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IMAGES OF SPINE CARE

Immature ganglioneuroma of the thoracic spine with lipomatous component: a rare cause of scoliosis

A 33-year-old male patient presented to the neurosurgery clinic with scoliosis. Magnetic resonance (MR) imaging of the thoracic spine revealed scoliosis and a right paravertebral soft-tissue mass at the T6–T11 level (Fig. 1) that involved the spinal canal and expanded the right neural foramens. The mass revealed heteregeneous low-signal intensity on unenhanced T1-weighted MR images with high-signal intensity lipomatous component (Fig. 2) and intense enhancement on contrast-enhanced T1-weighted MR images (Fig. 3). Plain computed tomography demonstrated scattered fatty areas, calcifications, and vertebral scalloping (Fig. 4). The mass was totally resected in the operation performed by neurosurgery. Histologically, the tumor revealed mature ganglion cells, their processes, ensheathing Schwann cells, and mature adipose tissue within the tumor. Rare immature ganglion cells were identified in the tumor after applying thorough examination with additional sections. Immunohistochemical analysis demonstrated positivity of S-100 protein in Schwann cells and positivity for synaptophysin and neurofilament protein in ganglion cells. Immature ganglion cells were positive for synaptophysin but negative for neurofilament protein. The final diagnosis was immature ganglioneuroma with lipomatous component (Fig. 5).

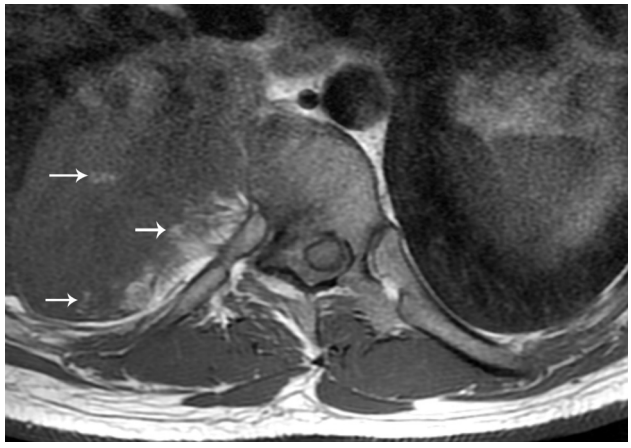

Fig. 2. Axial unenhanced T1-weighted magnetic resonance image showed a heteregeneous low-signal intensity tumor with high-signal intensity lipomatous component (arrows).

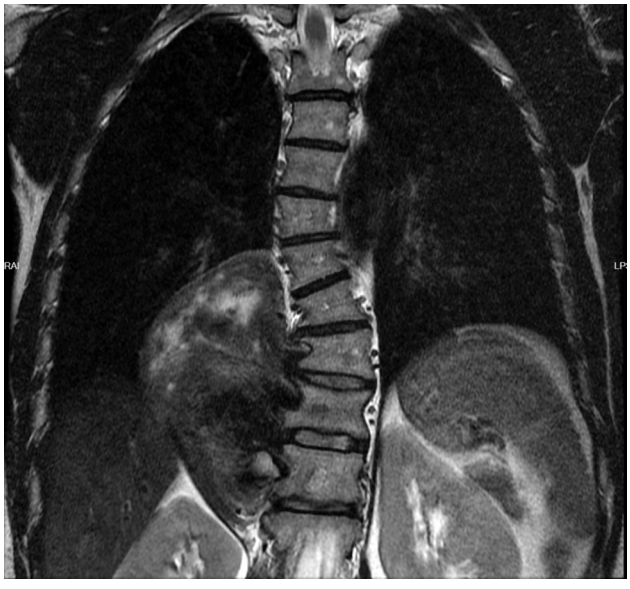

Fig. 1. Coronal T2-weighted magnetic resonance image showed scoliosis and right paravertebral soft-tissue neoplasm.

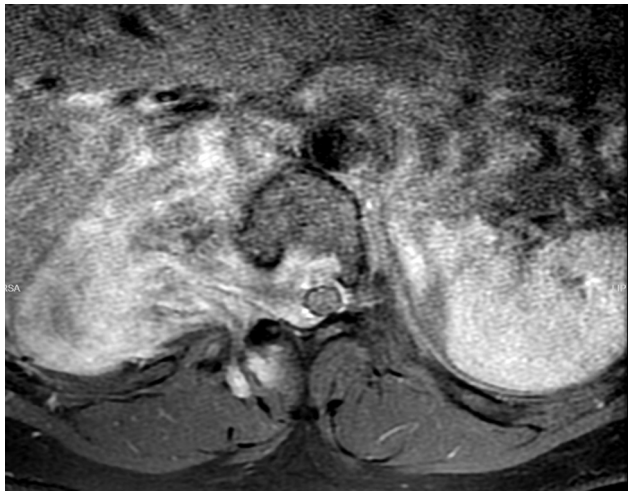

Fig. 3. Contrast-enhanced axial T1-weighted magnetic resonance image showed intense enhancement of the tumor that enlarged the neural foramen and extended to the spinal canal. The mass compressed the spinal cord.

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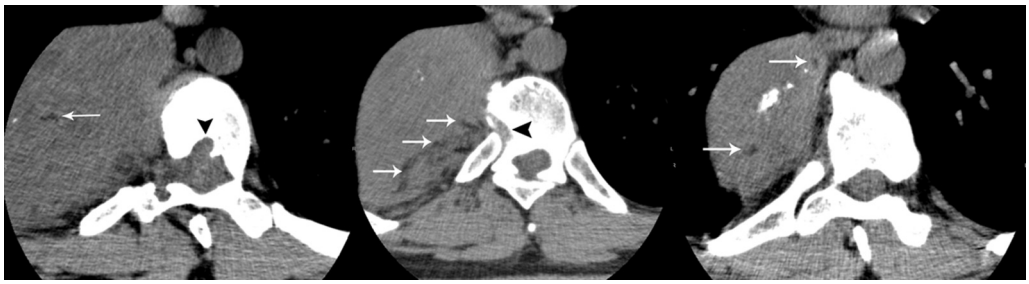

Fig. 4. Plain computed tomography scans showed scattered fatty areas (arrows), calcifications, and vertebral scalloping (arrowheads).

Ganglioneuroma is a benign neoplasm that comprised mature ganglion cells and an abundance of unmyelinated and occasional myelinated axons with accompanying Schwannian stroma. However, immature ganglioneuroma consist of both mature ganglion cells and smaller form of ganglion cells or rare neuroblasts [1]. Ganglioneuroma with lipomatous component reported as a distinct entity in the literature recently shows mature adipose tissue within a ganglioneuroma [2–4].

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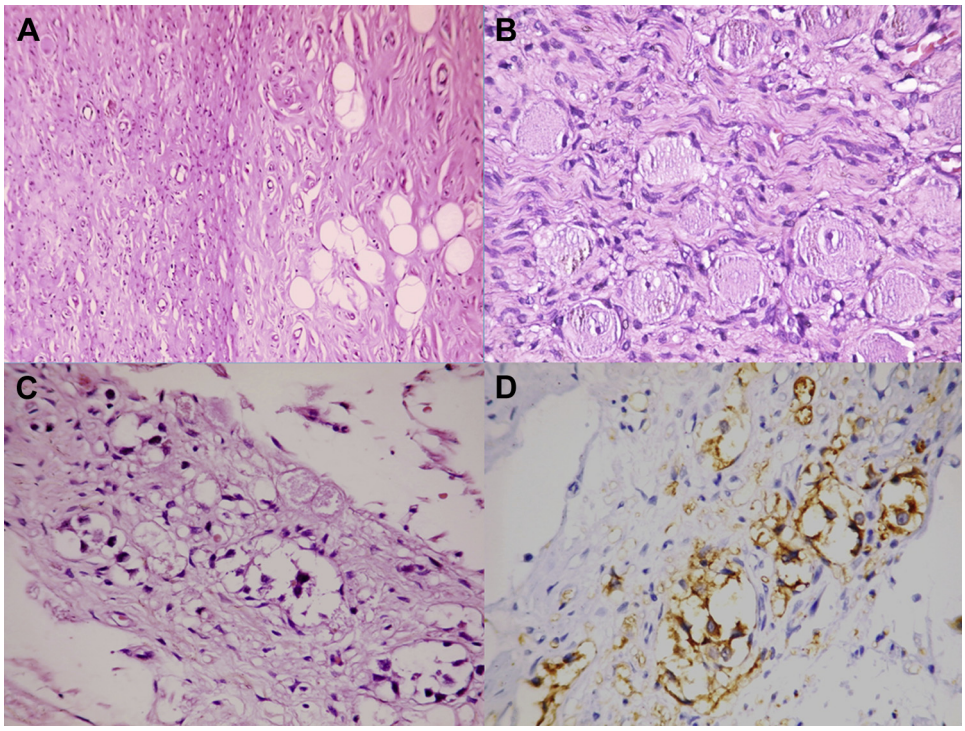

Fig. 5. Photomicrographs of the tumor specimen revealed an interlacing pattern of adipose tissue, Schwann cells, and scattered mature ganglion cells (hematoxylin-eosin, ×100) (A); ganglion cells, their processes, and ensheathing Schwann cells (hematoxylin-eosin, ×400) (B); immature ganglion cells with scant cytoplasm and small nucleolus (×400) (C); and immature ganglion cells showing positivity for synaptophysin (×400) (D).

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