SPONTANEOUS CERVICAL EPIDURAL HEMATOMA. A CASE REPORT.

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ABSTRACT
Spontaneous spinal epidural hematoma is a rare disorder.
We present a case of a 55-year-old man who was awakened by severe pain in the neck and shoulders and inability to move his arms and legs. He was admitted to the clinic as an emergency. His physical status showed no abnormalities. The local status presented with roughly expressed cervical vertebral syndrome. Neurological examination found quadriplegia of acute onset. Distal parahypesthesia with sensory level at the nipples was found. The patient suffered urine retention. Laboratory blood tests showed no coagulation disorder. Spiral computed tomography of the cervical region was performed. The CT image revealed a muff-shaped acute epidural hematoma around the cervical dural membrane with lower thickness on the right side and levels from C2 to C4. Emergency right-sided hemilaminectomy of C3 vertebra was performed. A hard blood clot forming acute epidural hematoma was removed. The patient recovered completely for ten days after the surgery.

CONCLUSIONS: In sudden occurrence of neck pain associated with neurological deficit in the arms spontaneous cervical epidural hematoma should be suspected. Spiral scanner and magnetic resonance are imaging techniques of choice in these patients. The favorable outcome of the disease depends on the prompt diagnosis and emergency removal of the hematoma.

Key words: spinal epidural hematoma

INTRODUCTION
Spontaneous spinal epidural hematoma is a rare disorder with annual incidence of 1 per 100 000 people.1-3 We present a case of a 55-year-old man who was awakened by severe pain in the neck and shoulders and inability for arms and legs movement. He was admitted to the clinic as an emergency for diagnostic evaluation and treatment. On physical examination no discernible pathological findings of the visceral organs and systems were revealed. The local status exhibited roughly expressed cervical vertebral syndrome with stiff neck muscles. The neurological examination found quadriplegia that had set in acutely. Disturbed surface sensitivity of distal parahypesthesia type with sensational level of the nipples was present. Pelvic reservoir urinary retention was present in the patient. The patient was fixed with indwelling urethral catheter. The laboratory blood tests showed no abnormalities in blood clotting. Spiral computer imaging of the neck showed acute epidural hematoma in the form of a muff around the spinal dural membrane with greater thickness on the right side at C2-C4 level. The collection caused marked pressure on the spinal cord and roots at the level of C2 to C4 vertebrae (Fig. 1).

Emergency surgical hemilaminectomy of right half of the third cervical vertebra was performed. Spinal cord decompression was done removing a hard blood clot forming acute epidural hematoma. In the postoperative period the patient recovered to normal neurological status for ten days.

DISCUSSION
Spontaneous spinal epidural hematoma is a rare cause of acute compression of the spinal cord. Most of the acute spontaneous cervical epidural hematoma are located at the level of C6 -C7 vertebrae which is a highly movable segment of the vertebral column. Free anastomosing arteries that pass through the epidural space joining the radicular arteries exist in the cervical region. When some neck movements exceed the limits of the safe deflection of the adjacent arteries these could be torn. Spontaneous spinal epidural hematoma can develop after rupture of the thin local epidural veins, which have anatomically fewer valves. Most often the reason is transient venous hypertension occurring in cough, weight lifting, muscle strain and sometimes...
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during Valsalva test. Increase in the intrathoracic or intra-abdominal pressure elevates the intravenous pressure in these epidural veins and lead to their rupture. The hemorrhage etiology is unknown, but as a whole it is accepted that most hematomas arise after epidural venous plexus lesion. Other possible reasons for spinal epidural hematoma include anticoagulation therapy, coagulopathy, vascular malformation, acute disc herniation. It should be mentioned that a discussion whether the source of bleeding in acute spontaneous cervical hematoma is arterial or venous vessel is still ongoing. Commonly these hematomas are idiopathic in 40 to 50% of the cases. 

Spontaneous spinal epidural hematomas are comparatively rare in elderly patients. Most often these occur due to coagulopathies, tumors or vascular malformations.

Sometimes the symptoms appear after weight lifting. Besides pain, the clinical presentation can include wide neurological deficit varying from clumsiness and cervical radiculopathy to quadriplegia and lethal outcome eventually depending on the severity and speed of development of cervical cord compression. The disorder may present only with neck pain and weakness in the upper limbs without any sensory deficit. The clinical manifestation in cervical epidural hematomas is spontaneous and acute unlike the hematomas at lower levels of the vertebral column which commonly undergo subacute or chronic course. In the latter the odds to determine the cause of the hemorrhage are greater.

The development of spontaneous chronic spinal epidural hematomas is most frequent in the sixth to ninth decade with women being slightly
more affected than men. According to literature data most of the patients present with neck pain frequently with radicular component and motor or sensory deficit.3

In the differential diagnosis of the syndrome “neck pain and progressive neurological disorders” the considerations should include spinal abscess, tumor, ischemia, transverse myelitis, myelopathy, acute disc herniation as well as cervical spinal epidural hematoma. Examinations are required to identify the cause, as well as tests for coagulation disorders, hemophilia, trauma or arteriovenous malformation. Computed axial tomography as an imaging method can provide sufficient information, but does not show the extent of the hematoma. Outlining the upper and lower limits of the hematoma with multilevel spinal cord scanning takes up more time than the spiral scan or magnetic resonance imaging, whereas the results of the surgical decompression of the spinal cord depend largely on the continuance of the symptoms and time spent for diagnostic verification, which may have negative effect on the disease outcome. That is why the spiral scanner and magnetic resonance imaging are methods of choice for diagnosis. They provide promptly the necessary information for large areas of the vertebral column and spinal cord. The high tissue resolution of magnetic resonance imaging allows distinguishing hematoma from spinal cord. T1-weighted images of MR imaging are diagnostically most valuable, as the initial images show an epidural mass isointense to the spinal cord, the isointensity persisting for 120 hours after the onset of the symptoms. This appears an important imaging feature, when examination is carried out within the first 48 hours after the onset of the symptoms. Unlike the spontaneous epidural hematomas, in post-traumatic spinal epidural hematomas the signal intensity of the blood is hyperintense to spinal cord on T1-weighted images because of methemoglobin content. Axial T2-weighted images are mainly with hyperintense signal intensity with internal foci of hypointensity. The latter sometimes present with nodular zones with hyperintense signal intensity, which is considered secondary due to contrast medium leakage from damaged blood vessels. Commonly the treatment is emergency surgical decompression. If the patients are promptly diagnosed and treated complete recovery can be achieved.3 The hypothesis of spontaneous recovery of the neurological lesion is based on the decompression of the spinal cord in spread of the hematoma in the epidural space.7 The relationship between the neurological recovery and the preoperative neurological status and length of the preoperative period is verified. Despite this in conservative treatment the disease can sometimes run a relatively benign course, especially in young patients. The age is probably one of the most important factors in determining the disease outcome.2 Nonoperative management is considered after evaluation in case of evident improvement of the neurological status. In the postoperative period it is relevant that the patients should be kept in check for signs of recurring hematoma.

We have to stress the fact that prognosis in this disease is influenced by the patient’s age and preoperative neurological deficit. Early diagnosis and emergency surgical decompression of the spinal cord within 12 hours from the onset of the symptoms are extremely important and of crucial significance. Pulmonary insufficiency is the most frequent cause for death in this disorder and lethality may be high if emergency surgical decompression is not performed.8

CONCLUSIONS

In patients with complaints of sudden occurrence of neck pain associated with neurological deficit in the arms spontaneous cervical epidural hematoma should be considered.

Spiral scanner and magnetic resonance are imaging techniques of choice in these patients.

Favorable outcome of the disease depends on the prompt diagnosis and emergency removal of the hematoma causing spinal cord compression.

REFERENCES

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Спонтанные спинальные эпидуральные гематомы встречаются редко. Авторы сообщают о 55-летнем мужчине, который пробуждается от сильных болей в шее, плечах и от обездвиживания рук и ног. Пациент поступает в клинику по спешности. Соматическое состояние не показывает патологических отклонений. Локальный статус – грубо выраженный вертебральный синдром. Неврологический осмотр устанавливает остро наступившую квадриплегию. Нарушена поверхностная чувствительность типа дистальной парагистезии с уровнем чувствительности мамилл. У пациентов наблюдается задержка мочи. Лабораторное исследование крови не показывает данных о нарушении свертывания крови. Проведена спиральная компьютерная томография шейного сегмента. Исследование говорит о наличии острого эпидурального кровоизлияния в виде маншона около твердой оболочки шейного спинального мозга с большей толщиной с правой стороны (уровень: С2 - С4). Проведена неотложная гемиламинэктомия вправо от С3 позвонка. Удален твердый кровяной сверток, формирующий острую эпидуральную гематому. За 10 дней после операции больной полностью восстанавливается.

**Выводы:** При внезапно наступившей боли в шее, сопровождающейся неврологическим дефицитом для рук, следует подозревать эвентуальное наличие спонтанно сформированной шейной эпидуральной гематомы. Для таких больных подходящим выбором образных исследований является спиральный скенер и ядерномагнитный резонанс. Благоприятный исход заболевания зависит от скорости постановки диагноза и от неотложного удаления гематомы.