

Case Series of Pectoral Hematoma Associated with Enoxaparin Use in Elderly Patients

Mehmet Sami Islamoglu¹; Betul Borku Uysal^{1*}; Suna Koc²; Serap Yavuzer¹; Mahir Cengiz¹

¹Department of Internal Medicine, Biruni University Medical Faculty, Istanbul, Turkey.

²Department of Anesthesiology and Reanimation, Biruni University Medical Faculty, Istanbul, Turkey.

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***Corresponding Author:** Betul Borku Uysal, Department of Internal Medicine, Biruni University Medical Faculty, Istanbul, Turkey.
Email: betulborku@yahoo.com.

Abstract

Venous thromboembolism is among the common and preventable cardiovascular syndromes. The risk of thromboembolism is increased in elderly and patients with renal failure, and the risk of bleeding due to the use of anticoagulants also increases. In these cases enoxaparin use for profilactic and treatment dosages. After anticoagulant using pectoral hematoma was diagnosed by ultrasonography and computed tomography of the thorax in patients. With the discontinuation of the treatment, the size of the hematoma decreased and the treatment change was sufficient. In this article, 3 cases of pectoral hematoma due to enoxaparin are presented in the light of the literature, especially in this period when the use of anticoagulants is increasing.

Keywords: Low Molecular Weight Heparin; Heparin; Pectoral muscles; Bleeding.

Introduction

Venous thromboembolism is seen commonly and preventable disease among cardiovascular syndromes. Embolism is more common in elderly patients and patients with renal failure, with a mortal course and the risk of bleeding is higher [1]. Enoxaparin, a member of the Low Molecular Weight Heparin (LMWH) group, is used in the prevention of clot formation such as deep vein thrombosis, pulmonary embolism and the treatment of myocardial infarction [2]. Compared to unfractionated heparin, the risk of bleeding, development of osteoporosis and heparin-induced thrombocytopenia are seen lower. Additionally, it is usually preferred firstly instead of heparin due good bioavailability, easy usage and long half-life. Intramuscular bleeding is a serious and mortal complication of anticoagulant treatments [3]. Although anterior chest wall bleeding is less than pneumothorax and hemothorax, it occurs commonly in trauma. Spontaneous anterior chest wall bleeding has been reported rarely associated with anticoagulant therapy [4]. In this article due to its rarity, three cases of pectoral hematoma are presented in the light of the literature in the period of anticoagulant use is increasing, especially in co-morbid patients.

Case Reports

Case-1

87-year-old male patient with a known history of hypertension and cerebrovascular disease was admitted to the emer-

gency service with dyspnea and general condition disorder. The patient was taken to the intensive care unit with diagnoses of pneumonia and sepsis. LMWH treatment enoxaparin was started as a renal treatment dosage due to having past cerebrovascular event. In the patient who received enoxaparin for 1 month, swelling and pain in the anterior thorax were detected and hematomas of 3 santimeter (cm) on the right and 2.5 cm on the left were detected in the bilateral pectoral region by thorax computed tomography (CT) (Figure 1a). The four erythrocyte suspension transfusions were given for anemia. LMWH treatment was discontinued. After thrombocytopenia were given four fresh frozen plasma. Regression was observed after seven day in the control thorax CT of the patient (Figure 1b). Pneumonia and sepsis progressed. The patient died from septic shock after ten day

Case-2

A 92-year-old female patient with Alzheimer's disease, who did not have oral intake and was fed with a nasogastric tube, was admitted to the emergency department with fever and general condition disorder. The patient was taken to the intensive care unit with starting noninvasive mechanical ventilation due to urinary infection. In the patient with high thrombosis risk, enoxaparin treatment was initiated at a prophylaxis dose. On the 15th day of treatment, 5.5x3 cm hematoma was detected with ultrasonography when swelling was seen in the anterior chest wall. The patient, whose LMWH treatment was discontinued, was followed-up and discharged after ten days.

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Figure 1: (a) Bilateral pectoral haematoma images in computed thorax tomography.

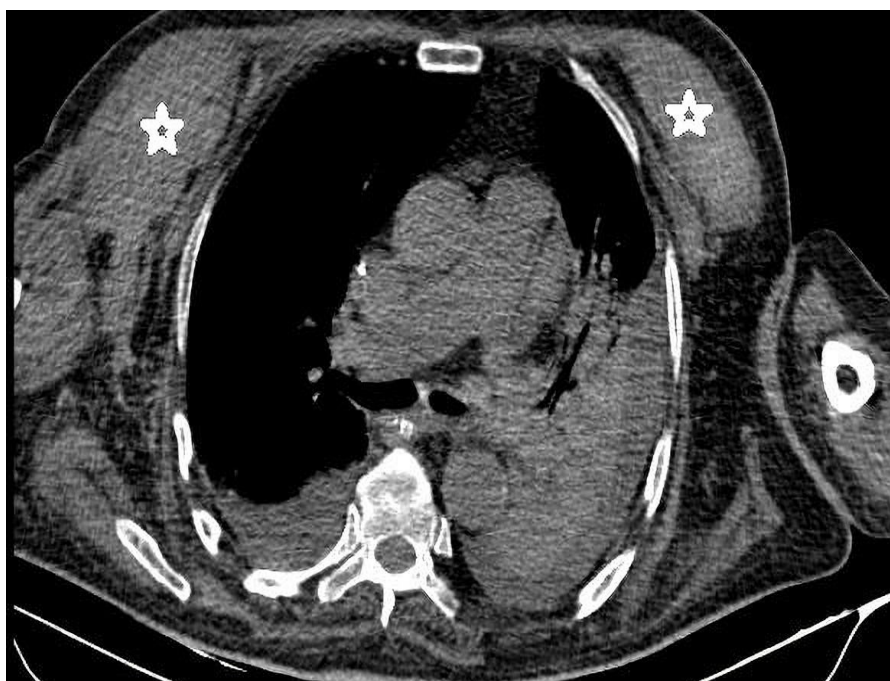


Figure 1: (b) Regression of pectoral haematoma after enoxaparin discontinued.

Case-3

67-year-old male patient was admitted to the internal medicine outpatient clinic with weakness, shortness of breath, and chest pain. Filling defect consistent with pulmonary embolism was detected. The patient was started on enoxaparin therapy at a dosage of 1 miligram/kilogram (2x8000 IU). Higher dose anticoagulant treatment was initiated because the patient's body mass index was over 30. On the seven day of enoxaparin treatment, swelling was detected in the left chest, and a dense content compatible with hematoma with a size of 55x60 mm was detected in the muscle planes of the left pectoral region. Bemiparin treatment, one of the anti factor Xa inhibitors, was started by discontinuing enoxaparin. With the regression of the hematoma, it was continued with oral anti-

coagulant therapy.

Discussion

A rare complication of LMAH therapy, pectoral hematoma was detected in our three elderly patients with different diagnoses. Laboratory findings and enoxaparin doses were shown in the (Table 1). Hematomas were resolved by the cessation of treatment and change of anticoagulant therapy.

Enoxaparin inhibits Factor Xa like heparine and is effective at low doses by binding less to plasma proteins [2]. Anti-factor Xa measurement is recommended for dose adjustment in special groups of patients such as pregnancy, renal insufficiency and

Table 1: Laboratory findings and enoxaparine dosages in cases of pectoral haematoma.

Laboratory results	Case-1	Case-2	Case-3
Leukocyte (K/uL)	11.920	7200	9000
Haemoglobin (g/dl)	7.0	8.0	13.6
Platelet (K/uL)	72.000	241.000	237.000
Protrombin Time (second)	12.7	15.6	12
International normalized ratio (INR)	1.25	1.56	1.0
Active protrombine time (second)	62.8	29.6	36
Creatinin (mg/dl)	1.51	1.46	0.67
eGfr(mililiter/minute)	43.9	33.5	118
Enoxaparin Dosage	6000Anti-Xa IU/0.6ml 1x1	4000 AntiXa IU/0.4ml 1x1	8000 AntiXa IU/0.8 ml 2x1
Duration of enoxaparine use when pectoral haemotoma occurs	30 th day	15 th day	7 th day

obesity [5]. It has been shown that LMWH treatment is not non-inferior to unfractionated heparin in pulmonary embolism and deep vein thrombosis, and it is used safely instead of heparin in many areas [5]. Hematuria due to enoxaparin, gastrointestinal bleeding and retroperitoneal bleeding have been reported more frequently in the literature [6,7,8]. As a case report pectoral hematoma with enoxaparin was reported by Ozpolat et al. and bleeding in the anterior chest wall was reported by Subedi et al [9,10].

Conclusion

When venous thromboembolism is not treated, it causes high mortality and morbidity. Low molecular weight heparin therapies, which are commonly used in treatment, have fewer side effects than unfractionated heparin. Despite its advantages, because of the risk of bleeding, enoxaparine should be used with caution and at appropriate doses in elderly and patients with renal insufficiency.

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Author's Contribution

Mehmet Sami Islamoglu: Conceptualization, Writing- Original draft preparation

Betul Borku Uysal: Writing- Original draft preparation
Suna Koc: Data curation

Serap Yavuzer: Data curation, Reviewing

Mahir Cengiz: Writing

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