GLANZMANN'S THROMBASTHENIA – A CASE REPORT

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Abstract: Glanzmann thrombasthenia (GT) is an autosomal recessive disorder of platelet aggregation caused by quantitative or qualitative defects in integrins αIIb and β3. These integrins are encoded by the *ITGA2B* and *ITGB3* genes and form platelet glycoprotein (GP)IIb/IIIa, which acts as the principal platelet receptor for fibrinogen . Symptoms include purpura, petechiae, bruising, gingival bleeding, epistaxis, and menorrhagia. Platelet transfusion is considered the standard therapy for securing hemostasis. A known case of Glanzmann's thrombasthenia is presented with menorrhagia. After failed medical treatment, she was successfully operated for transabdominal hysterectomy as a last resort.

Key Words: Glanzmann's thrombasthenia, adolescent menorrhagia, dysfunctional uterine bleeding.

Introduction: The prevalence of menorrhagia in adolescent population with bleeding disorders varies between 14% to 48% among the inherited bleeding disorders platelet function defects are an important cause of menorrhagia[1]. Thrombasthenia Glanzmann, named after the Swiss paediatrician Eduard Glanzmann (1887 - 1959), is an uncommon of platelet dysfunction, characterized by a deficiency or defect of the fibrinogen receptor (GPIIb/IIIa) on the platelet surface. The GPIIb/IIIa receptor has an essential function in the adhesion and aggregation of platelets. The platelets of these patients cannot bind fibrinogen and aggregation does not occur. Patients have a severe lifelong risk of bleeding especially during surgical procedures[2]. Recombinant factor VIIa has been introduced as therapeutic alternative and has been suggested to be effective. Recombinant factor VIIa has been used in the prophylactic treatment of bleeding in patients with GT undergoing pelvic surgery, cesarean section and vaginal delivery[3]. We present a case of Glanzmann's

thrombasthenia who presented with menorrhagia since menarche and after failed medical treatment underwent transabdominal hysterectomy.

Cast Report: A 28 years old unmarried female referred from medical department to gynaecology department at the Pakistan Institute of Medical Sciences, with complaint of heavy and prolonged bleeding with passage of clots since two weeks. She had a history of bruises and gum bleeding at 4 months of age. She was diagnosed as Glanzmann's thrombasthenia at the age of 7 years. Her menarche was at the age of 13 years associated with heavy and prolonged bleeding since then. She took multiple hormonal treatments including biphasic and triphasic oral contraceptive pills, progestins and tranexamic acid. There was no history of joint bleeding and epistaxis. She had no history of major surgery. Her parents were first cousins. She developed anemia and received red cell and platelets transfusion several times since her diagnosis of Glanzmann's thrombasthenia. On examination, she was pale. Her blood pressure was 100/70 mmHg. Her abdominal examination was normal. Her lab investigation showed Hb 6.1 g/dl, platelet count of 254,000 and partial thromboplastin time was 34 seconds (control 30 seconds). Her ultrasound of abdomen and pelvis report shows polycystic kidneys and cholelithiasis. Uterus was bulky measuring 11.8 x 4 x 6.1 cm with hematometra.

Her anemia was corrected with red cell transfusion. Parenteral tranexamic acid was started to control bleeding, but her menorrhagia did not settle. Her transabdominal hysterectomy was planned and performed. She received total 35 platelets and three red cell transfusions of which one single donor platelets and one red cell transfusion was done before surgery and the rest postoperatively. Recovery was uneventful. Histopath report showed chronic cervicitis and pill effect on endometrium.

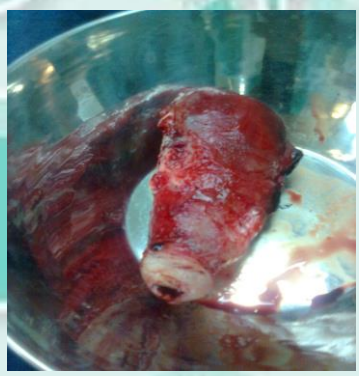

Figure I
Posthysterectomy uterus

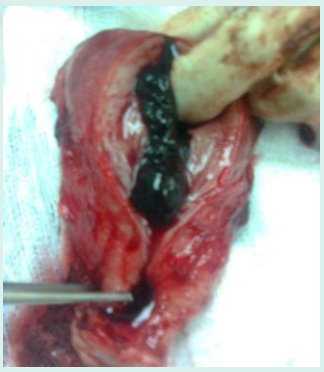

Figure II
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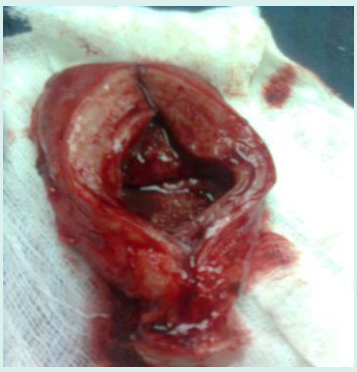

Figure III
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Discussion: Menorrhagia is a common clinical problem and affects the quality of life in majority of women effected. The role of inherited bleeding disorders in adolescent menorrhagia has been well recognized[1]. A teenager requiring hospitalization for heavy periods with hemoglobin less than 10 g/dl is more likely to have underlying bleeding disorder than the adult women. Indeed an underlying coagulation disorder can be found in 1 in 5 girls requiring hospitalization, 1 in 4 with severe menorrhagia and Hb less than 10 g/dl, 1 of 3 needing transfusion and 1 in 2 presenting at menarche. The majority of these are platelet related disorders. Glanzmann's thrombasthenia is one of the bleeding disorders resulting in rare cause of adolescent menorrhagia[4]. Glanzmann's thrombasthenia is an autosomal recessive inherited platelet function defect though quantitatively normal, the aggregation ability of platelets is reduced leading to bleeding episodes requiring transfusion of platelet concentrate. The lab studies show prolong bleeding time with a normal platelet count. The global profile of coagulation is normal. Clinical presentation in the patients with Glanzmann's thrombasthenia is not uniform. Some patients have only minimal bruising while others present with frequent severe and potentially fatal hemorrhages. The site of bleeding is mucocutaneous with purpura, epistaxis, gingival hemorrhages and menorrhagia being the most frequent features. Mostly, the bleeding symptoms appear early after the birth[5]. The incidence of morbidity and mortality associated with GT is largely unknown[6]. Diagnosis and management of

bleeding disorders may possibly reduce the need for surgical intervention leading to positive impact on women and health service[7].

Hormonal therapy is often successful in treating menorrhagia in adolescents with bleeding disorders and OCPs can be used as first line treatment. OCPs have been specifically shown to reduce menstrual blood loss in these patients. If combined OCPs are contraindicated or patient or family does not wish to start oral contraceptives, cyclic progestin can be used as oral medroxyprogesterone 10 mg or norethindrone acetate 5 mg can be given for 10-14 days each month to induce a withdrawal bleed that is cyclic and predictable. The levonorgestrel IUD is effective in decreasing blood loss and should be considered in both nulliparous and parous adolescents[8]. Danazol and gestrinone are seldom prescribed due to androgenic side effects. GnRH analogs although effective in inducing amenorrhea are not prescribed longer than six months due to bone mineralization[4]. NSAIDs should be avoided in bleeding disorders. Antifibrinolytics such as tranexamic acid and aminocaproic acid can reduce menstrual loss by 58%. 1-deamino-8-D-arginine vasopressin (DDAVP) is also effective in treating menorrhagia. In patients with bleeding disorders clotting factor concentrates such as FFPs, platelet transfusion or cryoprecipitate can be given[8].

Recombinant activated factor VII (rFVIIa) is approved by the European Medicines Agency (EMA) and the FDA for the treatment of patients with GT.

Medical management may not always be effective and further treatment may be necessary. In acute life threatening situations the use of a Foley balloon to tamponade the uterine cavity, and use of uterine packing, uterine artery embolization and endometrial balloon ablation can be considered8. Careful and prompt recognition is important in adolescent with menorrhagia. No single therapy or treatment is universal and it must be tailored to adolescent and clinical situation. In our case, there was failure of medical treatment and surgical procedure was considered.

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