

Rare complication of nadroparin injections: skin necrosis and heparin-induced thrombocytopenia syndrome

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Abstract

We described a rare case of nadroparin-induced skin necrosis with thrombocytopenia. LMWH therapy is used in thrombosis prophylaxis, it is important to recognize that skin necrosis can be a part of HIT early in its course and change heparin or LMWH to non-heparin anticoagulants such as direct thrombin III inhibitors.

Rare complication of nadroparin injections: skin necrosis and heparin-induced thrombocytopenia syndrome

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Key Clinical Message

In patient receiving low molecular heparin treatment, skin necrosis can be a part of HIT early in its course and change heparin or LMWH to non-heparin anticoagulants such as direct thrombin III inhibitors is mandatory.

Abstract:

We described a rare case of nadroparin-induced skin necrosis with thrombocytopenia. LMWH therapy is used in thrombosis prophylaxis, it is important to recognize that skin necrosis can be a part of HIT early in its course and change heparin or LMWH to non-heparin anticoagulants such as direct thrombin III inhibitors.

A 75-yr-old obese woman developed one 20 cm area of nonpalpable purpura with surrounding erythema and hemorrhagic vesicles on the central abdominal part (Fig. 1). These occurred 8 days after nadroparin 2850 U injection for thromboembolic prophylaxis because of deep vein thrombosis and concomitant metastatic neoplasia of liver and intrahepatic ducts.

There was no pruritus or surrounding pain. The platelet count decreased from 217 000/microl at hospitalization to 68 000/microl when the skin necrosis developed. Protein S, protein C, prothrombin time, and thrombin time were normal. PF4/heparin antibodies were positive 1:32. Based on the clinical picture nadroparin-induced skin necrosis was diagnosed. We also clinically suspected a high probability of type II heparin-induced thrombocytopenia (HIT) as a score of 8 points according to the 4T's HIT score system was calculated. All contact with heparin (including catheter washing) and LMWH were stopped. Lower extremity Doppler ultrasound confirmed acute iliofemoral thrombosis of the right leg, thus anticoagulation was required. After changing nadroparin to fondaparinux and later on to oral apixaban, the lesions improved and eventually healed. Thrombocyte count returned to normal 11 days after discontinuation of nadroparin.

Skin necrosis is a rare complication of low molecular weight heparin (LMWH), although for heparin injections it is a well-described complication. In the literature dalteparin and enoxaparin are mostly described LMWH which cause HIT,¹ nadroparin induced skin necrosis is rarely published.²⁻⁴ Skin necrosis immediately suggests the presence of HIT⁵ as this develops due to intradermal microvascular thromboses. The absolute risk for HIT is 0.2% with LMWH and 2.6% with unfractionated heparin.⁶ Often the first manifestation of HIT is thrombocytopenia, occurring in up to 90% of those affected. Thrombosis occurs in up to 50%⁷ of patients, more frequently due to venous than to arterial thrombi, and can lead to skin necrosis and organ infarction. Mortality from HIT, mostly due to thrombosis, can be as high as 20%, and approximately 10% of patients require amputations or suffer other major morbidities.⁸⁻¹⁰ Protein C and S deficiencies greatly increase the risk of skin necrosis and should be measured if skin necrosis follows LMWH injection.

Heparin or LMWH induced skin necrosis is generally a benign condition, which resolves after stopping the culprit drug, but skin necrosis can just be part of a clinical spectrum of thrombotic complications, which are potentially life-threatening.¹ The decisive diagnostic procedure in heparin-induced necrosis is HIT antibody testing, histological examination if necessary and the chronological connection between the initiation of heparin/LMWH and appearance of skin necrosis, thrombocytopenia, which usually occurs 5–10 days later at the site of injection (although there are the description of distant lesions development).

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Author 3: analysis and interpretation of data, final approval of the version to be published. Author 4: acquisition of data, final approval of the version to be published. Each author participated sufficiently in the work to take public responsibility for appropriate portions of the content.

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Figure 1. Skin necrosis on the abdomen at the site of nadroparine injection, which developed after 8 days of treatment

