CASE REPORTS

AN UNUSUAL PRESENTATION OF ESSENTIAL THROMBOCYTOSIS

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INTRODUCTION

Essential thrombocytosis (ET) first described by Epstein and Goedel in 1934 [1], is a nonreactive, chronic myeloproliferative disorder. Essential thrombocytosis is associated with sustained megakaryocyte proliferation that increases the number of circulating platelets. It is characterized by a platelet count greater than 600,000/f.lL, megakaryocytic hyperplasia, splenomegaly, and a clinical course complicated by hemorrhagic and/or thrombotic episodes [2,3]. The median age at diagnosis is 60 years and as many as 20 percent of the patients may be younger than 40 years of age [4] While one-quarter to one-third of the patients with essential thrombocytosis may be totally asymptomatic at presentation, the remaining may report "vasomotor" symptoms or manifest thrombohemorrhagic complications [5]. Incidence of portal vein thrombosis is 2 percent in those under 40 years of age and most common symptoms of portal vein thrombosis in these patients are varicael haemorrhage 62 percent, anaemia 15 percent, ascites 10 percent, splenomegaly 8 percent, thrombocytopenia 5 percent. We are reporting a case of portal vein thrombosis with an uncommon presentation of severe abdominal pain and associated thrombocytosis. Later investigations ruled out causes of reactive thrombocytosis

CASE REPORT

The patient was 39 years old male living in Kohat. He was a 10 pack year smoker. He presented initially in Medical emergency reception with 01 day history of severe epigastric pain and vomiting. Pain was acute in onset, intermittent, severe in intensity, burning in nature, non shifting, non radiating without any specific aggravating or relieving factors. He also had four or five episodes of vomiting. Vomitus contained ingested food particles with visible blood. Past medical history was unremarkable except for occasional dyspeptic symptoms. On examination he was distressed, restless and sweating profusely. His vital signs revealed pulse of 105/minute and respiratory rate of 25/minute. Examination of abdomen revealed marked tenderness in epigastric region. With splenomegaly. Rest of systemic examination was unremarkable.

He was treated initially as a case of acid peptic disease but his pain didn't decreased. His blood complete picture revealed a platelet count of 550,000/cmm. Upper GI endoscopy revealed severe pangastritis with portal naturopathy. His USG abdomen revealed portal vein thrombosis and splenomegaly. CT scan abdomen revealed a large thrombus obliterating portal vein with splenomegaly (figure).

A suspicion of myeloproliferative disorder was made and patient was investigated. His investigations revealed a consistently elevated platelet count >600,000/µL (table-l). Doppler scan revealed completely thrombosed portal vein, varicosed splenic vein and formation of periportal collaterals thus indicating chronic portal vein thrombosis. Megakaryocytic hyperplasia on bone marrow aspiration and biopsy. Absence of the Philadelphia chromosome on cytogenetic study. Normal iron stores, normal serum ferritin and normal red cell mean corpuscular volume (MCV) hematocrit < 40 percent, his CRP was with in normal range.

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The patient was thus diagnosed as a case of essential thrombocytosis and according to risk stratification, was considered a high risk patient for complications. He was started on low dose aspirin 325 mg/day. Symptomatic improvement was achieved with Omeprazole 20 mg/day bid. Patient was started on Hydroxyurea 500 mg/day. He showed marked improvement, his initial symptoms of pain epigastrium settled down within 07 days of starting therapy and platelet counts fell down within normal limits. No significant side effect was noticed. Dose of Hydroxyurea was later readjusted to 500 mg/day bid. Patient was advised regular follow ups with complete blood counts and liver function tests.

DISCUSSION

The Chronic myeloproliferative disorders are classified into several subgroups, of which four are well characterized: Chronic myelogenous leukemia, Polycythemia vera, Agnogenic myeloid metaplasia, and Essential thrombocythemia also called essential thrombocytosis or primary thrombocytosis) [1]. Essential thrombocythemia is alone among these as it is diagnosed by excluding causes of reactive thrombocytosis, and by excluding the other chronic myeloproliferative disorders [2].

Platelet survival is normal in essential thrombocytosis. The use of glucose-6-phosphate dehydrogenase enzyme-based clonal assays suggested that essential thrombocytosis represented a clonal stem cell disorder [3,4]. Subsequent investigations, which used X-linked DNA and transcript analysis, demonstrated a variable pattern of lineage involvement that suggested hierarchically different levels of clonal generation [5,6]. Patients with essential thrombocytosis have a 10 years survival rate of 64-80%, which may not be significantly different from that of the age-matched general population. Death occurs from thrombotic complications.

Criteria for the diagnosis of ET, is as follows [5]:

Table-1: Serial platelet counts.

Date	Platelet counts
15/06/2004	550 XIO 9/L
20/06/2004	587 XIO 9/L
27/06/2004	640XI0 9/L
03/07/2004	698 XIO 9/L
07/07/2004	860 XIO 9/L
15/07/2004	980 XIO 9/L
25/07/2004	1034XIO 9/L
31/07/2004	1100XIO 9/L
06/08/2004	1267XI0 9/L
Hydoxyureastarted	
07/08/2004	1285 XIO 9/L
12108/2004	1050 XI0 9/L
20/08/2004	934 XI0 9/L
24/08/2004	785 XI0 9/L
29/08/2004	710 XI0 9/L
04/09/2004	649 XI0 9/L
10/09/2004	550XI0 9/L
16/09/2004	490 XI0 9/L
25/09/2004	390XI0 9/L

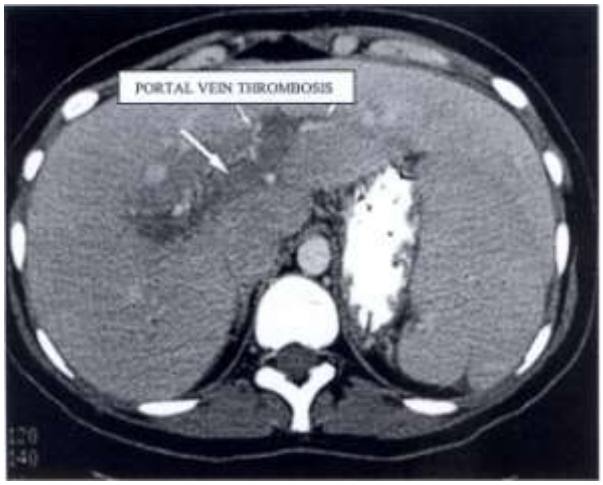

Figure: CT scan abdomen showing portal vein thrombosis.

Table-2: Risk stratification in essential thrombocythemia.

Low-risk	
	Age <60 years and
	No history of thrombosis and
	Platelet count <1.5 million/µL and
	No cardiovascular risk factors (smoking, obesity)
High-risk	
	Age 260 years or
	A previous history of thrombosis
Intermediate-risk	
	Neither high-risk nor low-risk

- A consistently elevated platelet count >600,000/µL
- Megakaryocytic hyperplasia on bone marrow aspiration and biopsy

- Absence of the Philadelphia chromosome on routine cytogenetic study [6].
- Absence of causes for reactive thrombocytosis
- Absence of peripheral blood, bone marrow, and karyotypic evidence for a myelodysplastic (MDS) disorder or for Agrogenic myeloid metaplasia.
- Normal iron stores
- A persistent and otherwise unexplained elevation in platelet count [7].

While one-quarter to one-third of the patients may be totally asymptomatic at presentation, the remaining may report "vasomotor" symptoms or manifest thrombohemorrhagic complications. Approximately 25 to 48 percent of the patients may present with palpable splenomegaly. All patients fall into one of the following three risk groups (table-2) [5]:

Most patients with essential thrombocytosis enjoy a normal life expectancy without associated disease-related complications [8,9]. Treatment is required for the complications of Essential thrombocytosis [3].

Therapeutic agents available for the treatment of ET include hydroxyurea, anagrelide, alpha interferon, pipobroman, radiophosphorus.

The use of hydroxyurea (HU, Hydrea) compared to no treatment, has been shown to reduce the risk of thrombosis in high-risk patients from 24 percent to less than 4-percent [10]. The initial dose of HU is 15 mg/kg per day. It is important to counsel patients taking HU to avoid missing drug dose. Anagrelide is an oral imidazoquinazoline derivative which inhibits platelet aggregation (via platelet anti-cyclic AMP phosphodiesterase activity), and also has a platelet lowering effect in humans [11] Anagrelide is a reasonable alternative for patients who do not tolerate HU or for whom long-term therapy is planned and a concern regarding drug leukemogenicity exists [12]. Alpha interferon controls the thrombocytosis associated with all myeloproliferative disorders, including ET. Alpha interferon may also be considered for controlling thrombocytosis in patients failing treatment with both HU and anagrelide [13]. Pipobroman is an oral piperazine derivative [14]. In a single arm study of patients with either Polycythemia vera or ET treated with oral radioactive phosphorus, acute leukemia developed in 4.6 percent after a median follow-up of 7.2 years [10,15].

CONCLUSION

A diagnosis of Essential thrombocytosis, based on a careful pathologic and cytogenetic review, is associated with a very low risk of either leukemic transformation or occurrence of other life-threatening complications. As a result, life expectancy is minimally affected and the indiscriminate use of potentially harmful treatment agents is not warranted. Once the diagnosis is adequately established, the next step is to evaluate the presence or absence of risk factors for thrombohemorrhagic complications.

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