An Illustrative Case: Bleeding in a Thoracic Juxtafacet Cyst with Paraparesis

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ABSTRACT
Thoracic synovial cyst is a rare but curable example of an extradural spinal pathology responsible for progressive neurological deficit. Spinal Synovial cyst can be complicated with intracystic hemorrhage presenting itself with acute pain and neurology. Herein we present an extremely rare case of spinal cord compression by a hematoma within a synovial cyst of the thoracic spine.

KEY WORDS: Intraspinal synovial cyst, Juxtafacet cyst, Thoracic myelopathy, Thoracic spine

CASE REPORT
A 28-year-old female had history of sudden pain of the upper thoracic region radiating to the left costal territory a few hours after lifting a heavy object, of three weeks duration. Subsequent to the pain she developed asymmetric lower extremity weakness dominant on the left side and sensory disturbances of the lower extremity dominant on the right compatible with Brown-Sequard syndrome. This was diagnosed as multiple sclerosis in the local hospital and was treated with corticosteroids for three weeks till she was referred to us. MRI performed on the day of admission in our hospital showed a large oval isosignal mass on the right side of the spinal canal at the third thoracic vertebra on T1-weighted images while T2 images revealed a heterogenous mass with cord compression (Figure 1A,B; 2A,B). Gadolinium-enhanced MRI done a few days later demonstrated a heterogeneous mass with moderate rim enhancement (Figure 3A-C).
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With preoperative diagnosis of a cystic tumor, appropriate laminectomy was done demonstrating an extradural large oval and bluish cystic mass compressing the cord. Efforts for its isolation resulted in rupture of its thin capsule. The cyst content was composed of intracystic mucoid material mixed with old liquefied hemorrhage. These were suctioned and the remnants of the thin capsule were removed. An intraoperative diagnosis of hemorrhagic synovial cyst was made and confirmed by pathology. Postoperatively, the patient made prompt and full recovery and returned to her normal activities within three weeks.

DISCUSSION

Extradural benign cysts located in the vicinity of the facet joints are so called juxtafacet cysts. These include synovial, ganglion and ligamentum flavum cysts. Juxtafacet cysts are not evenly distributed in the spine. Most of these cysts occur in the lumbar region with an incidence of 95%, followed by the cervical spine with 3/5% while the least common is the thoracic one with 1/5% incidence (2,3,5).

The majority of the reported thoracic juxtafacet cyst have been located in the relatively mobile transitional
thoracolumbar zones (1-9,12,13). The number of immobile thoracic synovial cyst reported in the literature is few (10).

The juxtafacet cysts of the mobile segments are usually of small size with thick and even calcified capsule at the time of diagnosis (1-9,12,13). These cysts are associated with rather moderate to severe degenerative changes of corresponding vertebra., While in the immobile segments, the synovial cysts are rather large and coated with a thin capsule (10). Eventually, larger cysts containing more newly formed vessels in their inner surface are more prone to intracystic hemorrhage.

The clinical picture of thoracic juxtafacet cyst is myelopathy, radiculopathy or combination of myelopathy and radiculopathy (3,6,7 8-10,12). Bleeding in juxtafacet cysts is a rare cause of deterioration of previous neural deficit or rapid development of new neurology (13).

MRI is a the tool of choice for the diagnosis of uncomplicated juxtafacet cysts. MRI appearance of juxtafacet cysts is rather specific with a low signal on T1-weighted images and high signal on T2-weighted images with a very thin low signal rim. In contrast, faint peripheral rim enhancement is seen on MR images (5).

In the case of bleeding, the MRI picture of the condition varies depending on the stage in the biochemical evolution of the hematoma, which has been already described in detail (11). The majority of the patients with bleeding in the synovial cysts are diagnosed in the subacute phase, beginning from the second week to a month. In this stage with clot gradual degradation, an isointense to heterogeneous mass in T1 images has been reported because of the variable mixture of methemoglobin and deoxyhemoglobin. On T2 images the clot is heterogeneous at this phase. Further, because of the vascularization of the combination of the capsules of the hematoma and the cyst, variable rim enhancement should be seen after gadolinium injection in this stage as was seen in our case.

Surgical management of complicated and uncomplicated synovial cysts of the thoracic spine is excision through laminectomy. Excellent recovery should be expected after surgical removal in thoracic juxtafacet cyst both in uncomplicated and hemorrhagic juxtafacet cysts (3,13). Prognosis after surgical excision has been good in all reported cases (1-10,12,13).

REFERENCES


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