Spinal epidural cavernous hemangioma

Spinal epidural cavernous hemangiomas are a rare occurrence. This particular case is made even more distinctive by the fact that the lesion mimicked a dumbbell-shaped neuroma. Moreover, it had a very unique localization (wholly epidural, at cervical-thoracic -C7-D1- level). The importance of this case is linked not only to its remarkable rarity, but also to the diagnostic avenues explored. The surgery was carried out by Prof. Riccardo Caruso, Head of the Neurosurgical Department of the Military Hospital of Rome and Professor of Neurosurgery of Sapienza University of Rome, assisted by Dr. Luigi Marrocco, Senior Neurosurgeon of the Military Hospital of Rome. Postsurgical recovery was managed by Dr. Venceslao Wierzbicki, Senior Neurosurgeon of the Military Hospital of Rome.

Case presentation: In 2020, a 71 year-old man, suffering from intense pain in the left scapular region and in the ulnar area of the left forearm, underwent surgery for the removal of a spinal epidural cavernous hemangioma involving the left C7-D1 foramen. Prior to surgery, the lesion had been misdiagnosed as a neuroma by a radiologist.

Clinical discussion: In the Literature there are other, rare cases of hemangiomas partly located in the spinal canal, and partly located intra and extra foramen. In the case here presented, differential diagnosis as well as a potential Schwannoma, suggested by the dumbbell shape of the lesion, should have considered also the possibility of a meningioma. Two teams of radiologists examined the images, the radiologists of our team, Dr. Valentina Martines and Dr. Emanuele Piccione, thanks to a close inspection of the features of the lesion, postulated the extra-dural position. Other aspects of the scans were then analyzed to help guide future diagnosis of similar lesions.

Conclusion: With a spinal tumor affecting the foramen, a close examination of the images allows for accurate presurgical differential diagnosis, differentiating between the more frequent neuroma and other rarer tumors, such as a hemangioma [1)].

Fourteen patients with pathologically diagnosed non-vertebral origin cavernous hemangiomas who had undergone surgery at Beijing Tiantan Hospital Neurosurgery Center between 2003 and 2012 were 9 males and 5 females with an average age of 51.64 years. The primary epidural cavernous hemangiomas were located in the cervical spine (2 cases), cervicothoracic junction (2 cases), thoracic spine (8 cases), thoracolumbar junction (1 case), and lumbar spine (1 case). Hemorrhage was confirmed in 4 cases during surgery. Preoperatively 5 lesions were misdiagnosed as schwannoma, 1 was misdiagnosed as a meningioma, and 1 was misdiagnosed as an arachnoid cyst. Preoperative hemorrhages were identified in 2 cases. Three patients had recurrent cavernous hemangiomas. The initial presenting symptoms were local pain in 5 cases, radiculopathy in 6 cases, and myelopathy in 3 cases. Upon admission, 1 patient had radicular symptoms and 13 had myelopathic symptoms. The average symptom duration was 18 months. All patients underwent surgery; complete resection was achieved in 8 cases, subtotal resection in 4 cases, and partial resection in 2 cases. Postoperative follow-up was completed in 10 cases (average follow-up 34 months); 1 patient died, 5 patients showed clinical improvement, and 4 patients remained neurologically unchanged.

Total surgical removal of spine epidural cavernous hemangiomas with a chronic course is the optimum treatment and carries a good prognosis. Secondary surgery for recurrent epidural cavernous hemangioma is technically more challenging. In patients with profound myelopathy from acute hemorrhage, even prompt surgical decompression can rarely reverse all symptoms [2)].

1)

Caruso R, Martines V, Marrocco L, Piccione E, Wierzbicki V, Lombardi M. Case report: An epidural cavernous hemangioma mimicking a dumbbell-shaped neuroma. Int J Surg Case Rep. 2021 Jun 9;84:106069. doi: 10.1016/j.ijscr.2021.106069. Epub ahead of print. PMID: 34119941.

2)

Li TY, Xu YL, Yang J, Wang J, Wang GH. Primary spinal epidural cavernous hemangioma: clinical features and surgical outcome in 14 cases. J Neurosurg Spine. 2014 Oct 24:1-8. [Epub ahead of print] PubMed PMID: 25343406.