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Split Cord Malformation-1 (SCM): Characteristic Neuro-imaging

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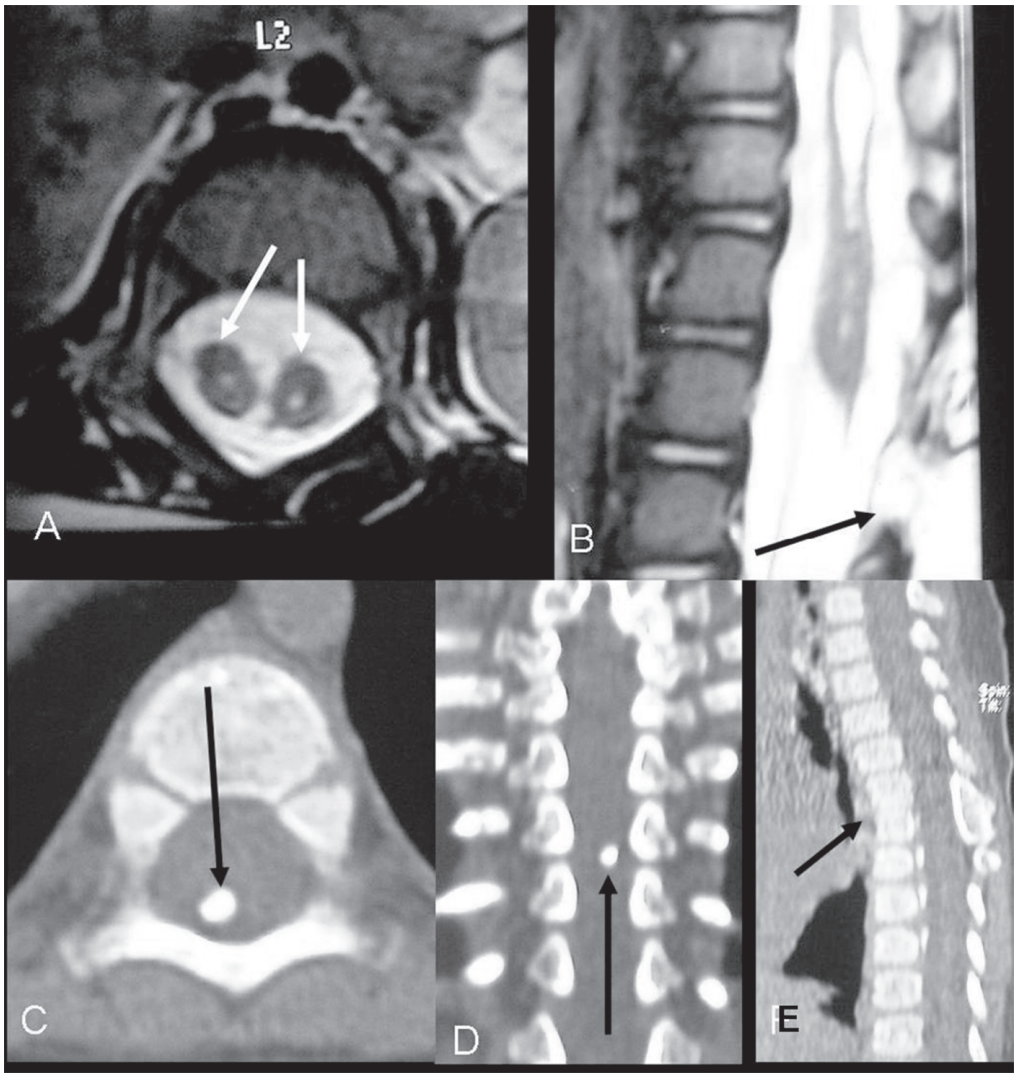

Figure I: Figure A: MRI of spine T2W image, axial section at L2 showing duplication of spinal cord(arrows). Figure B: MRI of spine T2W image sagittal section showing Lipoma (arrow) and hydromyelia. Figure C: CT-scan of spine axial section at L2 showing anterior-posterior transverse bony bar in spinal canal (arrow). Figure D: CT-scan of spine coronal view showing the bony bar in the spinal canal (arrow). Figure E: CT-scan spine sagittal image showing absent intervertebral disc with block vertebra at the involved site (arrow)

A 01 month old boy presented with a swelling on midline back and bilateral moderate degree club foot. Back swelling 5x4 cm at lumbar area in midline fixed with underlying tissue. Crying did not increase in size. It was soft, trans-illumination test was positive, fluctuation was negative. Lower limb neurology with sphincter functions seemed to be normal except bilateral club foot. MRI Dorso-lumbar spine showed duplication spinal cord at upper lumbar area with a subcutaneous lipoma at lumbar region communicated to dura. There was also hydromyelia above the duplication of cord (Figure I A & B). CT scan of spine showed a transverse anterior-posterior bony bar at lower dorsal spine corresponding to the site of duplication on MRI and that confirmed the SCM-1(diastomatomyelia) (Figure I C, D & F).

Split cord malformation (SCM) is used for all double spinal cords, all of which appear to have a common embryologic etiology[1]. Type I SCM is defined as two hemicords, each with its own central canal and surrounding pia, each within a separate dural tube separated by a dural-sheathed rigid osseocartilaginous (bony) median septum. This has often called to as diastematomyelia. There are abnormalities of the spine at the level of the split i.e. absent disc, dorsal hypertrophic bone where the median "spike" attaches[2]. Two-thirds have overlying skin abnormalities including nevi, hypertrichosis, lipomas, dimples or hemangiomas. These patients often have and an orthopedic foot deformity. Symptoms are most commonly due to tethering of the cord; and are usually improved by untethering. The bony septum must be removed and the dura reconstituted as a single tube[3]. Type II SCM consists of two hemicords within a single dural tube, separated by a nonrigid fibrous median septum. This has sometimes been referred to as diplomyelia. Each hemicord has nerve roots arising from it. There is usually no spine abnormality at the level of the split, but there is usually spina bifida occulta in the lumbosacral region. Treatment is surgical untethering the cord[3].

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