

Utilização do *damage control* na abordagem da hemorragia pós-parto grave

Damage control in the management of massive postpartum hemorrhage

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RESUMO

Paciente de 36 anos de idade evoluiu com atonia uterina, sendo submetida a histerectomia subtotal e ligadura de artérias íliacas internas. O pós-operatório cursou com choque hemorrágico grave, acidose, hipotermia e coagulopatia. Foi necessária a realização de relaparotomia que mostrou 3 L de hemoperitônio e sangramento ativo no local da histerectomia. O sangramento foi controlado por tamponamento intra-abdominal e oclusão abdominal temporária. Após controle das condições fisiológicas da paciente, realizou-se relaparotomia para remoção do tamponamento abdominal e laparorrafia definitiva.

Palavras-chave: Histerectomia; Hemorragia Pós-Parto; Laparotomia.

ABSTRACT

A 36-year-old woman developed uterine atonia and was submitted to a subtotal hysterectomy and bilateral internal iliac artery ligation. At Intensive Care Unit the patient presented with a major hemorrhage shock, acidosis, hypothermia, and coagulopathy. A relaparotomy showed 3 L of hemoperitoneum and active bleeding from the hysterectomy site, which was controlled by intra-abdominal packing and temporary abdominal closure. After improvement of the patient's physiology, a planned re-operative procedure was performed to remove the packs and definitive abdominal closure.

Key words: *Hysterectomy; Postpartum Hemorrhage; Laparotomy*

INTRODUCTION

Postpartum haemorrhage remains a significant contributor to maternal morbidity and mortality. Prevention, early recognition and prompt appropriate intervention are the keys to minimizing its impact. In essence, damage control equates with abbreviated surgery and restoration of near normal physiology, in a staged approach to a life-threatening injury. This manuscript reports a case of a patient with massive PPH that was controlled using the damage control concept by surgical gauze packing of the pelvis and laparostomy.

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CASUISTIC AND CASE DESCRIPTION

A 36-year-old woman, presented in labor to the emergency unit of the Gynecology and Obstetrics Department at 38 weeks of pregnancy with breech presentation. Her obstetrical history obtained by anamnesis and her documents revealed a patient with a history of three pregnancies ended by Caesarean Section (CS). The patient's antenatal course revealed diagnosis of chronic hypertension and use of Methyl-dopa 500mg BID. The blood pressure measurement was 190/120 mm Hg. Vaginal examination revealed a closed cervix, no effacement or dilatation, and no bleeding or amniotic fluid leakage. Laboratory studies gave the following results: serum creatinine level 0.6 mg/dl; serum aspartate aminotransaminase (AST) level 40 U/L; uric acid level 6 mg/dL; hematocrit 35.2% and platelet count $173 \times 10^3/\text{mm}^3$. Catheterized urine showed no proteinuria.

RESULTS

A Caesarean Section, under spinal anesthesia, was carried out less than 60 minutes after admission. The placenta was strongly attached to the uterine wall. Manual removal with associated curettage was performed as attempt to extract the placenta. After the uterine incision was closed, no source of bleeding was found, and active bleeding had subsided. Blood loss was estimated to be about 800 ml and she was transferred to postanesthesia care unit. One hour later the uterus was noted to be lax with mild oozing per vaginum; the oxytocin infusion was increased to 20 units. Her vital signs were unstable and a laparotomy was immediately done under general anesthesia. At laparotomy, uterine atonia was diagnosed and a subtotal hysterectomy with bilateral internal iliac artery ligation was performed. At the end of surgery she had her vital signs stable and normal values of laboratory studies. The patient was transferred to the Intensive Care Unit (ICU) and 12 hours later presented with major hemorrhage shock (Hemoglobin 2.0 g/dl), acute renal failure (raise in creatinine level from 0,6 to 1.6 mg/dl), metabolic acidosis (pH 6.93; serum bicarbonate 5 Mmol/L; base excess -24 Mmol/L and lactate level 132 mg/dl), hypothermia (34.2°C at nasopharynx), diffuse coagulopathy (platelet count $24 \times 10^3/\text{mm}^3$; partial thromboplastin time showing nocoagulation and fibrinogen level 92 mg/dl) and

hiperkalemia (7.4 mEq/L). A relaparotomy was performed which evidenced a 3 L of hemoperitoneum and an active bleeding from the hysterectomy site. The pelvis was packed firmly with three large laparotomy packs followed by temporary abdominal closure with a Bogotá bag in fifty minutes of operative time (Fig. 1).

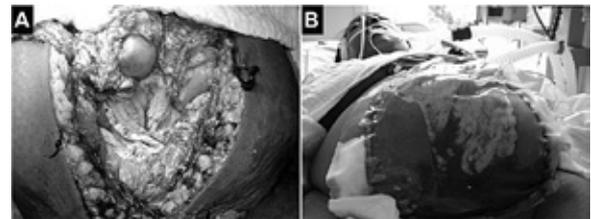


Figura 1 - Damage control in the management of a patient with massive post-partum hemorrhage. (A) Laparotomic view of the pelvis packed with three large laparotomy packs for rapid hemorrhage control. (B) Patient in ICU with temporary abdominal closure using a Bogotá bag.

She was submitted to massive volemic resuscitation with a total infusion of 10 units of packed red blood cells, 32 bags of platelets, 15 units of fresh frozen plasma, 17 L of crystalloids and 2 L of hydroxyethyl starch within 24h. The patient was rewarmed to 37°C in 4 h by maintaining room temperature at 28°C, infusion of warming fluids and the use of forced air warming device. A planned re-operative procedure was performed 48 hours later after improvement in temperature, base excess and coagulation profile. There was no active bleeding and the packs were removed. The abdomen was primarily closed with closed-suction drainage. The patient stayed at the intensive care unit for 3 days. Vital signs and results of laboratory studies improved, and the patient had no evidence of further intra-abdominal bleeding. She was discharged home on postoperative day 10 with her healthy baby. Both mother and baby remained well at follow-up.

DISCUSSION

The term “*damage control*” is an approach to patients with life-threatening injuries consisted by rapid surgical techniques to control of hemorrhage (intra-abdominal packing) and temporary abdominal clo-

sure. The patient is transferred to ICU addressing restoration of temperature, coagulation, perfusion and the ventilation. Removal of abdominal packs, definitive surgery and abdominal closure is performed after improvement the patient's physiology. The combination of hypothermia, coagulopathy, and acidosis is a syndrome that accelerates its effects in a cycle that is rapidly fatal unless interrupted.¹ The patients are more likely to die from this triad than from the failure in completing operative repairs.² The criteria in decision making for damage control are hypotension (BP <90 mmHg systolic), hypothermia (< 34.8°C), coagulopathy (partial thromboplastin time > 60 s) and acidosis (pH < 7.2 base excess < - 8).³ Simplicity is the key in damage control, when sometimes less is more.

CONCLUSION

The combination of hypothermia, coagulopathy and metabolic acidosis culminate in a fatal cycle when not interrupted. The "*damage control*" may represent a lifesaving measure in critical patients with critical severe postpartum hemorrhage.

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