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Case Report

Glanzmann's Thrombasthenia with Menorrhagia– A Case Report

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Abstract

Glanzmann's thrombasthenia is a rare congenital bleeding disorder. It is characterized by deficiency or defect of the fibrinogen receptor (GPIIb/IIIa) resulting in defective platelet aggregation. Patients usually present with mucocutaneous bleeding, and menorrhagia and excessive bleeding associated with trauma and/or surgery. Patients have an increased bleeding time and a normal platelet count with abnormal platelet function assays. Platelet transfusion is considered the standard therapy for securing hemostasis. We report a case of Glanzmann's thrombasthenia who presented with menorrhagia since menarche. After medical treatment for 15 years and failure to respond since seven years, transabdominal hysterectomy was done as a last resort.

Keywords: 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]. Glanzmann's thrombasthenia was first documented in 1918 by Dr. Eduard Glanzmann, who described a novel platelet abnormality with defective clot retraction and abnormal appearance on stained film .It has since been more specifically described as an autosomal recessive genetic disorder in which the platelet count is normal or subnormal, the bleeding time is prolonged, and platelet aggregation is deficient or absent. Due to this deficiency of platelet function it manifests as a bleeding disorder characterized by mucocutaneous hemorrhage of varying severity. Globally, it is extremely rare but it has a relatively high incidence in consanguineous populations where intermarriage is common. Patients have a severe lifelong risk of bleeding especially during surgical procedures [2]. Recombinant factor VIIa, which is expensive, 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 was referred from medical ward who presented with complaint of heavy vaginal bleeding and passage of clots since six months. She had a long clinical history of easy and spontaneous bruising, bleeding gums as a child, and heavy menstrual bleeding since menarche. Her parents were first cousins but there was no family history of easy bruising or excessive bleeding. She was diagnosed as Glanzmann's thrombasthenia at the age of 7 years and since then she had received several red cell and platelet transfusions. After menarche, she had been prescribed high dose OCPs (tablet Ovral 50 µg estrogen) once daily for eight years and she remained symptom free. Later on, she was prescribed tablet Famila 28 (35 µg estrogen) twice daily for six years. Along with OCPs, she also received four injections of Depo Provera and progestogens for menorrhagia, but she did not respond well to these drugs and became anaemic. Six months before her admission in hospital her menorrhagia had worsened and in last two weeks, her bleeding became intractable. At the time of presentation in medical ward, she was taking tablet Family 28 two tablets thrice daily with capsule tranexamic acid 1 gm thrice daily. Despite high doses of

OCPs, she did not respond to it and became anaemic and lethargic. Examination was unremarkable except for pallor. Investigations revealed low hemoglobin levels (8.1 g/dl), normal platelet count and partial thromboplastin time was 4 seconds prolonged. On ultrasound of abdomen and pelvis, uterus was bulky measuring 11.8 x 4 x 6.1 cm with hematometra and there were polycystic kidneys and cholelithiasis. In view of failed medical treatment, she and her parents requested for surgical treatment for relief of her complaints. Her transabdominal hysterectomy was planned and done on 9th Dec, 2010. She received one unit of red cell transfusion and eight platelet transfusions preoperatively and two red cell transfusion and 27 platelets postoperatively.

Postoperative course was uneventful. Histopathology report showed chronic cervicitis and pill effect on endometrium.

Discussion

Menorrhagia is a common clinical problem that adversely affects woman's quality of life. The role of inherited bleeding disorders in adolescent menorrhagia is well recognized[1]. 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. 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. The majority of these are platelet related disorders. Glanzmann's thrombasthenia is one of the bleeding disorders and is a rare cause of adolescent menorrhagia [4] as seen in this patient. 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 as was in this patient. Clinical presentation in the patients with Glanzmann's thrombasthenia is not uniform. 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].

There is no known cure for Glanzmann's thrombasthenia. The overall morbidity and mortality have been difficult to estimate due to its rarity, but in most studies the prognosis has proven to be very good. Hemorrhage is the main clinical concern and supportive care is critical. Platelet transfusion is necessary before any invasive procedure or heavy bleeding episode. Platelet alloimmunization against HLA group and/or GPIIb/IIIa glycoproteins is a genuine concern but it is not a contraindication to this therapy. Other than transfusion, management is primarily preventive care. Drugs that affect platelet function, such as NSAIDS or aspirin, should be avoided. Immunizations for hepatitis B should be given due to the infectious risks of frequent transfusion. Regular dental visits are encouraged to avoid gingivitis and gingival bleeding, and supplements are suggested during early childhood and adolescence to avoid iron deficiency anemia Hormonal therapy is often successful in treating menorrhagia in adolescents with bleeding disorders and OCPs can be used as first line treatment. cyclic progestin is an alternative and can be used as oral medroxyprogesterone 10 mg or norethindrone acetate 5 mg for 10-14 days each month to induce a withdrawal bleed that is cyclic and predictable. All these hormones were prescribed to our patient, but she failed to respond to it. The levonorgestrel IUD is effective and should be considered in both nulliparous and parous adolescents [8]. GnRH analogs although effective in inducing amenorrhea are not prescribed longer than six months due to bone mineralization [4]. 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].

Treatment with rFVII is effective in treating menorrhagia due to DT, although hugely expensive [6]. Medical management may not always be effective and further treatment may be necessary [9]. 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 considered [8]. 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.

In summary, Glanzmann's thrombasthenia is a rare inherited bleeding disorder. It is primarily found in a limited number of populations in which consanguineous marriage is common.

Supportive treatment is the best means for care, and bleeding is managed by platelet transfusions. Bone marrow transplants have been used successfully in rare cases. With proper supportive care Glanzmann's thrombasthenia has a very good prognosis.

Conclusion

Glanzmann's thrombasthenia presents a substantial therapeutic challenge when associated with severe and refractory menorrhagia. This case illustrates the prolonged clinical course that may occur despite sequential use of hormonal and antifibrinolytic therapies, with persistent menstrual blood loss ultimately resulting in clinically significant anaemia. The experience underscores the importance of considering an inherited platelet disorder in patients

presenting with severe menstrual bleeding from an early age, particularly when bleeding is disproportionate to gynaecological findings.

Management of such patients requires individualized assessment and close collaboration between haematology and gynaecology, with treatment directed toward both haemorrhage control and prevention of recurrent complications. Conservative and pharmacological strategies should be considered initially; however, their effectiveness may vary considerably between individuals. In patients with persistent, debilitating bleeding despite appropriate medical therapy, definitive surgical management may represent a therapeutic option after careful consideration of reproductive implications and perioperative risks. In the present case, meticulous preoperative preparation and substantial transfusion support permitted hysterectomy to be undertaken without major postoperative complications.

This case further emphasizes the importance of anticipatory haemostatic planning before invasive procedures in patients with platelet function disorders. Early recognition, individualized treatment, appropriate transfusion strategies, and multidisciplinary care remain central to reducing morbidity and improving outcomes in patients with severe Glanzmann's thrombasthenia-associated menorrhagia.

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