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Dorsal Dermal Sinus Tract With Tethered Spinal Cord

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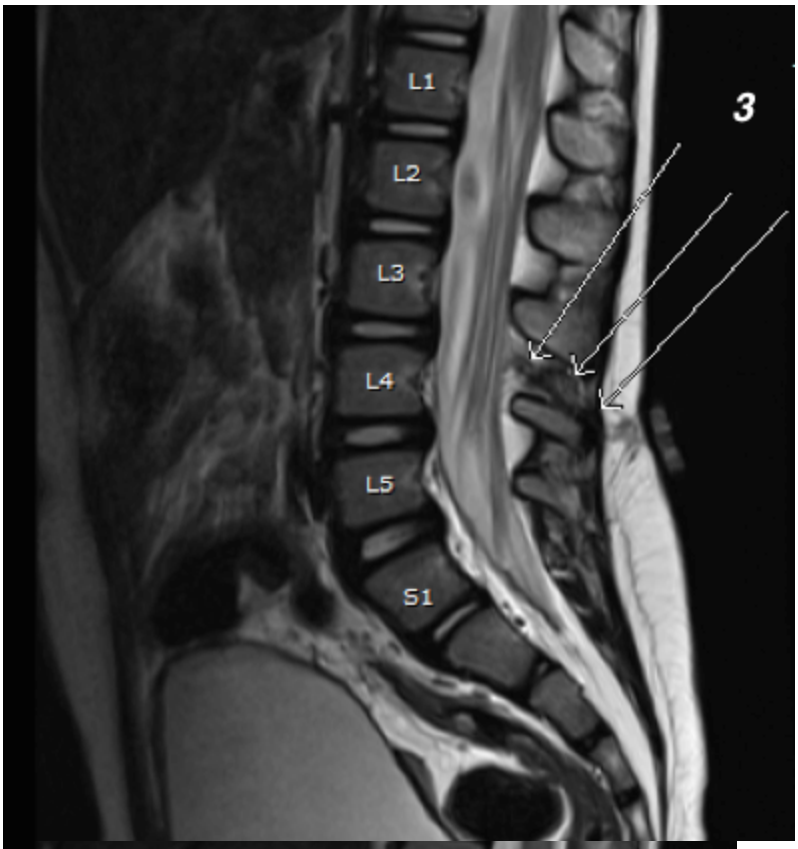
A 5-year-old girl presented to our office for a routine well-child evaluation. The child was a new patient, and she was doing well in kindergarten. The girl's mother reported that the child had complained of increasing leg pain for about a year prior to being seen in our office, but there was no history of limp. The girl's past medical history was significant for an uncomplicated urinary tract infection at 4 years of age. In addition, the girl's mother reported that for more than a year before the office visit, she had to "remind" her daughter to pass urine. The results of the family history and the remainder of the review of systems were unremarkable.

The physical examination revealed an irregular, oval, dimpled lesion overlying the 4th lumbar vertebrae (**Figures 1 and 2**). The rest of the physical examination and detailed neurologic examination results were unremarkable.

Due to the nature and location of the lesion, magnetic resonance imaging (MRI) of the lumbar spine was performed (**Figures 3, 4, and 5**). A marker was placed on the back overlying the L4 spinous process at the site of the dimple, and an abnormal tract was seen extending from the surface of the dermal lesion into the thecal sac between L3 and L4. Furthermore, the conus medullaris was seen to terminate below the middle of body of L2. A tethered spinal cord was visualized as a thick, fibrous filum terminale, and an unusually full, large bladder was also noted. According to the neurosurgeon, this was thought to be a manifestation of bladder dysfunction from the tethered cord.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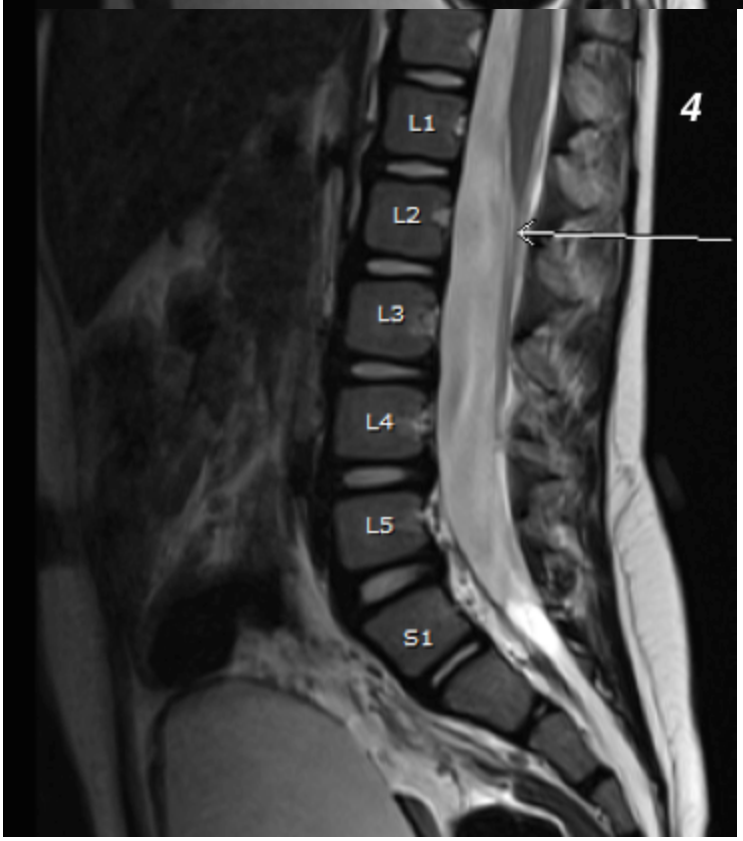
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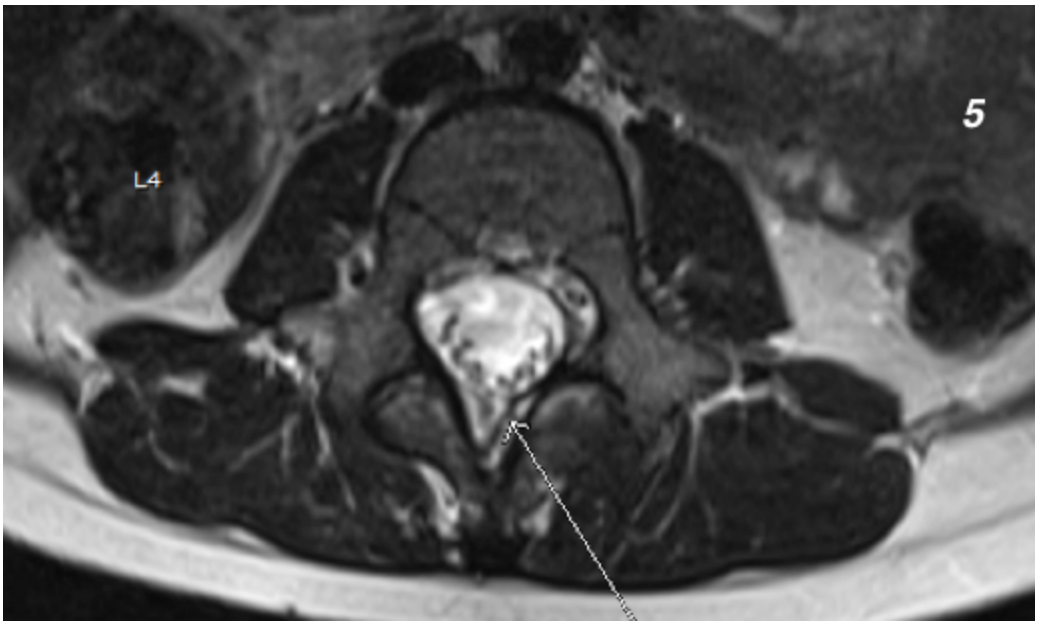

The girl subsequently underwent surgery, during which a dermal sinus that extended into the thecal sac was removed. The lesion was more than 7.6 cm in length. The thickened and tethered filum terminale was visualized and cauterized. There were no postoperative complications. At 3 months following the operation, the mother stated that her daughter's bladder dysfunction and leg pain have not completely resolved, but they have improved significantly.

Discussion

Pediatricians frequently are faced with evaluating congenital defects of the back.[1] Coccygeal and sacral dimples of the midline intergluteal crease, which are typically found below the top of the intergluteal crease, are especially common. These dimples are often benign,[2] but they can also indicate significant disease, as seen in one study of nearly 2000 consecutive neonates in which approximately 3% of the infants had significant abnormalities.[3]

Thus, physicians must be aware that dorsal spinal sinus tracts can be associated with serious medical problems. These tracts can be linked with tethering of the spinal cord, which limits the movement of the spinal cord in the spinal canal, and they may also be associated with aseptic meningitis, alternatively known as chemical meningitis. Other potential problems include a benign dermoid cyst compressing the spinal cord or nerve roots, and diastematomyelia, which is a splitting of the spinal cord by a bony, cartilaginous or fibrous septum in the central portion of the spinal canal.[1]

Most often, focal neurologic abnormalities are the observed signs correlated with dorsal spinal sinus tract defects. These neurologic abnormalities may develop in up to 50% of children younger than 1 year of age and in 90% of children aged older than 1 year. Over time, children with these abnormalities may also have orthopedic abnormalities, which often include persistent toe walking and tight heel cords. Scoliosis and chronic back pain may also be observed.[1]

The possibility of serious abnormalities means that any dermal lesion suggestive of a dorsal spinal sinus tract requires radiologic evaluation. The gold standard for evaluation of the spine is an MRI, and consultation with the neurosurgery department is indicated if any significant abnormalities are noted on the MRI. Surgical removal of the dermal defect and repair of any underlying spinal abnormality should be performed in a timely fashion.

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References

1. Block SL. The enigmatic sacro-coccygeal dimple: to Ignore or explore? *Pediatr Annals*. 2014;43(3):95-100.

2. Kriss VM, Desai NS. Occult spinal dysraphism in neonates: assessment of high-risk cutaneous stigmata on sonography. *AJR Am J Roentgenol.* 1998;171(6):1687-1692.

3. Powell KR, Cherry JD, Hougen TJ, Blinderman EE, Dunn MC. A prospective search for congenital dermal abnormalities of the craniospinal axis. J Pediatr. 1975;87(5):744-750.