Laparoscopic Splenectomy – Optimal Solution in Autoimmune Thrombocytopenic Purpura

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Abstract

Introduction: the laparoscopic splenectomy became in the last years the surgical treatment of choice in patients with idiopathic thrombocytopenic purpura, which didn’t respond to medical treatment.

Material and method: this retrospective study presents our experience in splenectomies, open and laparoscopic, that were performed in the last year in patients with ITP, as well as the advantages of the minimally invasive method.

Results: we performed 6 splenectomies in patients with ITP, from which 5 were laparoscopic. The postoperative evolution was without complications, with zero mortality and there were no incidents or accidents during the interventions, except a converted laparoscopy and a reintervention during the first postoperative 24 hours for an intraperitoneal bleeding.

Conclusions: the main advantages for laparoscopic splenectomy are lower postoperative analgesia, rapid regain of digestive tolerance, shortening of hospitalization.

Keywords: splenectomy, laparoscopy, idiopathic thrombocytopenic purpura.
Introduction

Autoimmune thrombocytopenic purpura is a condition characterized by thrombocytopenia, which can lead to an increased risk of bleeding (1). It may be primary (idiopathic) or secondary, the latter may occur in patients with systemic erythematosus lupus, chronic lymphocytic leukemia, lymphoma, HIV infection, etc. The initial treatment is the administration of corticosteroids, splenectomy being the backup solution, when the disease is unresponsive to medical therapy (2). Initially, splenectomy was indicated as the method of treatment for hereditary spherocytosis by Burgard by Sutherland in 1910 (3) and idiopathic thrombocytopenic purpura by Kaznelson in 1916 (4). Until 1951, when Harrington et al. found the role in inducing thrombocytopenia for the plasma immunoglobulin, splenectomy represented the only treatment for ITP (5). Currently, splenectomy is chosen as a treatment method in patients with ITP, in which the thrombocytopenia does not tend to correct itself after 4-6 weeks of corticosteroids or in which the thrombocytopenia returns after, initially, the disease responded to corticosteroid administration (6). Laparoscopic splenectomy has become in recent years the surgical treatment of choice in patients diagnosed with idiopathic thrombocytopenic purpura unresponsive to drug therapy. The first laparoscopic splenectomy was performed for the first time in 1991 by Delaitre and Maignien (7). Compared with the open technique, laparoscopic splenectomy offers the advantages of reduced postoperative pain, shorter period of hospitalization, with rapid social reintegration of the patient (8-10).

Methods

We performed a descriptive observational single-center retrospective study based on medical records and operative protocols for patients undergoing splenectomy for ITP in the past year.

General Surgery Clinic collaborated with Hematologic Diseases Unit for proper selection of cases with surgical indication and appropriate postoperative surveillance. There were 6 patients diagnosed with ITP, for 5 of them laparoscopic splenectomy being performed; in a case of laparoscopic intervention conversion to open technique was required. The surgical indication was represented by symptomatic thrombocytopenia refractory to 4-6 weeks medical therapy, remission of thrombocytopenia only at toxic doses of steroid, recurrent thrombocytopenia after initial response to steroid therapy. According to the surgical laparoscopic procedure, the approach in all cases was the posterolateral type, with the patient positioned in right lateral decubitus. Trocars were placed as follows: 10 mm optical trocar on the perpendicular line navel - left costal margin at 3-4 cm from the costal margin, working 10 mm trocar 2 cm anterior and superior from the iliac spine and two 5 mm trocars (one below the xyphoid and one below the left costal line on the
medioclavicular line). The using of the coagulation-sealing device type Ligasure allowed shortening the intervention. The approach of the vessels was conducted as close as possible to the hilum of the spleen. The distribution of the splenic vessels was either masterly type (single vascular trunk) in 2 cases, either the distributed type in 4 cases. The extraction of the spleen was made through a trocar hole, in a bag, after its fragmentation. There were no intraoperative incidents or accidents, except for a conversion to laparotomy due to the breaking of the splenic capsule. Intraoperative, we detected no detected accessory spleens. The average duration of intervention was 160 minutes for laparoscopy, and 100 minutes for the open technique. In one case, reintervention was necessary, due to an intraperitoneal bleeding from a minor source (short gastric vessel) in the first 24 hours.
The postoperative course was simple in all cases, except for the reintervention described above (required laparotomy in order to solve the bleeding source; afterwards, the evolution was simple). Postoperative hospitalization for laparoscopic resolved cases was 3 days, and 5 days for the patient who underwent open splenectomy, respectively for the one who underwent the reintervention. Unlike patients who received open technique, those who underwent laparoscopic splenectomy had a lower postoperative analgesic demand and they also regained quicker their feeding capacity in the postoperative period. In all cases we obtained cure, with the remission of the thrombocytopenia. Histopathologic examination of the spleens revealed an average weight of 275 grams, the increase in spleen red pulp, without identifying monoclonal cell proliferation.
Conclusions

Splenectomy represents the backup therapeutic method for patients with unresponsive to drug therapy ITP. Several studies have concluded that laparoscopic splenectomy is feasible and safe, being associated with lower morbidity and a faster recovery of patients, compared with the open technique (11). Given the high risk of intraoperative bleeding in ITP patients, they require good preoperative preparation, which according to the existing protocols, consists of iv immunoglobulin administration, corticosteroids orally or platelets in patients with severe thrombocytopenia (12). Mortality and morbidity are higher in the open splenectomy copared with the laparoscopic one, but there are no conclusive data to provide information on the differences in growth rate of the platelets between the two techniques (13). PTI is a benign condition, patients rarely showing significant bleeding episodes, but there may be cases of deceases through intracranial haemorrhage or infection, that the patients can develop due to cytotoxic treatment, or even after splenectomy (14). Old age influences negatively the postsplenectomy evolution, because these patients may develop bleeding complications more frequently (15). Laparoscopic splenectomy has the advantage of a shorter hospital stay, postoperative analgesic requirement is lower and patients regain their digestive tolerance earlier and they quicklier reintegrate into society. The main desanvantage of the laparoscopic technique is the longer duration of the intervention. However, in the laparoscopic technique, the identification of accessory spleens is more difficult, requiring a more carefully intraoperative exploration associated with thorough preoperative imaging investigations. Otherwise, scintigraphy after splenectomy may discover accessory splines, explaining the treatment failure (16). There are no significant differences between open and laparoscopic technique regarding the intraoperative blood loss, the rate of complications, the medical costs or the hematologic response (17).

REFERENCES