IMAGE

Presacral neuroblastoma in an 11-month-old infant

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An 11-month-old male infant presented with fever and irritable behaviour. On abdominal palpation by a pediatrician, pelvic fullness was noted with a firm mass noted in the infra-umbilical region. Ultrasound abdomen was performed, which showed a well-defined heterogeneous mass measuring approximately 5 × 4 × 3 cm localised behind the urinary bladder (Figure 1).

Magnetic resonance imaging (MRI) of abdomen and pelvis was performed after sedating the child with proper anaesthetic support. On MRI, the lesion was well-defined lobulated and showed heterogeneous signal intensity with predominantly increased signal changes on both T1-weighted and T2-weighted sequences as compared to the adjacent muscles (Figure 2). The lesion was localised in the presacral region displacing the bladder anteriorly and rectum laterally.

Laboratory findings were significant for elevated urine catecholamines. On imaging and laboratory analysis, provisional diagnosis of presacral neuroblastoma was made. The patient was operated and the excised tumour measured approximately 6.5 × 4.5 × 2.5 cm (Figure 3).

Histopathologic evaluation showed an undifferentiated small-round-blue-cell tumour favouring neuroblastoma (Figure 4).

Presacral space contains a variety of tissues including mesenchymal tissue, fat, nerves, vessels and lymph nodes. Hence, a wide variety of pathologies may affect this area in the pediatric age group including congenital/developmental lesions, neurogenic tumours, inflammatory masses, mesenchymal and lymphomatous masses [1]. Imaging evaluation is often required for detection and demonstration of the extension of the mass into the adjacent organs. Plain radiography and barium studies are inadequate for the evaluation of this anatomically complex region. Ultrasonography, computed tomography and MRI are often performed for a better depiction of the masses in the presacral region.

Neuroblastoma is the most common malignancy in infancy being the third most common neoplasm after leukaemia and brain tumours. Neuroblastoma can even be detected at antenatal ultrasonography [2,3]. Pelvic neuroblastoma accounts for only 2% of total neuroblastomas diagnosed in pediatric age group. Clinical manifestations include nonspecific constitutional symptoms like fever, malaise, weight loss and failure to thrive. Mass effect from the presacral neuroblastoma may cause pain with disturbed bladder and bowel functions [2,3]. Management depends on the extent of local invasion and distant spread.

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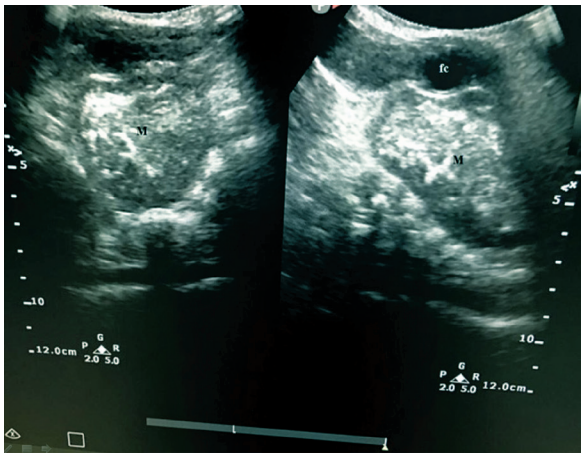

Figure 1 - Ultrasound abdomen showing a well-defined heterogeneous mass (M) localised behind urinary bladder. Foley catheter (fc) is shown in the empty urinary bladder.

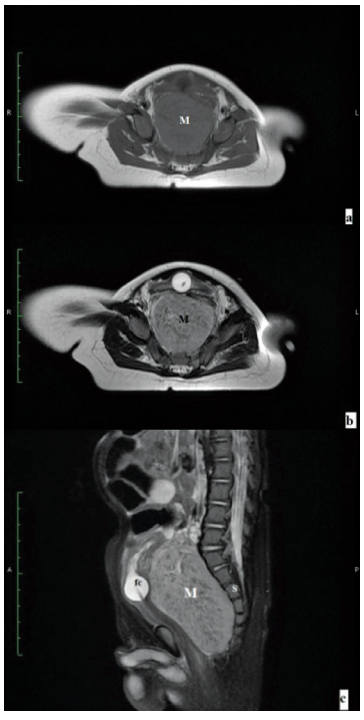

Figure 2 - MRI of the pelvic region. (a) Axial T1-weighted sequence and (b) axial T2-weighted sequence revealed well-defined lobulated mass lesion (M) showing heterogeneous signal intensity with predominantly increased signal changes as compared to the adjacent muscles. (c) Sagittal T1-weighted sequence showing the relationship of the mass (M) with sacrum (S) and empty urinary bladder represented by Foley catheter (fc).

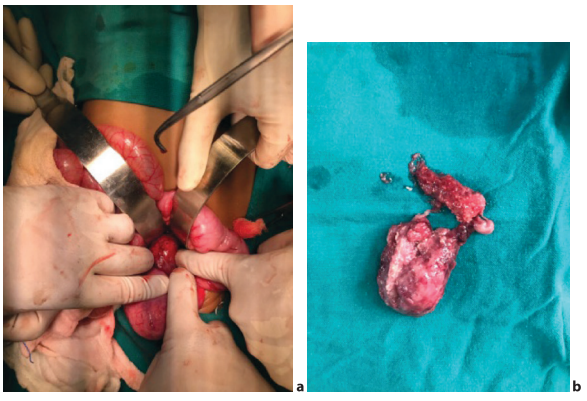

Figure 3 - Image of the mass lesion (a) during surgery and (b) after excision.

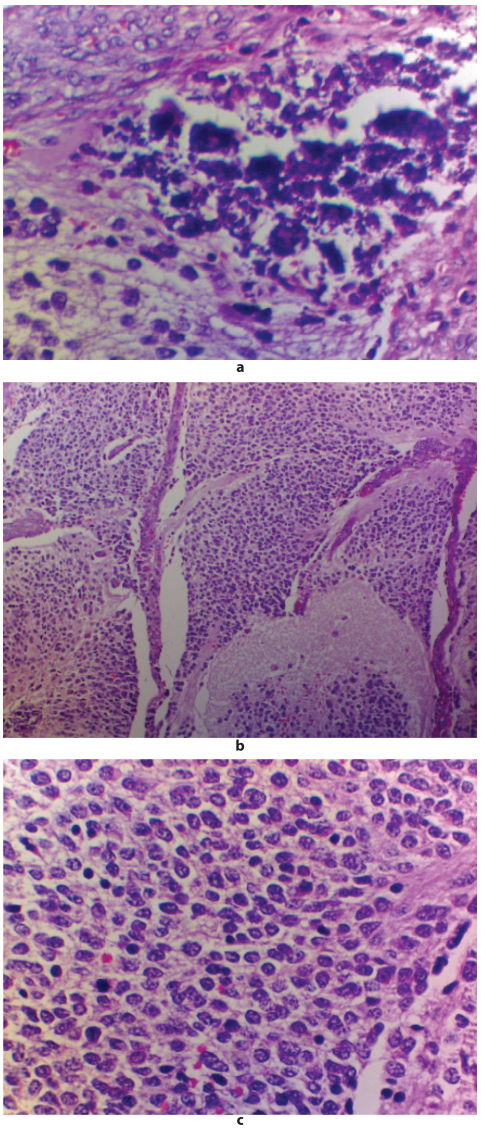

Figure 4 - (a–c) Microscopic images of the specimen showing small blue cells having round to oval nuclei with brisk mitotic activity.

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