Postoperative Spinal Epidural Haematoma Causing Cauda Equina Syndrome: Case Report

Kauda Ekuina Sendromuna Neden Olan Postoperatif Spinal Epidural Hematom: Olgu sunumu

Postoperative Spinal Epidural Haematoma / Postoperatif Spinal Epidural Hematom

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Özet

Kauda ekuina sendromu, kauda ekuinaya bası sonucu, idrar ve/veya anal sfinkter fonksiyon bozukluğu ile giden, bilateral siyatalji ağrısı ve bilateral kuvvet ve duyu kaybı olan nörolojik bir tablodur. Etyolojide lomber disk hastalığı, spinal dar kanal, tümör, hematom, fraktür, infeksiyon ve ankilozan spondilit yer alır. Spinal epidural hematom, lomber spinal cerrahi sonrasında sık görülen komplikasyonlar arasında yer alır. Ancak vakaların çoğu asemptomatik olup, klinik karşılığı yoktur. Postoperatif dönemde gelişen semptomatik spinal epidural hematom, ciddi bir komplikasyon olup, kalıcı nörolojik defisite engel olmak amacıyla acil cerrahi mudahale gerektirir.

Anahtar Kelimeler

Spinal Epidural Hematom; Postoperatif Komplikasyon; Kauda Equina Sendromu

Abstract

Cauda equina syndrome is a neurological disorder defined by urinary and/or anal sphincter dysfunction, bilateral sciatica and bilateral motor and sensory deficits. Regarding the etiology, lumbar disc disease, spinal stenosis, tumors, haematomas, fractures, infectious diseases and ankylosing spondylitis are pathologies causing this syndrome. Spinal epidural haematomas are common amongst complications after spinal surgery. However the majority of these cases are asymptomatic, thus having little clinical importance. Symptomatic postoperative spinal epidural haematomas is a serious complication, and in order to prevent permanent neurologic deficit it requires urgent surgical intervention. This article aims to present the case of a patient with a spinal epidural haematoma after spinal stenosis surgery, causing cauda equina syndrome.

Keywords

Spinal Epidural Hematoma; Postoperative Complications; Cauda Equina Syndrome

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Introduction

Cauda equina syndrome is a neurological disorder defined by urinary and/or anal sphincter dysfunction, bilateral sciatica and bilateral motor and sensory deficits. Regarding the etiology, lumbar disc disease, spinal stenosis, tumors, haematomas, fractures, infectious diseases and ankylosing spondylitis are pathologies causing this syndrome [1]. Asymptomatic spinal epidural haematoma after lumbar spinal surgery are frequent [2], although a haematoma causing cauda equina syndrome is rare [3]. This article aims to present the case of a patient with a spinal epidural haematoma after spinal stenosis surgery, causing cauda equina syndrome.

Case Report

A 74 years old woman suffering from severe back pain and bilateral sciatica is admitted to our clinic. Patient's history revealed that her complaints had exagereted in the last month and that she didn't relived dispite opioid group painkillers admitted on various other medical centers. The pain caused by walking and painless walking distance shorter than ten meters are considered as neurogenic claudication. Physical examination findings were anthropiod posture, no motor deficits, bilateral L5/S1 dermatomal hypoesthesia and bilateral hypoactive Achilles reflexes. Lumbar spinal MRI showed spinal canal stenosis at L3/L4 and L4/L5 levels and lumbar scoliosis. Myelography confirmed the findings as well as showing a full blockage at L3/L4 level. A surgical treatment of fixation via bilateral L3, L4, L5 transpedicular screw-rod instrument system + decompression via L3, L4 total laminectomies and flavectomies is planned and perfomed according to the plan without any serious peroperative complication.

Postoperative and preoperative neurologic examination had no significant difference. Postoperatively the patient is monitored in the intensive care unit for one day and then transferred to the neurosurgery inpatient clinic. Urinary catheter is withdrawn and urinary incontinence has been detected. New neurologic examination revealed urinary and fecal incontinence accompanied by a complete motor function loss of L4 and below levels. An urgent lumbar MRI revealed a massive haematoma on the surgery region compressing spinal cord (Figure 1). The patient underwent urgent haematoma evacuation surgery. The patient received physical treatment and rehabilitation postoperatively. After a treatment of 6 weeks, muscle strenghts of the hip flexors and knee extensors were 5/5 and of the big toe dorsiflexors and ankle plantar flexors were 4/5. The patient had urinary but no gaita incontinence.



Figure 1. Postoperative SEH sagittal MRI.

Discussions

Spinal epidural haematomas (SEH's) are common amongst complications after spinal surgery. However the majority of these cases are asymptomatic, thus having little clinical importance. Even though the incidence of asymptomatic SEH's is reported 33 – 100 % in the literature [2], the incidence of those requiring surgical evacuation is reported as low as 0,1 – 3% [3]. Symptomatic postoperative SEH is a serious complication, and in order to prevent permanent neurologic deficit it requires urgent surgical intervention. Consequently proceeding with caution in the postoperative period, and acting quickly when signs of cord compression are detected is vital. In the literature some case reports of cauda equina syndrome caused by SEH are available [4,5].

Aiming to prevent SEH, some risk factors have been identified. Nevertheless there is not a full consensus about the list. Age over 60 years, preoperative nonsteroidal anti-inflammatory drug use and Rh + blood type are reported as preoperative as risk factors; five or more spinal levels undergoing surgery, one litre or more peroperative bleeding and preoperative hemoglobin level below 10 g/dL are reported as peroperative risk factors [5,6]. Besides this list as risk factors, some articles report only multilevel interventions and preoperative coagulopathy as SEH risk factors [7]. Widespread opinion in daily neurosurgical practice not just for spinal surgery but for all kind of surgical procedures is that the transfusion of fresh frozen plasma, platelet suspensions and autotransfusion preparates reduces the risk of postoperative bleeding. However, studies on the use of these blood derivates report no risk reduction [5]. The authors support the opinion that avoiding excessive blood loss especially for multilevel spinal surgeries and for patients aged over 60 years old is essential.

Drain use is another controversial issue in neurosurery practice. Our tendency is to use drains especially when patients have predictable risk factors such as diagnosed coagulopathy, advanced age and a large incision. Particularly for patients undergoing surgeries including multilevel laminectomy and spinal instrumentation which generally require an extensive incision, SEH originating from paravertebral muscle bleeding is likely [7]. Nevertheless, studies report that the use of drainage do not increase SEH risk [5,6,7] and also increase the risk of infection when left more than one day in the operation region [8].

In this paper, a case with postoperative SEH that caused cauda equina syndrome is presented. Most of the the risk factors described in the literature such as advanced age, a multilevel spinal surgery, a peroperative blood loss of more than 1 L, and a postoperative hemoglobin level under 10 g/dL were present in the patient. The subfacially placed drain, also consistent with the literature, did not prevent postoperative SEH.

Conclusion

Symptomatic SEH after spinal surgery is a rare but serious complication that can cause neurological deficits. Due to the need for an urgent surgical intervention, in terms of postoperative follow up, patients should be monitored carefully for cord compression findings and diagnostic procedures should be performed in the shortest possible time interval when necessary.

Competing interests

The authors declare that they have no competing interests.

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