



Massive Retroperitoneal Haematoma Following Bone Marrow Trephine Biopsy: An Unexpected Fatal Complication

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Clinical image description

A 30 year old female, with clinical suspicion of chronic myeloid leukaemia, was advised to have a Bone Marrow (BM) triphene biopsy to establish the diagnosis. The BM trephine biopsy was done from the right posterior superior iliac spine. 10-12 hours following the BM biopsy, she complained of severe abdominal pain and distension along with a few episodes of

non-bilious vomiting. A general physical examination revealed nothing significant but tachycardia. On examination, the abdomen was distended with tenderness present in the right lumbar and iliac fossa.

Blood investigations revealed a haemoglobin level of 6.6 g/dl, a platelet count of 100.7×10^9 cells/L, a total leukocyte count of 36.49×10^9 cells/L, and a normal coagulation profile. A con-



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trast-enhanced computed tomography scan of the abdomen was done, which showed a 17 x 9.5 x 21 cm sized mixed density lesion in the right lumbar and retroperitoneal region on both sides with an air pocket within, encasing the aorta and inferior vena cava, causing compression of the latter. The mass effect of this enormous lesion resulted in the right kidney being displaced superiorly, while the duodenum and head of pancreas were displaced anteriorly (Figure 1).

A hemorrhagic aspirate was seen on a diagnostic aspiration done after radiological workup, thus establishing the diagnosis of a large retroperitoneal haematoma. On non-resolution of symptoms with conservative treatment, a further computed tomography angiography of the abdomen and pelvis was carried out to plan for any possible therapeutic embolisation. But an active bleeding point could not be visualised (Figure 2).



Figure 1: Computed Tomography scan of the abdomen axial section (A) and coronal section (B) showing massive retroperitoneal hematoma.



Figure 2: Computed Tomography angiogram of the abdomen with no obvious source of bleeding.

Thereafter, under local anaesthesia, ultrasound-guided drain placement was done in the retroperitoneum through the right lumbar region, which was followed by gradual drainage of 2600ml of haematoma. Subsequently, the patient improved symptomatically. Drain output decreased gradually, and the drain was removed after radiological confirmation of the resolution of the haematoma. The patient was discharged in healthy condition on the 5th day after BM triphene biopsy and was asymptomatic on follow-up after 1 month while she continued her treatment for chronic myeloid leukaemia.

Bone marrow biopsy is a routine yet vital diagnostic tool used widely in haematological conditions, which is generally considered a safe procedure with a low risk of morbidity. The increased risk of retroperitoneal haematoma after BM biopsy is seen in patients with risk factors like myeloproliferative neoplasm, quantitative or qualitative platelet abnormalities, ongoing antiplatelet therapy, coagulopathy, and obesity. Though rare, bone marrow biopsy may occasionally cause a life-threatening retroperitoneal haematoma, which may not be immediately apparent and warrants rapid appropriate evaluation. One must know that even with a normal platelet count and coagulation profile, refractory massive bleeding can occur subsequent to bone marrow biopsy. Contrast-enhanced computed tomography is the best investigation to diagnose this rare complication, and in refractory cases, a computed tomography angiography might aid in the location and endovascular management of the bleeding site. Our case highlights a rare yet fatal complication of extensive retroperitoneal haematoma following BM trephine biopsy, which needs prompt intervention.

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Research involved a single human participant.