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Bariatric Surgery in a Patient with Factor VII Deficiency: A Case Report

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Abstract: Bariatric Surgery in patients with congenital bleeding disorders is a challenge requiring an integrated approach of various departments. Inherited factor VII deficiency is the most common of the rare bleeding disorders, with a wide range of haemorrhagic features. Although bariatric surgery is a common procedure of the 21st century, it is seldom practised in individuals with congenital haemorrhagic disorders. Here, we highlight the course of a patient with coagulation factor VII deficiency who underwent successful bariatric surgery without significant coagulopathy. Perioperative bleeding in the patient's case was successfully prevented by administration of 2 units of Fresh frozen Plasma.

Keywords: Factor VII Deficiency, Bariatric Surgery, Sleeve Gastrectomy, Coagulopathy.

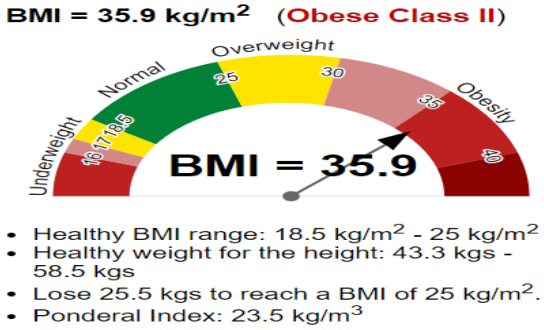
Introduction

Coagulation factor VII (FVII) deficiency is an autosomal recessive bleeding condition resulting from mutations of the gene encoding for FVII, the protein that starts the extrinsic coagulation pathway. Coagulation factor VII deficiency leads to an isolated prolongation of the prothrombin time along with a normal activated partial thromboplastin time. Clinical features of FVII deficiency include bleeding symptoms ranging from mild gum and muscle bleeding to severe life-threatening intracranial and gastrointestinal bleeding. Once FVII deficiency is suspected, the FVII assay can be easily performed. Unlike haemophilia, there is a poor correlation between the level of residual circulating FVII and the severity of bleeding, which makes bleeding in FVII-deficient patients unpredictable.[1]

Surgical operations are challenging, and bleeding is common, often requiring replacement therapy with concentrates of the missing factor. However, clear data regarding therapeutic schedules and experiences in major surgeries are lacking. Bleeding has been reported among a fraction of patients treated with replacement therapy.[2]

Case Report

A 50-year-old woman, who was a known case of factor VII deficiency and had obesity class II (BMI- 35.9) for several years wanted to do laparoscopic sleeve gastrectomy.



She had severe systemic disease and hence was classified as ASA III *(definition: Substantive functional limitations; one or more moderate to severe diseases. Poorly controlled DM or HTN, COPD, morbid obesity (BMI >40), active hepatitis, alcohol dependence or abuse, implanted pacemaker, moderate reduction of ejection fraction, ESRD undergoing regularly scheduled dialysis, history (>3 months) of MI, CVA, TIA, or CAD/stents).* Her past medical history was positive for abdominoplasty and balloon insertion and negative for sleep apnoea. She was a non-smoker and a non-alcoholic.

Several lab tests were done including Random blood sugar test, CBC with automated differentials, TSH, Serology (anti-HCV, HBs Ag, HIV Ag and Ab), PT with INR, Blood group analysis, Rh typing, ECG and chest radiography for which the results were unremarkable. The patient had normal levels of Haemoglobin- 12.2g/dL (normal range 12-15g/dL) and platelets- 3,30,000/mcL(normal range 150000-400000/mcL) ; and an abnormal level of Prothrombin Time- 24.40 (normal range 11.7-15.3) and INR- 1.84 (normal range 0.9-1.1) was noted (An elevated PT or INR indicates that the blood is taking longer to clot than compared to healthy population). Chest radiography showed no abnormalities of the lungs, no pleural effusions or pneumothoraxes. The cardio mediastinal and hilar silhouette was unremarkable. No osseous or upper abdominal abnormalities were detected.

Before surgery 2 units of FFP were transfused. The surgery went uneventful with no complications and no major bleeding episodes. No post-op enoxaparin was given for this patient as is usually done for 21 days for other post-op cases.

Discussion

Bariatric Surgery is feasible among patients with coagulation FVII deficiency only with close monitoring of PT, INR and other blood parameters.

Congenital FVII deficiency is a challenging disorder to manage. The risk of bleeding should not be underestimated during haemostatic challenges, such as major surgery, even in asymptomatic individuals, as the minimal safe levels of FVII:C to ensure haemostasis in different clinical situations has not been well defined.[3,4] Furthermore, there are no standard guidelines for the management of congenital FVII deficiency. However, data from the International Registry of FVII Deficiency have been helpful in providing clinical guidance.[5,6]

In a retrospective analysis of 157 patients with FVII deficiency, the authors described an algorithm for surgical intervention based on age, FVII:C levels, type of procedure, and personal bleeding history. These authors also suggested that not all patients should receive replacement therapy, as the treatment is expensive and not required for all surgical procedures.[3] For our patient, we depended on the INR level to monitor the risk of bleeding and not on the level of FVII. We administered 2 units of FFP (*FFP contains all of the clotting factors, fibrinogen (400 to 900 mg/unit), plasma proteins (particularly albumin), electrolytes, physiological anticoagulants (protein C, protein S, antithrombin, tissue factor pathway inhibitor) and added anticoagulants*) before the surgery, and then we followed INR levels on a timely basis. There were no significant incidences of intraoperative or postoperative bleeding noted.

Conclusions

Bariatric surgery (sleeve gastrectomy) is feasible among patients with coagulation FVII deficiency with close monitoring of INR and pre-op administration of FFP.

Non administration of anticoagulants (enoxaparin) post-op did not have any effect on the morbidity or outcome for our patient.

References

1. Lapecorella M, Mariani G, International Registry on Congenital Factor VII Deficiency. Factor VII deficiency: defining the clinical picture and optimizing therapeutic options. Haemophilia. 2008;14(6):1170-1175.
2. Mariani G, Konkle BA, Ingerslev J. Congenital factor VII deficiency: therapy with recombinant activated factor VII -- a critical appraisal. Haemophilia. 2006;12(1):19-27.
3. Benlakhal F, Mura T, Schved J, Giansily-Blaizot M; French Study Group of Factor VII Deficiency. A retrospective analysis of 157 surgical procedures performed without replacement therapy in 83 unrelated factor VII-deficient patients. J Thromb Haemost. 2011;9(6):1149-1156.
4. Giansily-Blaizot M, Verdier R, Biron-Adréani C, et al. Analysis of biological phenotypes from 42 patients with inherited factor VII deficiency: Can biological tests predict the bleeding risk? Haematologica. 2004;89(6):704-709.
5. Mariani G, Dolce A, Batorova A, et al. Recombinant, activated factor VII for surgery in factor VII deficiency: A prospective evaluation - the surgical STER. Br J Haematol. 2011;152(3):340-346.
6. Napolitano M, Di Minno M, Batorova A, Mariani G. Women with congenital factor VII deficiency: Clinical phenotype and treatment options from two international studies. Haemophilia. 2016;22(5):752-759.