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LAPAROSCOPIC SPLENECTOMY IN AN IDIOPATHIC THROMBOCYTOPENIC PURPURA PATIENT WITH 30,000/MM3 PLATELET COUNT PROVING TO BE A SURGICAL CHALLENGE.

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ABSTRACT Idiopathic Thrombocytopenic Purpura (ITP) is an autoimmune disease causing antibody coated platelets to sequestrate in reticuloendothelial organs, especially spleen. Management of ITP depends on the platelet count and symptoms of the patient. Splenectomy is advised in patients who are refractory to 1st and 2nd line of medical therapy and surgery is usually performed above the platelet count of 70,000/mm^3. This was a unique case of chronic refractory ITP with platelet count of 28,000/mm^3. As the patient did not have hepatosplenomegaly and portal hypertension, laparoscopic splenectomy was performed at such low platelet count which required an experienced team of surgeons and anesthesiologists.

KEYWORDS : Idiopathic thrombocytopenic purpura, Laparoscopic splenectomy, bone marrow, autoantibodies

INTRODUCTION

ITP, classically known as Idiopathic/Immune Thrombocytopenic Purpura, is characterized by a low platelet count despite normal bone marrow and the absence of other causes of thrombocytopenia that could be responsible for the finding. Autoantibodies are responsible for the disordered platelet destruction mediated by the over-activated platelet phagocytosis within the reticuloendothelial system [1]. The typical presentation of ITP is characterized by purpura, epistaxis and gingival bleeding; GI bleeding and hematuria are less commonly found. Intracerebral hemorrhage is the most fatal presentation.

There are various lines of therapy involved in the management of ITP depending upon the platelet count and symptoms of the patient. Patients who are asymptomatic or have platelet count >50,000/mm^3 are only observed without ant treatment. Patients with platelet count <50,000/mm^3 or with mild symptoms are started with first line of therapy, i.e., glucocorticoids. Patients refractory to them are started on second line of medical therapy- monoclonal antibodies (eg. Rituximab). Patients who do not respond to both the lines of therapy, as was our patient in this study, require splenectomy. Other indications for splenectomy include platelet count <10,000/mm^3 for 6 or more weeks, requirement of toxic doses of steroids for remission and pregnant female in her second trimester. If the patients do not respond to splenectomy even after 6 months of the procedure, then they are started on third line of therapy i.e., thrombopoietin receptor agonists (Eltrombopag, Romiplostim).

CASE REPORT

History:

A 32-year-old female came to OPD with complaints of menorrhagia and purpuric rashes on her bilateral upper limbs. She was a known case of chronic refractory ITP, was on glucocorticoids and was advised for splenectomy by her gynecologist as she wanted to conceive. At the age of 7 years, she had her first symptom of nasal bleed and multiple bruises on her bilateral arms due to trauma while playing. At the age of 13 years, she had her menarche and complained of menorrhagia. Her bone marrow aspirate was suggestive of hypercellular marrow with erythroid and myeloid hyperplasia and the diagnosis of ITP was established after excluding other causes. She was on glucocorticoids and monoclonal antibodies since then. She required multiple admissions for menorrhagia and epistaxis.

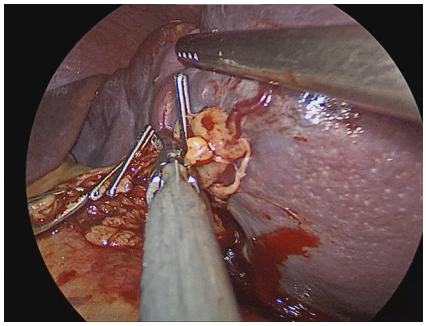
EXAMINATION AND INVESTIGATIONS:

Patient was vitally stable and fully conscious. Per abdomen examination was soft, non-tender with no significant palpatory findings. Local examination suggested multiple small purpuric rashes on her bilateral upper limbs. Ultrasonography suggested a normal sized spleen (9.1 cm) with no other significant findings. Her platelet count was 28,000/mm^3 at the time of admission. Even after repeated transfusions of platelet concentrates, her counts did not rise significantly and the surgery was performed at 30,000/mm^3 platelet count and 9.2 hemoglobin. Patient was given pneumococcal, meningococcal and influenza vaccines 2 weeks prior to surgery.

Purpuric Rashes On Patient's Right Upper Limb

Surgical Intervention:

Laparoscopic splenectomy was performed. Intraoperatively, there was minimal bleeding and patient was transfused with 1 whole blood and 2 platelet concentrates. After ligating the splenic vessels and dissecting the splenic ligaments, spleen was removed without morcellation by giving an inguinal incision. Postoperatively, patient was vitally stable and her platelet count doubled on first day. 2 platelet concentrates were transfused later but eventually her platelet count started dropping. Drain was removed on 4th post operative day and the patient was discharged on 8th day with a platelet count of 48,000/mm^3. She was discharged on oral glucocorticoids and on her weekly follow ups, an increasing trend of platelets was found.



Ligation Of Splenic Vessels During Laparo Scopic Splenectomy

DISCUSSION:

Immune thrombocytopenic purpura (ITP) is a disorder of immune sensitivity entailing an accelerated phagocytosis of platelets by the reticuloendothelial system. The spleen is the primary site of platelet destruction and antiplatelet antibody production. The mainstay of medical therapy is bolus corticosteroids followed by a tapering dose. However, long-term remission rates are only 20% to 25% in adults [2,3] Alternatively, surgical management historically reports a 49% to 86% successful remission rate after splenectomy [4]. There are various factors which predict a successful response to splenectomy for ITP. These factors include younger age, a successful response to preoperative steroids, shorter interval from diagnosis to splenectomy, splenic sequestration, response to intravenous IgG, and preoperative platelet counts [5]. Laparoscopic splenectomy results in less pain, shorter hospital stay, faster return to full activity, and superior cosmesis compared with open techniques[6].

Splenectomy is one of the treatment options that needs to be weighted in the treatment of ITP, particularly in cases that have shown response failure to medical modalities such as prednisone, or anti-D globulin therapy. However, because open splenectomy (OS) requires more surgical invasiveness, surgical treatment had not been accepted for many patients with ITP. Recently, laparoscopic splenectomy (LS) is being accepted as an effective alternative to OS in treating ITP. The most important parts of this method are, mobilization of the spleen by dissection of the splenic ligament, and the blocking of blood circulation to the spleen by division of the hilar arteries and veins[7].

CONCLUSION:

Surgical therapy increases remission rates than medical therapy in patients suffering from chronic disease[8]. Patients who do not respond to first and second line of medical therapy should be considered for splenectomy without much delay.

An immediate rise in platelet count should not be expected following splenectomy in patients of ITP as these patients have a relative bone marrow failure and it will take some time for the marrow to regain its function of increased platelet production.

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