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POSTSPLENECTOMY REACTIVE THROMBOCYTOSIS - A CASE REPORT

Pathology

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ABSTRACT

Thrombocytosis can be primary or secondary (reactive). Thrombocytosis is defined as platelet count >500 K/µL. The most common etiology is reactive thrombocytosis is due to infections, trauma, surgery or occult malignancy. Thrombocytosis is associated with thrombotic and hemorrhagic complications. Hypercoagulable state is characterized by episodes of thrombosis and can be due to inherited or acquired conditions. Post splenectomy reactive thrombocytosis has an incidence of about 75-82%. This case report describes 45 year female patient with hepatosplenomegaly, who underwent splenectomy. After splenectomy severe thrombocytosis was noted, which was not present prior to splenectomy. The patient was on aspirin to prevent complications related to thrombocytosis. The platelet count returned back to normal range after 2 months of follow up. Reactive thrombocytosis is a very common event following splenectomy but in this study it was not associated with clinically evident thrombotic or hemorrhagic complications. patients of high risk of thrombotic episodes, cardiovascular disease, myeloproliferative disorders, occult malignancy require monitoring the counts and medical treatment with antiplatelet drugs and cytoreductive therapy to prevent complications.

KEYWORDS

Reactive, thrombocytosis, essential, splenomegaly

INTRODUCTION

Thrombocytosis is defined as platelet count >500 K/µL. The normal platelet count in adults ranges from 150- 450K/µL [1,2]. Platelet count >1000 K/µL is encountered more commonly in myeloproliferative disorder or after splenectomy[3]. Thrombocytosis can be primary or secondary (reactive), associated with thrombotic and hemorrhagic complications. The most common etiology is reactive thrombocytosis is due to infections, trauma, surgery or occult malignancy [4]. Extreme thrombocytosis may result in thrombotic events such as acute myocardial infarction, pulmonary embolism. Postsplenectomy reactive thrombocytosis has an incidence of about 75-82%. The platelet count in reactive thrombocytosis is expected to normalize after the underlying condition is resolved [3]. The incidence of thrombosis due to elevated platelet count after splenectomy is approximately 5%. This case report describes 45 year female patient with postsplenectomy reactive thrombocytosis.

CASE REPORT

A 45 year female presented at Gastro surgery outpatient department with chief complaints of upper abdominal pain since 1 year. On examination abdomen was soft, non tender. Spleen was palpable up to umbilicus. Ultrasound of abdomen showed dilated tortuous collateral at porta, peripancreatic, pericholecystic and splenic hilum with Splenomegaly (20 cm) and mild liver fibrosis. CECT showed hepatospleenomegaly with portal hypertension. Consequently portal vein thrombosis was confirmed. Diagnosis of Extrahepatic portal vein obstruction was given. Patient had history of hematemesis in August, 2022. Two units PCV was given. UGI scopy was done on 8/8/2022 suggestive of small esophageal varices, mild small fundic varices. Variceal band ligation was done.

Laboratory values as observed on 9/5/22 were; hemoglobin level of 10 g/dl (reference range, 12-18 g/dl). Haematocrit of 37.8% (reference range 40-50%), WBC count 10.99 K/µL, Platelet count of 454 K/µL (reference range, 130-400 K/µL). Echocardiogram ruled out endocarditis.

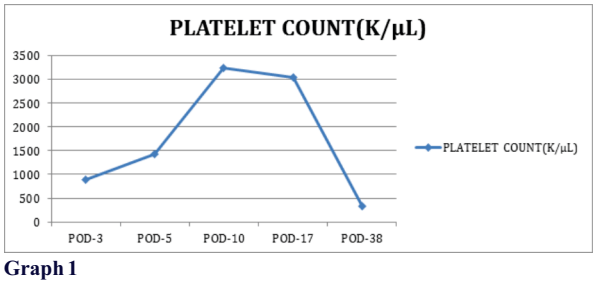
Patient was underwent splenectomy and distal splenorenal shunt on 18/11/22. Histopathological examination report of spleen (18/11/22) showed fibrocongestive splenomegaly and liver showed fibrocongestive hepatopathy with fibrosis (METAVIR Score F2/4 and ISHAK grade 3/6).

The platelet count and WBC count were gradually increasing after splenectomy as mentioned in Table 1 below:

Table 1

	Hb (g/dl)	Platelet (K/µL)	WBC(K/µL)
POD-1	12.5	781	38.6
POD-3	10.4	880	36.81
POD-5	11.7	1434	29.11
POD-10	12.4	3256	36.52
POD-17	11.9	3055	28.47
POD-38	11.5	332	8.57

The patient was discharged on 23/11/2022 with platelet count of 1434 K/µL and WBC count 29.11 K/µL. She was started on 75 mg of aspirin per day to prevent further complications. However the hematological parameter continue to show a rising trend over the follow up hematological profiles. After 2 months of follow up the patients complete blood count came back to normal as shown in graph 1 below. In our case the rise of platelet and WBC count was abrupt and sudden. Generally the levels of platelet and WBC are elevated but not upto this extent. The patient also underwent bone marrow biopsy, which ruled out myeloproliferative disorders.



Graph 1

DISCUSSION

Thrombocytosis can be Inherited or Acquired. In our case the patient does not have family history or life long history of thrombocytosis so the cause of inherited thrombocytosis is ruled out. Thrombocytosis generally either is a reactive process (secondary thrombocytosis) or is caused by a clonal bone marrow disorders such as myeloproliferative neoplasms. Essential thrombocytosis is a diagnosis of exclusion by ruling out known cause of reactive thrombocytosis.

Reactive thrombocytosis is due to overproduction of one or more thrombopoietic factors which is observed in infection, inflammation, malignancy or trauma that act on megakaryocytes and their precursors [3,5]. IL-6 plays a primary role in reactive thrombocytosis[3]. Spleen plays a major role in platelet regulation as it is primary site of destruction of platelets, which is why thrombocytosis is seen in hyposplenism[6]. Secondary causes of elevated platelet count such as myeloproliferative neoplasm, occult malignancy etc. must be ruled out. Reactive thrombocytosis is a predictable finding after

splenectomy, with platelet count peaking at 1-3 weeks and returning to normal levels in weeks, months and rarely years due to resolution of underlying conditions[3]. Postsplenectomy venous thrombosis is usually associated with platelet counts 600 K/μL to 800 K/μL. Less commonly, postsplenectomy thrombocytosis results in arterial thrombosis that leads to stroke or myocardial infarction. But, these hemostatic events infrequently occur in patients with reactive thrombocytosis[1]. This is presumably due to fact that the interaction of platelets with the vessel wall remains qualitatively normal in secondary thrombocytosis[7].

CONCLUSION

In the case reported, it was found that splenectomy was the prime cause of severe thrombocytosis. Reactive thrombocytosis is a very common event following splenectomy but in this study it was not associated with clinically evident thrombotic or hemorrhagic complications. Post splenectomy reactive thrombocytosis does not need any treatment inspite of high platelet count in 70 to 80 percent of case. However, treatment of infection and iron deficiency should be treated. But in patients of high risk of thrombotic episodes, cardiovascular disease, myeloproliferative disorders, occult malignancy require monitoring the counts and medical treatment with antiplatelet drugs and cytoreductive therapy to prevent complications.

REFERENCES

1. Buss, D. H., Cashell, A. W., O'Connor, M. L., Richards II, F., & Case, L. D. (1994). Occurence, etiology, and clinical significance of extreme thrombocytosis: a study of 280 cases. The American journal of medicine, 96(3), 247-253..
2. Griesshammer, M., Bangerter, M., Sauer, T., Wennauer, R., Bergmann, L., & Heimpel, H. (1999). Aetiology and clinical significance of thrombocytosis: analysis of 732 patients with an elevated platelet count. Journal of internal medicine, 245(3), 295-300.
3. Ejikeme, C., Elkattawy, S., Kayode-Ajala, F., Ayad, S., Al-Nasseri, A., & Kessler, W. (2021). Reactive thrombocytosis after splenectomy in hereditary spherocytosis: Case report and literature review. European Journal of Case Reports in Internal Medicine, 8(7).
4. Santhosh-Kumar, C. R., Yohannan, M. D., Higgy, K. E., & Al Mashhadani, S. A. (1991). Thrombocytosis in adults: analysis of 777 patients. Journal of internal medicine, 229(6), 493-495.
5. Heits, F., Stahl, M., Ludwig, D., Stange, E. F., & Jelkmann, W. (1999). Elevated serum thrombopoietin and interleukin-6 concentrations in thrombocytosis associated with inflammatory bowel disease. Journal of interferon & cytokine research, 19(7), 757-760.
6. Bullen, A. W., & Losowsky, M. S. (1979). Consequences of impaired splenic function. Clinical Science, 57(2), 129-137.
7. Schafer, A. I. (2004). Thrombocytosis. New England Journal of Medicine, 350(12), 1211-1219.