Bernard-Soulier Syndrome Presenting as Recurrent Exsanguinating Haematemesis

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Abstract
A 26 year old girl presenting with recurrent upper gastrointestinal bleeding was found to have Bernard-Soulier (autosomal recessive platelet dysfunction) syndrome. Although occasional cases of the syndrome have been reported earlier in Indian literature, none of them had exsanguinating gastrointestinal bleeding.

Key words: Haematemesis, platelet dysfunction, Bernard-Soulier syndrome.

Introduction
Congenital qualitative platelet disorders are uncommon haematological disorders. They include a large number of heterogeneous entities; some of these are relatively well defined in terms of specific abnormalities of platelet function, whereas others are only partially characterised. The commonest of these is Glanzmann's thrombasthenia, of which many cases have been reported from India.1,2

Bernard-Soulier syndrome (BSS) is a rare entity of which only occasional cases have been reported in Indian literature.3,4 We are reporting a case of an adult married female with BSS who had recurrent bouts of severe upper gastrointestinal and uterine bleeding.

Case Report
1N, a 26 year old Sindhi girl, married for 2 years, was hospitalized in May 1983 with a history of pain in the abdomen for 5 days and diarrhoea with frank blood in the stools for one day. On the second day of hospitalization, she developed severe haematemesis followed by melena.

The patient had pallor, a pulse rate of 112/min and blood pressure of 110/70 mm Hg. Her physical examination was otherwise normal. An emergency gastroscopy showed multiple bleeding erosions in the oesophagus and the stomach; a chronic posterior duodenal ulcer was also seen in the first part of the duodenum but this was not bleeding. The patient was put on ranitidine orally, 150 mg twice a day. The bleeding stopped within 24 hours. A repeat endoscopy after 4 weeks showed that the ulcer had healed.

Past history revealed that the patient was admitted in June 1982 to the gynaecology ward of our hospital for bleeding per vaginum. She was found to have a missed abortion and an evacuation was carried out. At that time, her haemoglobin was 9.5 g/dl. She was given parenteral iron therapy.

In February 1984, she was readmitted with severe haematemesis requiring 15 units of blood transfusion. Another emergent gastroscopy was repeated. Multiple actively bleeding erosions were again seen in the duodenum. The patient was given intravenous ranitidine. Two days later, she developed severe bleeding per vaginum for which an emergency dilatation and curettage had to be done.

At this stage, the patient revealed that she had had menorrhagia right since menarche. She also had an episode of severe melena in 1979 for which she had been admitted to a hospital at Ahmedabad. Barium studies done at that time were reported to be normal. During that admission, she had received 25 units of blood transfusion. She also volunteered the information that in September 1982 she was admitted for menorrhagia, found to be grossly anaemic (Hb 4.8 g/dl) and received transfusions of 4 units of blood.

It thus became apparent that the patient was suffering from a bleeding diathesis for which she had required 41 units of blood transfusion over a span of 5 years. Detailed haematological investigations were hence carried out. There was no history of consanguinity and the family history was noncontributory.

Investigations (1984)
Haemoglobin 5.9 g/dl, haematocrit 22%, reticulocyte count 1%, WBC count 5.7 × 10⁹/l, ESR 1 mm at the end of one hour, and platelet count 15% × 10⁹/l. The red cell morphology revealed anisocytosis, poikilocytosis, polychromatophilia, and target cells. The peripheral blood smear also showed giant platelets whose size ranged from 8 to 20 μm. There was no evidence of pseudopeni-nucleus formation (Fig); there were no parasites and the WBC morphology was normal. Coagulation studies revealed the bleeding time to be over 12 min (ivy's method), clotting time 8 min,

Fig : Peripheral blood smear showing 2 giant platelets in the centre with an attempt at pseudopeni-nucleus formation.

activated plasma thromboplastin time 33 sec (control 32 sec), prothrombin time 16 sec (control 16 sec), thrombin time 12 sec (control 11 sec), plasma fibrinogen 260 mg/dl (normal range 150-300 mg/dl), factor XII normal, factor VIII 106%, and platelet aggregations with collagen, adenosine diphosphate (ADP) (low and high doses) normal; there was no aggregation with ristocetin. Prothrombin consumption was markedly impaired. Clot retraction was normal and no platelet antibody or circulating anticoagulants were detected. These data together with the history strongly suggested that she was suffering from Bernard-Soulier syndrome. She was incidentally found to have a beta haemoglobin trait (HbA₂, 4.9%).
Bernard-Soulier syndrome is a hereditary disorder of platelet function first described in 1948 by a special form of hereditary thrombocytopenia in which the platelets were of giant size and yet could not produce a normal prothrombin consumption. The platelet counts and clot retraction were normal. The inheritance of the syndrome was described to be autosomal recessive.

The first step of the process of coagulation is adhesion of platelets to the subendothelium of the blood vessel. This leads to aggregation (primary and secondary) and release of platelet factor 3 from platelet membrane, which participates in the clotting process. In BSS the aggregation is defective and hence the bleeding tendency.

BSS belongs to the group of congenital qualitative disorders of platelets, which also include Glanzmann's thrombasthenia. In von Willebrand disease, however, the basic defect is with plasma and, although the picture may mimic BSS, the platelets are normal in size. PTT (K) is abnormal and factor VIII is reduced. All these are correctable by plasma infusion, as against the defect in BSS for which platelet transfusion is the only remedy.

Another condition where giant platelets are found is May-Hegglin anomaly. This is a rare hereditary disorder transmitted as an autosomal dominant trait. Basophilic inclusion bodies (up to 3) called “Dough bodies” are found in the granulocytes of these patients. The patients with this disorder present with a variable bleeding tendency, especially epistaxis and purpura. The platelet count is low and the clot retraction depends on the platelet count. Other investigations including bone marrow examination are usually normal.

When suspected, BSS is diagnosed by a prolonged bleeding time, giant platelets and defective platelet aggregation with ristocetin. It commonly manifests as gastrointestinal haemorrhage, uterine bleeding, epistaxis and purpura. Over 30% of the patients suffering from BSS die due to gastrointestinal haemorrhage. However, this is a rare condition and only about 60 cases have been reported in the world literature.

The treatment of this condition is difficult. Splenectomy and corticosteroids are ineffective. Platelet transfusion during the episode of bleeding is the only effective therapy. However, antplatelet antibodies develop slowly and therefore after some time this therapy becomes useless. It is thus advisable to use platelets from HLA-matched donors, preferably the patient's siblings. The patient should avoid all drugs which impair platelet function and cause gastrointestinal haemorrhage.

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References:

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