Ventral epidural cervical hematoma: Back to the future ? or a new classification ?

Introduction

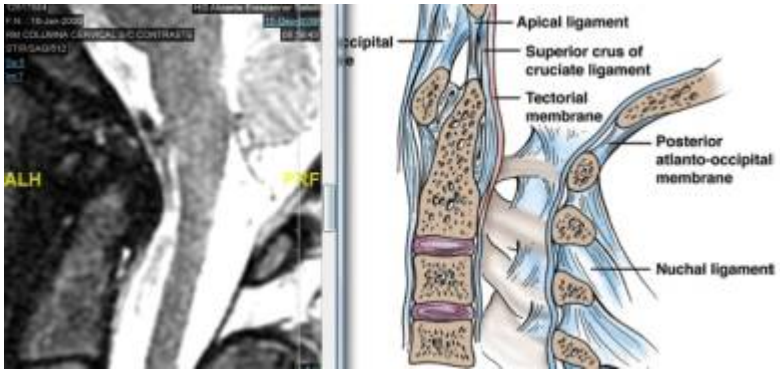
The first reported case of acute EDH located ventrally in the cervical spine was in 1997

Case report

Discussion

Is this a epidural hematoma

Ligaments ruptured



Conclusion

A young man with posttraumatic long-segment spinal epidural hematoma. Evacuation of the hematoma led to complete neurologic recovery in our patient. Our case highlights the importance of early diagnosis and prompt surgical intervention for the evacuation of hematoma in preservation or maximum recovery of neurologic function. Imaging findings, management options, and the relevant literature are reviewed [1].

The first with a fatal course in the acute setting. It is also the first retroclival hematoma associated to an odontoid base fracture.

Retroclival hematomas are a rare diagnosis, to be considered in pediatric patients with flexion-extension, high-energy injuries. Morphology is typically epidural. Brain stem and cranial nerve symptoms are typical. Treatment is usually conservative. Outcome is regarded as favorable, with partial recovery and neurologic sequelae. Adult cases are extremely rare. The case we describe adds new characteristics to the scarcity of cases [2].

Rapid spontaneous resolution of a traumatic cervical epidural haematoma [3].

A symptomatic delayed post-traumatic epidural hematoma of the T-spine that resolved within hours of administration of high dose steroids. A 22-year-old man presented 10 days after sustaining blunt trauma during a motor vehicle crash. He developed signs of acute cord compression with loss of sensation and motor function in bilateral lower extremities with priapism. Magnetic resonance imaging demonstrated a spinal epidural hematoma with 50% canal stenosis at the T4 level. His symptoms improved 1 h after the administration of high dose steroids. All symptoms resolved completely while the patient was in the Emergency Department and he was treated conservatively by Neurosurgery with no further sequelae. Thoracic spinal epidural hematoma is an uncommon condition that may present in delayed fashion after trauma with significant neurologic compromise. If neurologic symptoms improve with initial steroid therapy, patients with this condition may be treated conservatively with steroids and observation [4].

One patient with post-traumatic epidural hematoma located ventrally at the cervicomedullary junction and associated with medial infarction at the pontomedullary junction are reported.

The main clinical finding in this patient was bilateral corticospinal and corticobulbar tract involvement. A magnetic resonance image showed displacement and flattening of the medulla oblongata and of the most cranial portion of cervical cord, which were caused by the epidural hematoma associated with an ischemic lesion of the pontomedullary junction. Results of central motor conduction studies indicated that the abnormality of the central motor pathways was localized at brain stem level, and that there was normal conduction from the cervicomedullary junction to spinal cord.

This is the first reported case of spinal epidural hematoma located ventrally in the cervical spine at the cervicomedullary junction level and concomitant infarction at the pontomedullary junction resulting from whiplash injury [5].

A young patient developed cervical pain after experiencing cervical trauma. Computed tomography and magnetic resonance imaging demonstrated an epidural cervical hematoma. A spontaneous resolution of the clinical symptoms and the radiological abnormalities was observed.

Although surgical decompression is generally regarded as mandatory in selected patients with incomplete and nonprogressing deficits, conservative management may be possible [6].

A cervical spinal traumatic epidural hematoma is usually located dorsally in the epidural space.

Kessel et al. presented one case of acute EDH located ventrally in the cervical spine. Special emphasis is placed on the role of spinal endoscopy in surgical treatment.

After a fall from a tree, a 69-year-old man with rapidly increasing tetraparesis was referred. Plain films of the cervical spine revealed nothing abnormal. The results of computed tomography were highly suspicious for EDH. A myelogram and a post-myelographic computed tomographic scan demonstrated the lesion and its extent craniocaudally.

Emergency decompressive surgery and removal of the hematoma were performed via an anterior approach. Control for total removal of the EDH was achieved using a flexible neuroendoscope providing visualization of the anterior epidural space from the foramen magnum to the T1 level. Surgery was accomplished by vertebral body replacement and anterior plating.

Spinal endoscopy seems to be a useful tool in the surgical treatment of spinal EDH, providing control of the adjacent levels and allowing the limitation of the extent of bony resection [7].

From a review of the literature [8], TSEH located within the ventral cervical epidural space is considered to be a very rare condition

Most commonly associated with spinal fracture and/or dislocations [9]

1)
Garg K, Satyarthee GD, Singla R, Sharma BS. Extensive long-segment cervicothoracic traumatic spinal epidural hematoma with avulsion of C7, C8, and T1 nerve roots. J Neurosci Rural Pract. 2014 Oct;5(4):414-6. doi: 10.4103/0976-3147.140007. PubMed PMID: 25288853; PubMed Central PMCID: PMC4173248.
2)
Pérez-Bovet J, Garcia-Armengol R, Martín Ferrer S. Traumatic epidural retroclival hematoma with odontoid fracture and cardiorespiratory arrest. Spinal Cord. 2013 Dec;51(12):926-8. doi: 10.1038/sc.2013.53. Epub 2013 Jun 11. PubMed PMID: 23752261.
3)
Kim IY, Kim SH, Kim JH, Lee JK. Rapid spontaneous resolution of a traumatic cervical epidural haematoma. Br J Neurosurg. 2005 Oct;19(5):451-2. PubMed PMID: 16455573.
4)
Cuenca PJ, Tulley EB, Devita D, Stone A. Delayed traumatic spinal epidural hematoma with spontaneous resolution of symptoms. J Emerg Med. 2004 Jul;27(1):37-41. PubMed PMID: 15219302.
5)
Oliviero A, Insola A, Santilli V, Tartaglione T, Profice P, Tonali P, Di Lazzaro V. Concomitant post-traumatic craniocervical junction epidural hematoma and pontomedullary junction infarction: clinical, neurophysiologic, and neuroradiologic features. Spine (Phila Pa 1976). 2000 Apr 1;25(7):888-90.

PubMed PMID: 10751303.
6)

Lefranc F, David P, Brotchi J, De Witte O. Traumatic epidural hematoma of the cervical spine: magnetic resonance imaging diagnosis and spontaneous resolution: case report. Neurosurgery. 1999 Feb;44(2):408-10; discussion 410-1. PubMed PMID: 9932898.
7)

Kessel G, Böcher-Schwarz HG, Ringel K, Perneczky A. The role of endoscopy in the treatment of acute traumatic anterior epidural hematoma of the cervical spine: case report. Neurosurgery. 1997 Sep;41(3):688-90. PubMed PMID: 9310991.
8)

Lin TC, Liu ZH, Bowes AL, Lee ST, Tu PH. Effective Steroid Treatment in Traumatic Cervical Spinal Epidural Hematoma Presenting with Delayed Tetraparesis: Two Case Reports and Literature Review. World Neurosurg. 2016 Jul;91:673.e5-9. doi: 10.1016/j.wneu.2016.04.040. Epub 2016 Apr 20. Review. PubMed PMID: 27108025.
9)

Wittebol MC, van Veelen CW. Spontaneous spinal epidural haematoma. Etiological considerations. Clinical neurology and neurosurgery. 1984;86(4):265.