Abdominal mass causing acute kidney injury as a manifestation of acute myeloid leukaemia

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DESCRIPTION

A 48-year-old previously healthy woman presented to the emergency department due to asymmetric oedema of the limbs, having been diagnosed with deep venous thrombosis of the left common femoral vein. Two weeks later, she went to her family physician by worsening oedema, asthenia and feeling of abdominal distension. CT of the abdomen and pelvis showed multiple adenopathies and an heterogeneous pelvic mass with 11×11×9.5 cm (figure 1), involving abdominal large vessels, colon, uterine appendages and peritoneum, causing bilateral ureterohydronephrosis. She was referred to the emergency department, where white blood cell count of 25 300/μL with 53% blasts, oliguric acute renal injury and hyperkalaemia were identified. Although urinary diversion catheters were bilaterally placed, haemodialysis was needed. Bone marrow aspirate revealed 45% of immature cells compatible with acute myeloid leukaemia (AML). Cytogenetic analysis identified inversion 3 (inv3) and genetic analysis detected mutation of nucleophosmin 1 (*NPM1*), without *fms*-like tyrosine kinase 3 internal tandem duplication (*FLT3*-ITD).

A core needle biopsy of the abdominal mass was made. The histological examination revealed densely cellular neoplasm consisting of a diffuse proliferation of medium to large cells with scant cytoplasm. Occasional cells had more abundant granular cytoplasm. The nuclei

were hyperchromatic with round to irregular contours and inconspicuous nucleoli (figure 2A). The cells showed diffuse immunoreactivity for myeloperoxidase (figure 2B), lysozyme and c-Kit (figure 2C). The morphologic and immunophenotypic findings were consistent with the diagnosis of myeloid sarcoma.

Induction chemotherapy according to EORTC-GIMENA AML12 protocol was started, with adjusted doses due to kidney failure. After one cycle of induction therapy, there were no circulating blasts, less than 5% of immature cells in the bone marrow and a small reduction of the size of the granulocytic sarcoma. Radiotherapy, directed to the abdominal mass, was initiated, but it had to be stopped later because of ineffectiveness and adverse effects. Our patient had grade 2 radiation enteritis, grade 4 oral mucositis, multiple infectious intercurrents and at discharge her Eastern Cooperative Oncology Group (ECOG) performance status (PS) was 3. Taking this into account, it was decided to start 5-azacytidine to maintain response, but she relapsed, with reappearance of circulating blasts, after six cycles. By this time, she had an ECOG PS of 0, so therapy with fludarabine, cytarabine, idarubicin (FLA-IDA) was immediately started as second induction cycle.

Myeloid sarcoma is a rare tumour consisting of myeloid blasts occurring at extramedullary anatomic sites, which can be the presentation of any subtype of AML. Presenting signs or

Figure 1 Heterogeneous pelvic mass on axial (A), coronal (B) and sagittal (C) plans of abdominal CT scan.

Figure 2 Histology (H&E) showing a diffuse densely cellular proliferation of medium to large cells with scant cytoplasm and occasional cytoplasmic granules (A) and immunohistochemistry showing myeloperoxidase (B) and c-Kit expression (C).

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symptoms are mainly due to the mass effect of the tumour and dysfunction of the organ that is affected. The mainstay treatment of myeloid sarcoma is systemic chemotherapy, according to the subtype of AML. Surgery or radiotherapy may be necessary to correct organ disfunction or obstruction.¹⁻³

Learning points

- ▶ Myeloid sarcoma should be suspected when a mass is discovered in a patient with acute myeloid leukaemia.
- ▶ Myeloid sarcoma symptoms are mainly due to the mass effect of the tumour.

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