

CASE REPORT: LAPAROSCOPIC SPLENECTOMY FOR IDIOPATHIC THROMBOCYTOPENIC PURPURA

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Abstract

Keywords

thrombocytopenia, bone marrow.

The incidence of ITP is around 66 cases/1,000,000 per year. The treatment is instituted if platelet is less than $30 \times 10^9/L$. treatment is based on steroid, immunoglobulin and platelet transfusion². Acute ITP usually follows acute infection and resolve within 2 months while chronic ITP persists longer than 6 months. In children, there is high (80%) spontaneous remission rate¹. Spontaneous remission is less common in adults (2%). However, 64% of them do eventually recover, while 30% have chronic disease and 5% die from bleeding¹.

Introduction

Idiopathic thrombocytopenic purpura (ITP) is an isolated thrombocytopenia with normal bone marrow in the absence of other cause of thrombocytopenia¹.

ITP is primarily due to peripheral platelet destruction (antibody to specific platelet membrane glucoprotein). Acute ITP usually follows acute infection and resolve within 2 months while chronic ITP persists longer than 6 months. In children, there is high (80%) spontaneous remission rate¹. Spontaneous remission is less common in adults (2%). However, 64% of them do eventually recover, while 30% have chronic disease and 5% die from bleeding¹.

The incidence of ITP is around 66 cases/1,000,000 per year. The treatment is instituted if platelet is less than $30 \times 10^9/L$. treatment is based on steroid, immunoglobulin and platelet transfusion². Thrombopoietin receptor agonist (TPO-RA) is a novel therapy that is considered an alternative to splenectomy, but it is not readily available and besides, the risk of thromboembolism and bone marrow fibrosis is not well defined³. Splenectomy is reserved for failed medical treatment and on patient who are steroid-dependent (more than three months)⁴. In this case report, we would like to discuss the role of surgery as a second line therapy in the management of ITP. Ethical approval was obtained from the Human ethic committee of the university of the Witwatersrand (clearance certificate No: M 200824)

Case report

Table 1. Patient characteristics

Case	Age (years), gender	Spleen weight (g) and size (mm)	Comorbidity	ITP medication	Pre-operative platelet ($10^9/L$)	Post-operative platelet ($10^9/L$)	Post-operative outcome
1	39 Female	71; 95x65x30	Diabetes, hypertension, obesity	Prednisone, Platelet transfusion, Immunoglobulin	11	299 (at day 2) and 337 at 2 years	Uneventful
2	48 Female	100; 95x70x20	HIV, treated tuberculosis, obesity	Prednisone, Platelet transfusion, immunoglobulin	9	310 at day 2 and 334 at 5 months	Uneventful

Two middle-age female patients summarized in table 1 were referred for laparoscopic splenectomy by hematologist after failure of medical treatment. In common they had critically low platelet count, and significant comorbidity. They underwent successful laparoscopic splenectomy (right lateral decubitus approach) under platelet cover. The post-operative course was uneventful. The blood loss was minimal in both cases and no transfusion of red blood cell was necessary except platelet that was given at the end of the procedure. The platelet count improved in the early post-operative and was sustained after a respective follow up of 5 and 24 months off medication.

Modified laparoscopic splenectomy

The conventional approach consists of mobilization of the splenic flexure of the colon, division of the short gastric to gain access to the retroperitoneum. Next is the dissection of the splenophrenic ligament. The splenic artery and vein are then exposed and transected with vascular staplers. After completing the division of splenorenal and splenocolic ligament, the spleen is free and ready to be delivered.

We modified the laparoscopic approach as follow: By means of three port (mid-clavicular line, anterior axillary line and anterior to mid-axillary line), Instead of dividing the short gastric vessels to gain access to the main trunk of the splenic vessels, we divided the terminal branches of splenic vessels as they enter the splenic hilum. This modification obviates the need for vascular staplers. The specimen was retrieved via endopouch through the enlarged mid-axillary port.

Discussion

Splenectomy is not the first line of treatment for ITP. It applies to a very small subset of patients who either didn't have spontaneous remission or failed medical treatment.

Laparoscopic splenectomy offers substantial benefit over the open procedure considering the immune deficiency associated with the medical treatment of ITP. The potential risk of wound sepsis due to obesity, immunosuppressant drugs and the underlying comorbidity (HIV, diabetes) are prevented by minimal access surgery. Intracranial bleed, the most feared complication of intractable thrombocytopenia is also dealt with by splenectomy^{3,4}. Minimal access surgery speeds up recovery and expedites early return on duty. Furthermore, the cosmetically appealing scar contributes to the benefit of laparoscopy.

Splenectomy obviates the need for chronic immunosuppressive medication. The expected loss of weight after discontinuation of steroid is another benefit in the horizon and is likely to boost the patient self-esteem. All the deleterious side effects (osteoporosis, cataract, diabetes) of steroid are carried away after successful splenectomy. Nevertheless, the overwhelming post splenectomy infection (OPSI) is a late complication of splenectomy that needs to be recognized and preventative immunization should be instituted against the encapsulated microorganisms (*Streptococcus pneumoniae*, *Neisseria meningitidis* and *Haemophilus influenzae*).

We believe that our modified approach of laparoscopic splenectomy makes the operation simple and obviates the need for vascular staplers to divide the splenic vessels. Hence, the operation can be accomplished with the use of energy device alone.

The high incidence of incisional hernia that represents one of the most common complications of laparotomy is likely to yield to the low incidence of port site hernia that is relatively easier to manage⁵.

The incidence of accessory spleen is around 10% and is one of the reasons for failed splenectomy. Nevertheless, it is not recommended to actively look for it during splenectomy. The most common location of accessory spleens is the splenic hilum (75%) and near the tail of the pancreas (25%)⁶. Other rare locations are the mesentery of small bowel, near the pouch of Douglas, near the left testis, near the left broad ligament and the greater omentum⁶. Overall the success rate of splenectomy is hovering around 75 to 85%⁴.

Conclusion

Splenectomy is very gratifying in the management of a subset of patient with ITP that has failed medical treatment. Splenectomy obviates the need for immunosuppressive therapy. The laparoscopic approach further minimizes the risk of surgical site occurrence (SSO) in the already immunocompromised patients.

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