Scholars Academic Journal of Pharmacy (SAJP) **ISSN 2320-4206 (Online)**
Sch. Acad. J. Pharm., 2015; 4(9): 405-407 **ISSN 2347-9531 (Print)**

(An International Publisher for Academic and Scientific Resources)
www.saspublisher.com

Research Article

Getting anesthetic management of splenectomy for hypersplenism at the University Hospital of the Aristide Le Dantec hospital

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Abstract: The hypersplénismes correspond to a syndrome characterized by the presence of splenomegaly and pancytopenia predominantly platelet lineage. It is associated with disorders of hemostasis. We conducted a prospective study on a year May 2014 to April 2015. It was conducted at the department of anesthesia resuscitation CHU Le Dantec. We included all patients undergoing hypersplenism. During the study period 4 patients were operated. There are two men and two women aged 35 and 67 years respectively, 34 and 20 years. We found lymphoma in a case and cirrhosis in the other three cases. Severe thrombocytopenia associated with hemostasis disorders was found in all cases. A transfusion of platelet concentrates, packed red blood cells and fresh frozen plasma was made to prepare for the intervention. All underwent general anesthesia. Hemorrhagic shock was noted in all patients. The postoperative complications were simple without postoperative noted. Hypersplenism associated with hemostasis disorders poses anesthetic management problems. All patients had significant hemostatic disorders associated with severe thrombocytopenia despite the correction preoperatively. Anesthesia of these patients imposes support measures hemorrhagic shock.
Keywords: Hypersplenism, anesthesia, splenectomy, thrombocytopenia.

INTRODUCTION

The hypersplenism are characterized by the presence of splenomegaly and cytopenias may affect one or more hematologic lineages. Splenomegaly is usually accompanied by an increase in platelet sequestration which is about 30% but can reach 90% in certain circumstances. The life span of platelets is not changed. Thrombocytopenia is often accompanied by leukopenia and anemia. It partners with hemostasis disorders which combines a low prothrombin and partial thromboplastin time of Activated elongated. Splenomegaly may be secondary to liver damage (cirrhosis with portal hypertension), infection, or myeloid lymphoproliferative disease or an inflammatory disease [1]. The anesthetic management requires a multidisciplinary collaboration: anesthesiologist, surgeon, hematologist, gastroenterologist. The objective of a patient care reaches thrombocytopenia is to assess the risk of bleeding if the act is programmed or not, and to detect the presence of hemostasis disorders associated (medication, anemia, hypothermia) which can increase the risk of bleeding [1]. Moderate to severe thrombocytopenia may increase the risk of bleeding in case of invasive procedure. The latter can be prevented by prophylactic platelet transfusion if the platelet count is less than the critical values. However, the transfusion threshold is questionable even if it is very helpful in practice. The context in which thrombocytopenia occurs, the kinetics of decrease in the platelet count, the presence of hemostasis disorders associated, mean that the decision of a platelet transfusion or performing an invasive procedure in a patient thrombocytopenia can be taken case by case and argued in writing.

The aim of our study was to evaluate the management of perioperative hypersplénismes.

PATIENTS AND METHODS

In a prospective study was performed in the resuscitation department of anesthesia at the University Hospital Aristide Le Dantec in Dakar. We collected on a consecutive series of cases, all cases of hypersplenism that were received in the splenectomy surgery service for over one year from May 1, 2014 to April 30, 2015. All patients, including the indication was splenectomy for hypersplenism were included in this study. Hypersplenism was selected based on the presence of splenomegaly with pan-cytopenia and hemostasis disorders.

We studied: age, sex, frequency, stock of blood dyscrasias, etiology, preparation for surgery, care intraoperative, postoperative course. The results of additional tests, dictated by the clinical situation and etiologic were scored according to records: blood count,

prothrombin time, activated partial thromboplastin time, platelet count.

RESULTS

Four cases of hypersplenism were glued to the university hospital Aristide Le Dantec in Dakar, capital of Senegal. These cases were supported by the surgery, anesthesia and resuscitation-hepato-gastroenterology of the said hospital.

These were two women aged 20 years and 28 years and two men aged 35 and 67 years. Three of our patients had received preparation with transfusions of blood products repeatedly. The amount of platelets transfused was based on patient weight: 1 concentrate weight 10kgs. The objective of the transfusion was to achieve a minimum rate of 50,000 cells / mm3. The PRBC transfusion was the degree of anemia with the objective to achieve 10g / dl. So two of our patients have not received red cell transfusion. Fresh frozen plasma was transfused in three of our patients to achieve a prothrombin to 60g / l. All patients were hospitalized. The preparation time was one week. The etiologies were variable, however, we found three cases of cirrhosis and one case of splenic lymphoma. Cirrhosis is the pathology that is frequently encountered in Senegal related to the frequency of hepatitis B. The indication of splenectomy is dominated to the risk of rupture of the spleen associated to hemostasis disorders and pan-cytopenia . As for splenic lymphoma, it is rarely encountered pathology.

Table I summarizes the hematological assessments of patients prior to surgery. One patient received three times six platelet concentrates. Such transfusions, however, not made up the platelet which had rather fallen. Predicting blood components (red cells, fresh frozen plasma and platelet concentrate) was performed in all patients.

All patients are deemed suitable for general anesthesia with tracheal intubation. Induction was performed with fentanyl, propofol and vecuronium. During surgery, two patients presented hemorrhagic shock with intraoperative bleeding estimated at 2,000 ml. The shock was stamped out with isotonic saline at a rate of 1500 ml and 1000 ml gélofusine. This vascular rempissage allowed us to maintain a mean arterial pressure around 65-70 mmHg. The other two patients experienced blood loss around 300 ml. After clamping of the splenic pedicle all patients received transfusion of labile blood products variable amount. One patient who had severe thrombocytopenia despite the correction of platelet concentrates received intraoperatively tranexamic acid. Antibiotic prophylaxis based cefuroxime was performed in three of our patients and a current antibiotic therapy. The latter was made acid-clavulanic amoxicillin. The duration of splenectomy was approximately two hours. The postoperative course was simple without postoperative complications and all patients stayed in intensive care. The blood tests have regained control of platelet count, prothrombin and relatively normal hemoglobin. The duration of ICU stay was 03 days and the patients are transferred in surgery.

Table-1: Hematological assessments of patients prior to surgery.

Patients/Age (years)	etiologies	HB (g / dl	Platelets/ mm3)	TP (%)	ATT / T 30.8
1 Man (35)	Cirrhosis	10.2	44 000	51	446
2 Man (67)	Cirrhosis	9.1 / 10.6	67,000 / 67,000	57/57	52/52
1 woman (28)	Cirrhosis	8.8 / 9.8	36,000 / 27,000	58/60	404/40
2 woman (28)	Lymphoma	10.2	27,000 / 52,000	50/49	44/44

Comments

Four cases of splenectomy for hypersplenism were collected during the study period. Splenectomy currently represents an effective therapeutic means of splenomegaly [2, 3, 9, 11, 15]. Typically, the goal of this treatment is multiple: [1, 3, 7, 8, 10, 11] to improve cytopenias due to hypersplenism, prevent spontaneous rupture of the diseased organ to remove the pain , treat and prevent infection. In our series, the main indications were constituted by the existence of hypersplenism with cytopenia multitransfused among patients, the existence of a risk of rupture of the spleen and portal hypertension in case of no response to medical treatment. Indeed, in the complicated cirrhosis portal hypertension, splenomegaly and hypersplenism inhibit the regeneration of liver tissue and cytopenia is frequently compounded by the absence of liver hematopoietic activity. These findings are almost identical to those of most authors [13, 15, 16, 18, 20].

Hemorrhagic shock occurred in our patient of 67 years was hard to curb as in the study of Marret and Fulachier [4, 12].

The young age of the other three patients, less than forty years, had not presented any specific support in perioperative. All patients presented a predominant peripheral pancytopenia platelet lineage as in the study

of Petermann and KG Kouadio [9, 14] in which 15 of 17 patients had pancytopenia. It disappears after splenectomy which was the case in our series.

Preparation for the procedure consisted in transfusion of blood components in three of our patients. Both have reached the recommended threshold platelet count. However the other two patients underwent splenectomy without reaching the threshold rate.

Transfusion of platelets, fresh plasma and packed red blood cells was performed in all patients after clamping of the splenic pedicle.

Hemorrhagic shock was related to the consistent and persistent thrombocytopenia despite poly-transfusions. All have evolved with normalization of platelets, PT, APTT postoperatively before discharge from ICU patients. These results are found in the work of Kouadio et al. [9] This is a cumbersome procedure. However, morbidity and mortality is rare. [14] Vayre et al found a mortality after splenectomy almost zero in his study. [17].

CONCLUSION

Hypersplenism associated with hemostasis disorders poses anesthetic management problems. This study showed that splenectomy for splenomegaly was effective with simple postoperative. All patients had significant hemostatic disorders associated with severe thrombocytopenia despite the anesthetic response preparedness. Anesthesia of these patients requires drastic measures of the management of hemorrhagic shock.

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