

Heparin

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Delayed retroperitoneal haemorrhage: 3 case reports

In a case series, two men and one woman aged 62–81 years were described, who developed delayed retroperitoneal haemorrhage (RPH) during treatment with heparin as anticoagulant therapy.

Case 1: The 71-year-old man, who had hypertension was diagnosed with COVID-19. Subsequently, he experienced respiratory failure and was subjected to salvage veno-venous ECMO on day 10 after COVID-19 identification. He received bolus venous injection of heparin 25 U/kg. On the day 4 of ECMO, the assessment was satisfactory, tracheal intubation was replaced, and rehabilitation exercise was started. However, after 8 day of ECMO, he complained of abdominal pain, and a blood evaluation showed a hemoglobin of 60 g/L, hematocrit of 26.2% and a lactic acid concentration of 18 mmol/L. An abdominal CT showed RPH of 10.4cm × 8.6cm × 13.2cm. Therefore, his heparin therapy was stopped and he received 14 units RBCs and fresh-frozen plasma. Digital subtraction angiography showed bleeding in the right lumbar artery, which was treated by performing transcatheter embolization. After corrective treatment, RPH stabilised. Follow-up ultrasound and CT scan did not find any deterioration and confirmed that the hemorrhage was stable.

Case 2: The 81-year-old woman, who had hypertension was diagnosed with COVID-19. Subsequently, she experienced respiratory failure and was subjected to salvage veno-venous ECMO on day 28 of confirmed COVID-19. She received bolus venous injection of heparin 25 U/kg. Following heart failure with veno-venous ECMO, veno-arterial-venous ECMO was given on the day 2 to day 6. After 9 days of ECMO, it was noted that the circuit flow rate was low and was accompanied by a decrease of Hb. Her hematocrit was 23.4%. A CT scan showed an RPH of 10.6 cm × 10.3cm × 17.3cm. Therefore, her heparin therapy was stopped and she received 6 units of red blood cells and fresh-frozen plasma. Digital subtraction angiography showed an arterial haemorrhage in the right lower right lumbar artery, which was treated by transcatheter arterial embolization. After corrective treatment, RPH stabilised. Follow-up ultrasound and CT scan did not find any deterioration and confirmed that the hemorrhage was stable.

Case 3: The 62-year-old man, who had diabetes was diagnosed with COVID-19. Subsequently, he experienced respiratory failure and was subjected to salvage veno-venous ECMO on day 31 of confirmed COVID-19. He received bolus venous injection of heparin 50 U/kg. On day 13 of ECMO, he developed digestive tract bleeding and bloody stools. Subsequently, he was diagnosed rectal cancer and surgery was performed with ECMO support. Thereafter, mechanical ventilation was withdrawn and replaced by awake ECMO. After 18 days of ECMO, he developed abdominal pain and decrease in blood pressure was noted along with heart rate 110-135 bpm. His Hb also dropped from 77 g/L to 44 g/L and the hematocrit was 21.1%. Ultrasound showed oedema of the psoas muscle, and a CT scan showed an RPH with a size of 8.2cm × 4.2cm × 6.5cm. Therefore, his heparin therapy was stopped and he received 8 units of RBCs. After corrective treatment, ultrasound and abdominal CT scan showed a stable hemorrhage. Subsequently, haematoma was noted. Therefore, 7 days after the discovery of haematoma, heparin and rehabilitation exercises were resumed. There was no significant change in the RPH after follow-up until discharge.