Epidermoid cyst of the cauda equina

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Section: Neuroradiology
Imaging Technique: MR
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Case Type: Clinical Cases
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Patient: 37 years, male

Clinical History:
Lower extremities weakness associated with muscular atrophy and sensory defects, progressing over several years.

Imaging Findings:
The patient was referred for lower extremities weakness associated with muscular atrophy and sensory defects, progressing over several years. An MRI study of the lumbar spine was performed on sagittal and axial planes with SE T1, FSE T2 and post-gadolinium SE T1 sequences at 1.5 Tesla. An intradural-extradural cystic mass with heterogeneous signal intensity was evidenced. The mass was resected, and the histopathologic diagnosis was an epidermoid cyst of the cauda equina. Post-operative MRI showed no residual mass.

Discussion:
Epidermoid cysts are rare cystic tumors of the spine, which are lined by a membrane composed of epidermal elements. They are slowly growing benign tumors, and represent less than 1% of all intraspinal tumors. Epidermoid cysts most commonly present in 3rd to 4th decades, and males are affected more than females. Epidermoid cysts can either be congenital, or acquired. Congenital epidermoid cysts are believed to result from the inclusion of ectodermal tissue during the closure of the embryonic neural tube. The most common location for epidermoid cysts is the cauda equina (around 35%), followed by lumbosacral and lower thoracic regions. 60% of epidermoid cysts are extramedullary, whereas 40% of them are intramedullary in location. Epidermoid cysts may be associated with dermal sinus, slowly progressive myelopathy, and chemical meningitis due to rupture of cystic contents into CSF spaces. On MRI, epidermoid cysts are generally characterized by heterogeneous hypointense signal intensity on T1- and hyperintense signal intensity on T2-weighted images, with no contrast enhancement or rarely minimal peripheral enhancement following intravenous gadolinium administration. Small sized cysts may be isointense to CSF in all sequences. Epidermoid cysts cause displacement of the spinal cord and nerve roots. Conventional or CT myelography reveals complete or incomplete spinal block secondary to epidermoid cysts. The differential diagnosis includes ependymoma, astrocytoma, and dermoid. Ependymomas and astrocytomas are usually associated with contrast enhancement, and can be easily differentiated from epidermoid cysts. Dermoids contain mature tissues from all 3 germ cell layers with predominance of fatty components, characterized by heterogeneous hyperintensity on all sequences.

Differential Diagnosis List: Epidermoid cyst of the cauda equina
**Final Diagnosis:** Epidermoid cyst of the cauda equina

**References:**


Description: T1-weighted image: well-delineated intradural-extramedullary tumoral mass, extending between T12 and L4. The mass is cystic in nature, with heterogenous mixed signal intensity. Note hyperintense regions especially in the superior and inferior poles. Origin:
**Description:** T2-weighted image: the mass has a heterogenous hyperintense signal intensity. Note hypointense regions especially in the superior and inferior poles. **Origin:**

**Description:** Post-contrast T1-weighted image reveals that the mass does not enhance at all. **Origin:**
Description: Post-operative T2-weighted image reveals total resection of the cystic mass. Origin:
Figure 2

a

Description: T2-weighted image at the lower thoracic level shows hypointense component of the mass.
Origin:

b

Description: T1-weighted image of the lower lumbar spine shows hyperintense component of the mass.
Origin: