Clinical Case Reports

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CLINICAL IMAGE

Subcutaneous hematomas from prophylactic heparin use

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Key Clinical Message

Heparin is an anticoagulant, which is frequently used in hospitalized patients for prophylaxis of deep vein thrombosis (DVT). Subcutaneous administration of heparin may lead to complications such as bruising, hematoma, and pain at the injection site. Hematomas can develop without visible bruising, as in our case.

Keywords

Hematoma, heparin, prophylaxis.

A 45-year-old White woman with a history of end-stage renal disease (ESRD) on peritoneal dialysis, diabetes mellitus type 2, and essential hypertension was admitted to the hospital for the workup of new-onset symptomatic hypotension. Hypotension persisted despite discontinuation of all her home antihypertensives, starting midodrine, and adjustment of peritoneal dialysis prescription. Extensive investigations were undertaken, and electromyography demonstrated severe axonal sensorimotor neuropathy with demyelinating changes. She was treated for possible chronic inflammatory demyelinating polyneuropathy-related neurogenic hypotension with intravenous immunoglobulin and showed partial response. During the course of her prolonged hospital stay, she complained of right-sided abdominal pain. Because of the concern for peritonitis in a peritoneal dialysis patient, an ultrasonogram was obtained which demonstrated multiple hypoechoic areas with a hyperechoic border suggestive of hematomas at the site of subcutaneous heparin injections, which she was receiving for DVT prophylaxis (Fig. 1). The coagulation panel was significant for a mildly elevated activated clotting time of 160 sec (ref: 94–120) and normal prothrombin time and international normalized ratio (10.7 sec and 1.0, respectively). Heparin is primarily metabolized in the liver and reticuloendothelial system, and at therapeutic doses, renal function is not known to affect elimination [1]. Therefore, ESRD status of our patient is unlikely to be the cause here. Interestingly, there was no significant bruising on her abdomen. Pain improved with switching the injection site and with slow injections. Her peritoneal fluid cell count was not consistent with peritonitis. It has to be noted that current data on the effect of slow versus fast injection, local dry cold application on the development of bruising and hematoma formation at the site of subcutaneous heparin injection are limited and inconclusive [2]. In addition to subcutaneous hematomas, clinicians need to be aware of prophylactic heparin-induced rectus abdominis hematomas with inadvertent intramuscular injection, especially in thin patients and those with a tendency to paroxysmal cough. Injection at a 30°–45° angle from the skin surface or changing the injection site to thigh may be beneficial in such patients [3, 4].

Informed Consent

Informed consent has been obtained for the publication of this clinical image.

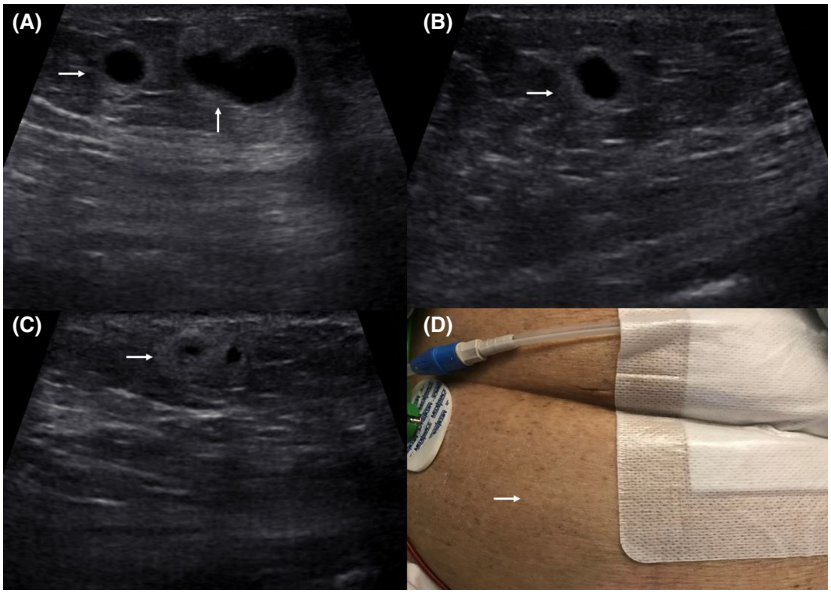

Figure 1. (A, B, C) Abdominal ultrasound demonstrating subcutaneous hematomas [hyperechoic areas with a fluid-filled hypoechoic center]; (D) site of heparin injections with no significant bruising.

Conflict of Interest

The authors have declared that no conflict of interest exists.

Authorship

Both the authors have made substantial contribution to the preparation of this manuscript. AK: acquired the images and drafted the manuscript; DB: performed literature search and revised the manuscript for critically important intellectual content.

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