascular mapping and objectify the causal lesion [4]. It is a quick procedure, which can be tried as conservative treatment. It may also be required after haemostasis hysterectomy for persistent bleeding [5]. Its efficiency is evaluated between 70% and 100% depending on the series [6,7]. It requires an effective radiological technical platform and the presence of a team of radiologists available and competent in the field of interventional arterial catheterization, thing we do not have.

Ligation of the internal iliac arteries seems to bring benefit to persistent bleeding after [8] haemostasis hysterectomy but it is only effective in bleeding of arterial origin especially decaying cervical-vaginal lesions, vaginal or pelvic thrombi. Moreover, it is a hard act, requiring some learning; and it does not seem to bring any significant benefit in the diffuse bleeding of venous origin or secondary to a haemostasis disorder [9]. Our two patients were operated in a context of DIC (disseminated intravascular coagulation) with bleeding tablecloth made of non-coagulated blood.

The pelvic packing is a technique that has been used for decades and this in the context of persistent bleeding from several sources: liver injury, liver rupture, gynecological and rectal cancer surgery [10,11]. There are many modalities of pelvic packing [9,12]. We provided a pelvic and abdominal-pelvic packing: fields folded and applied on bleeding surgical site particularly next to the vaginal section margin, para-rectal gutters according to the extent of the separation zones followed by a complete and hermetic closure of abdominal wall and webbing. Such a procedure increases the pressure and compression on intra-abdominal fields and therefore increases the chances of haemostasis, although some authors [13] recommend a partial closure of the abdominal wall to facilitate removal of the fields. Two suction drains are placed in intra-abdominal beside the buffered area. A strict monitoring of the hemodynamic status is essential to search possible complications including abdominal compartment syndrome. One of our patients presented this syndrome which justified the early withdrawal of fields. A broad-spectrum antibiotic prophylaxis should be initiated and continued after the removal of intra peritoneal fields to deal with infectious complications [11]. The withdrawal of fields was performed under general anaesthesia by a relaparotomy programmed within an average of forty-eight to seventy-two hours; time deemed necessary to stabilize the patient. However, a resumption of bleeding during fields' ablation requires a new packing.

The pelvic packing allows temporarily limiting of bleeding and loss of coagulation factors, which helps the resuscitator to restore blood volume and correct coagulation disorders [12]. The efficiency of packing depends on adequate medical resuscitation. Its morbidity seems acceptable. It is dominated by septic complications such as intra-abdominal abscesses, parietal abscesses, cutaneous and visceral fistulas. These complications are explained by the immune depression due to shock, poly transfusion and the presence of a foreign intra-abdominal body [10]. Other complications secondary to excessive pelvic compression such as peripheral neuropathy (shutter nerve, sciatic nerve), a lower vena cava syndrome, and obstructive acute renal failure [14] were described. In this perspective, ensuring haemostasis without compromising the function of other body systems and adjacent organs remains the challenge of this procedure of buffering which depends primarily on the ground, the technique used and the experience of surgeon.

Conclusion

The pelvic packing performed on time according to a well mastered technique, and in coordination with the efforts of resuscitators seems to be a life-saving technology and this in the context of severe post-partum haemorrhage accompanied by DIC; and persistent after haemostasis hysterectomy. Having a real benefit, this technique appears to have few complications.

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