Dalteparin sodium

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Rectus abdominal muscle haematoma, left gluteal muscle haematoma and haemoperitoneum: 3 case reports

In a retrospective descriptive study conducted in September 2020, 3 patients including 2 women and 1 men aged 52–77 years were described who developed hematomas of the rectus abdominal muscles and hemoperitoneum (2 patients) and hematoma of left gluteal muscles (1 patient) while receiving anticoagulant treatment with dalteparin sodium for COVID-19 [*routes and duration of treatments to reaction onsets not stated; not all dosages stated*].

Case 1: The 69-year-old woman was transferred following an abdominal trauma that resulted upon falling from the same level in a COVID-19 hospital. She had been receiving anticoagulant therapy with dalteparin sodium. At admission, clinical exam revealed the following: somnolence, pallor, abdominal pain, systolic BP 110mm Hg, pulse rate 90 beats/min and oxygen saturation 94%. She had been receiving oxygen 10 L/min. An abdominal CT showed hematoma of the abdominal wall, haemoperitoneum and active haemorrhage. The laboratory investigation revealed the following: haemoglobin of 4 8 g/dL, WBC count 30 040/mmc, neutrophil count 27560/mmc, Ht 14,10% [sic], platelet count 57 000/µL, fibrinogen 131 mg/dl, SARS-CoV-2 positive, activated partial thromboplastin time 32.5s, INR 2.29, creatine kinase (CK) 966 UI/L, CK-MB 54.4 UI/L, D dimer 6 59 µg/mL, IL-6 1531 pg/mL, ferritin 8564 ng/mL, pro-brain natriuretic peptide 1680 pg/mL, procalcitonin 0.79 ng/mL, PCR 1.55 mg/L, uric acid 9 mg/dl, troponin-T 139.8 pg/mL, albumin 2.33 g/dL, amylase 218 UI/L, cholesterol 104.9 mg/dL, alkaline phosphatase 58 UI/L, glucose 213.7 mg/dL, sodium 156 mmol/L, potassium 3.53 mg/dL, proteins 3.87 g/dL, AST 1125.6 UI/L, ALT 1660 UI/L and urea 151.9 mg/dL. She had disseminated intravascular coagulation. She received re-eqilibration treatment and blood transfusions. She was moved to the operating room. Inraoperatively, rectus abdominal muscles haematoma and haemoperitoneum with non-coagulated blood were noted. Upon investigations no major bleeding source could be identified; however, multiple blood extravasations through the muscle fibers were noted. Consequently, she underwent evacuation of the haematoma and the haematoperitoneum lavage. Additionally, haemostasis was performed and haematostatic sponges and powders were applied followed by drainage. Postoperatively, she continued to receive blood transfusions, plasma [fresh frozen plasma] and antihaemorhhagics; however, her condition continued to deteriorate. Subsequent ultrasound revealed the recurrence of haemoperitoneum. She underwent second surgical intervention 24 hours following the first intervention. Shortly thereafter, she developed multiorgan dysfunction syndrome and died at 48 hours.

Case 2: The 52-year-old man was transferred from a COVID-19 hospital following a left gluteal area trauma after falling. He had been receiving high doses of dalteparin sodium [Fragmin] 15000IU every 24 hour. Clinical examination revealed gluteal haematoma, altered general state, low BP, tachycardia, left gluteal hematoma and oliguria. The laboratory tests indicated the folowing: Hb 4 9 g/dL, WBC count 15 970/mmc, neutrophil count 14370/mmc, Ht 18% [sic], platelet count 99000/µL, fibrinogen 162 mg/dl, SARS-CoV-2 positive, activated partial thromboplastin time 50.70, INR 2.29, creatine kinase (CK) 633 UI/L, CK-MB 37.6 UI/L, D dimer 0.27 µg/mL, IL-6 782.9 pg/mL, ferritin 1808 ng/mL, pro-brain natriuretic peptide 1138 pg/mL, procalcitonin 0.19 ng/mL, PCR 1.49 mg/L, uric acid 10 mg/dl, troponin-T 68.28 pg/mL, albumin 3.12 g/dL, calcium 7.55 mg/dL, creatinine 0.92 mg/dL, glucose 549 mg/dL, lactate dehydrogenase 471 UI/L, proteins 4.93 g/dL, and urea 243 mg/dL. He had disseminated intravascular coagulation. The left gluteal area ultrasonography showed large hematoma; however, no active bleeding source could be found. Investigations revealed he had COVID-19 pneumonia affecting more than 58% of the lungs. He received blood transfusion, plasma, antihaemorrhagics, norepinephrine [noradrenalin], oxygen therapy, local ice application, fluid and electrolyte re-equilibration. Initially, his status improved; however, 24 hours following the admission, he became unstable and transferred to the ICU. After, 24 hours, he developed cardiac arrest. He did not respond to resuscitation and died.

Case 3: The 77-year-old woman was transferred from a COVID-19 hospital with hematoma of the rectus abdominal muscles and hemoperitoneum. She had been receiving large doses of dalteparin sodium. Clinical examination revealed acute abdomen and hypotension under unspecified vasopressor support. The laboratory tests indicated the folowing: Hb 4 9 g/dL, WBC count 30 510/mmc, neutrophil count 27580/mmc, platelet count 45 000/mmc, fibrinogen 40 mg/dl, SARS-CoV-2 positive, activated partial thromboplastin time 85.5s, INR 5.59, CK 105 UI/L, CK-MB 47.9 UI/L, D dimer 1.06 µg/mL, IL-6 1115 pg/mL, ferritin 34806 ng/mL, pro-brain natriuretic peptide 1360 pg/mL, procalcitonin 0.59 ng/mL, PCR 1.02 mg/L, uric acid 7.3 mg/dl, troponin-T 149.5 pg/mL, albumin 0.65 g/dL, cholesterol 25.6 mg/dL, calcium total 8.88 mg/dL, creatinine 1.92 mg/dL, proteins 1.16 g/dL AST 245 UI/L and urea 134 mg/dL. She had disseminated intravascular coagulation. She was transferred to the operating room. Intraoperatively, hemoperitoneum, rupture of the lower third of the rectus abdominal muscle and a haematoma was in the prevesical space. Thereafter, evacuation of the hemoperitoneum and the prevesical hematoma was done. She also underwent lavage, multiple peritoneal drainage and Mikulicz hemostatic mesh was applied. She received blood transfution, plasma, antihaemorrhagics, norepinephrine and oxygen therapy. Despite the intervention, her condition continued to deteriorate. She developed cardiac arrest 9 hours following the surgical intervention. She was treated with resuscitation without response. She was declared dead.

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