

Ventriculus Terminalis

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Although Stilling described the ventriculus terminalis in 1859, Krause, in 1875, identified it as a true ventricle lined by ciliated ependymal cells and named it the “fifth ventricle.” He identified it in all adults but noted that it was relatively larger in children and the elderly than in middle age.¹

The ventriculus terminalis, also known as the “fifth ventricle”, is an ependymal-lined residual lumen of the conus medullaris (the caudal most portion of the spinal cord) that forms during secondary neurulation (the process of canalization with retrogressive differentiation that follows neural tube closure). Focal, nonenhancing dilation of the ventriculus terminalis of the conus medullaris in children and adults on MR images has been described.²⁻⁴

The ventriculus terminalis is a normal anatomic variant of the conus medullaris that can be visualized on spinal sonograms in neonates.²

Until recently, this normal cavity was of interest only to pathologists, but high-resolution magnetic resonance imaging (MRI) now shows the ventriculus terminalis.³ Asymptomatic localized dilation of the ventriculus terminalis is a normal developmental phenomenon that must be distinguished from syringohydromyelia and intramedullary cystic tumors.³

Isolated lumbosacral syringohydromyelia of the spinal cord is very rare, accounting for 2.5% of all such lesions. Poser (1956) reviewed more than 200 cases of syringomyelia and found that 12.6% extended into the lumbosacral region from more rostral cord levels, whereas only 5 were restricted to the lumbosacral segments. Moreover, there is a high incidence of associated defects with syringohydromyelia, most commonly dysraphism, pes cavus, split cord, Chiari I malformation and syndactylism. None of these features was present in children with ventriculus terminalis. Where there is spina bifida with tethering of the spinal cord and/or the presence of a dorsal dermal sinus tract, then the possibility of a congenital lesion such as an epidermoid should be considered.^{3,5} Chiari, split cord malformation and

other pathologies of the central nervous system may be accompanied to 10% of these lesions. Therefore, radiological examination of the neural system is necessary in these cases.

MR scanning is fundamental for diagnosing and monitoring symptomatic patients. The diagnosis of ventriculus terminalis should be considered if a nonenhancing, ovoid, smooth walled, nonseptated cystic structure localized to a normally positioned conus is seen on MRI in an asymptomatic child younger than 5 years. Follow-up imaging would be indicated if clinical symptoms develop. Present evidence suggests that visibility of the ventriculus terminalis on MRI in a small number of children younger than 5 years of age simply represents the MR visible part of the spectrum of a normal developmental process.³

We present here a 6-year-old girl who presented with an asymptomatic Port-wine stain localized to her lumbar area. It was a congenital midline lumbar cutaneous lesion (Figure 1). The neurological examination of the patient was normal and she had no urinary and urodynamic dysfunction. Radiological and urodynamic follow up is important in these cases because sphincter dysfunction may be present in about 25% of cases at the beginning during the follow up and an operation may be necessary.

The MRI of the lumbar spine revealed an elliptical cystic structure at the end of the spinal cord (conus medullaris). Fluid in the cyst followed cerebrospinal fluid signal in all sequences (Figure 2). We observed no abnormal signal in the adjacent parenchyma or enhancement associated with the cystic mass.

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FIGURE 1: Port-wine stain localized to her lumbar area.

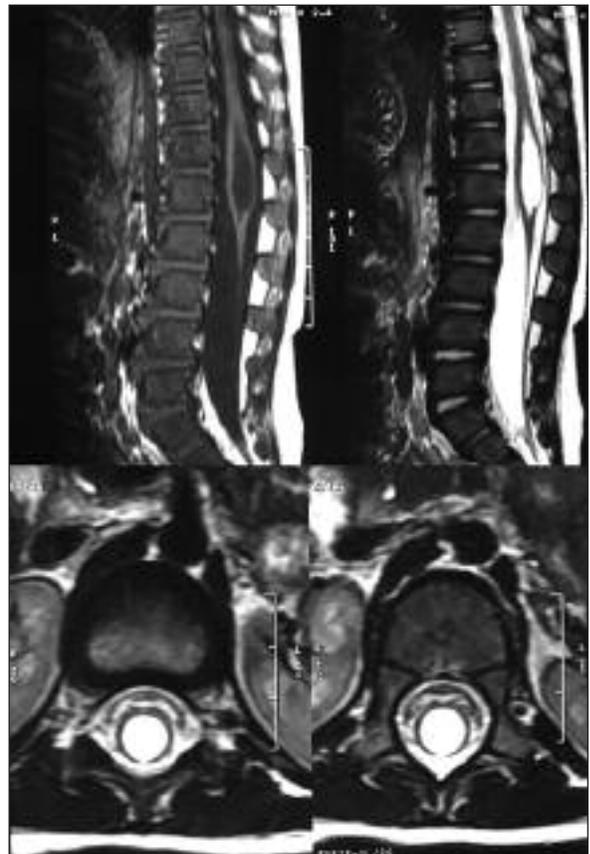


FIGURE 2: Six-year-old girl. Axial and sagittal T1 and T2-weighted images of the distal spinal cord show the ovoid ventriculus terminalis as a distal continuation of a more rostral central canal.

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