Pelvic neuroblastoma

Case 5926

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Section: Paediatric radiology
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Patient: 30 months, female

Clinical History:

A 30-month-old girl presented with a painful abdominal mass, diarrhoea and fever. She was noted to have elevated urine catecholamine and dopamine levels. Imaging showed a large necrotic mass with metaiodobenzylguanidine (MIBG) uptake arising from the pelvis.

Imaging Findings:

A 30-month-old girl presented with 2-week history of a painful abdominal mass and 6-week history of diarrhoea. She also had fever for unknown duration. Her urine catecholamine and dopamine levels were elevated. Abdominal radiograph showed a large homogenous soft tissue mass with no calcification arising from the pelvis and displacing the bowel loops superiorly (Fig 1). CT scan showed a large 10 x 7 cm heterogeneous enhancing mass with central necrotic areas and small foci of calcification arising from the pelvis (Fig 2). The pelvic mass had displaced the common iliac vessels (Fig 2 and 3) and bowel loops, and indented the superior aspect of the urinary bladder (Fig 4). The mass was in contact with the lower lumbar and upper sacral spine with no intraspinal extension or bony involvement (Fig 2 and 4). There was no evidence of local invasion or abdominopelvic metastasis. MIBG scan showed increased uptake in the mass. CT scan of the thorax, radionuclide bone scan and bone marrow trephine biopsy showed no evidence of metastasis. The mass was resected and intraoperatively, it was noted to arise from the presacral space. The adjacent structures were not adherent to the mass and were easily separated. Histology confirmed the mass to be neuroblastoma. The patient recovered well postoperatively with no neurological complication.

Discussion:

Neuroblastoma is the most common extracranial solid tumour in infancy. Most than half of the tumours occur in the first 2 years of life. The tumour arises from neural crest cells and can therefore occur anywhere along the sympathetic chain. The tumour most commonly arises from the adrenal gland. Rarely, the tumour arises from the pelvis with reported incidence ranging from 2% to 7.5%. Pelvic tumours, along with cervical and thoracic tumours, are reported to have better prognosis than abdominal tumours. The favourable outcome of pelvic tumours may be due to the different biologic behaviour and lower incidence of advanced stage disease. There are also reports of spontaneous regression and maturation of pelvic tumours. Although pelvic tumours have more favourable prognosis and excellent survival rate, resection of these tumours is notoriously difficult technically and is associated with high morbidity from neurological complication. The reported complication rate is as high as 57%. Complications include permanent neurological damage like loss of bladder and bowel function as well as paralysis of the lower limbs, which may significantly affect the quality of life of the survivors. These neurological complications are due to the close proximity of the pelvic tumour with the major nerve trunks and the difficulty in approaching the vital structures located deep in the pelvis during surgery. Although complete tumour resection is the goal of surgery in localised pelvic tumour, incomplete resection with minimal residual tumour appears acceptable in cases where there is high risk of neurological complication, as the survival rate has been shown to be good despite incomplete tumour resection. It is therefore very important to consider carefully the risk of compromising the survivors’ quality of life.
when managing pelvic neuroblastoma, which otherwise has a favourable outcome.

**Differential Diagnosis List:** Pelvic neuroblastoma.

**Final Diagnosis:** Pelvic neuroblastoma.

**References:**


Description: Abdominal radiograph shows a large homogenous soft tissue mass arising from the pelvis and displacing the bowel loops. Origin:
Description: Axial CT scan shows a large heterogenous enhancing mass with central necrosis arising from the pelvis with displacement of the iliac vessels. Origin:
Description: Coronal CT scan shows the pelvic mass displacing the right iliac vessels.

Origin:
Description: Sagittal CT scan shows the pelvic mass indenting the urinary bladder and displacing the bowel. Origin: