

Case Report

Epidural hematoma after routine epidural steroid injection

Azzam M. Alkhudari, Craig S. Malk, Abed Rahman, Taruna Penmetcha, Maria Torres

Department of Anesthesia and Pain Management, John H. Stroger, Jr. Hospital of Cook County, Chicago, IL, USA

E-mail: *Azzam M. Alkhudari - aalkhudari@cookcountyhhs.org; Craig S. Malk - cmalk@cookcountyhhs.org; Abed Rahman - arahman2@cookcountyhhs.org; Taruna Penmetcha - tpenmetcha@cookcountyhhs.org; Maria Torres - mtorres4@cookcountyhhs.org

*Corresponding author

Received: 18 November 15 Accepted: 07 January 16 Published: 06 May 16

Abstract

Background: There are few reported cases of an epidural spinal hematoma following interventional pain procedures.**Case Description:** We report a case of a spinal epidural hematoma in a patient with no known risk factors (e.g. coagulopathy), who underwent an epidural steroid injection (ESI) in the same anatomic location as two previously successful ESI procedures.**Conclusion:** Early detection was the key to our case, and avoiding sedation allowed the patient to recognize the onset of a new neurological deficit, and lead to prompt diagnosis as well as surgical decompression of the resultant hematoma.**Key Words:** Epidural hematoma, epidural steroid injection, increased risk of neurological deficit, no long-term efficacy, paraparesis

Access this article online

Website:

www.surgicalneurologyint.com

DOI:

10.4103/2152-7806.181906

Quick Response Code:



INTRODUCTION

There is no documented long-term efficacy of epidural steroid injections (ESI) documented in the literature. Furthermore, they are not always safe as documented in this case of an ESI leading to an epidural spinal hematoma requiring emergency evacuation.

CASE REPORT

A 48-year-old-female with lumbar radiculopathy had previously undergone an L5 discectomy. Following an L5 hemilaminectomy, she presented with increased left lower extremity radiculopathy. As the magnetic resonance imaging (MRI) did not show any significant epidural scar, she underwent two sets of interlaminar lumbar ESIs under fluoroscopic guidance. Both provided >50% pain relief lasting 2 months each. While undergoing a third ESI, in the same interlaminar space, she reported severe worsening of her lower low back pain after injection of 0.5 ml of radiographic contrast dye; the procedure was immediately aborted.

In the postoperative anesthesia care unit, she not only continued to have severe low back and left leg pain, but newly demonstrated increased an acute left-sided foot drop. She immediately underwent both computed tomography scan and MRI evaluations [Figures 1 and 2]. Since both studies demonstrated an epidural hematoma extending from L2 to L4, she emergently underwent an L3/L4 hemi laminotomy for evacuation of hematoma. Postoperatively, as she had continued pain and the left-sided foot drop, she was taken back to operating room for an additional L4/L5 micro discectomy for decompression of the left L5 nerve root. Six weeks later,

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Alkhudari AM, Malk CS, Rahman A, Penmetcha T, Torres M. Epidural hematoma after routine epidural steroid injection. *Surg Neurol Int* 2016;7:55.

<http://surgicalneurologyint.com/Epidural-hematoma-after-routine-epidural-steroid-injection/>



Figure 1: Sagittal T1 magnetic resonance imaging of L2–L4 hematoma. (Images obtained from John H. Stroger Jr, Hospital of Cook County, Department of Radiology 2015)

she was using a cane, and the left-sided foot drop had significantly improved.

DISCUSSION

Complication of epidural steroid injection

ESIs are the most commonly performed pain procedures in the United States. However, in the literature,^[1,5] they have no long-term and only variable short-term benefit. Known complications related to ESI include vasovagal syncope, postdural puncture headaches, infections (e.g., epidural abscess, meningitis), and epidural hematoma.

Complications of epidural spinal anesthesia

Although the incidence and prevalence of epidural hematoma after steroid injections are not well known, the overall incidence of hematoma formation after epidural anesthesia ranges from 1/15,000 to 1/220,000.^[5] Risk factors for epidural hematoma formation following these injections include anticoagulant therapy, nonsteroidal anti-inflammatory drug therapy, bleeding diatheses, traumatic needle or catheter insertions, previous surgeries, and known spinal cord pathologies.^[4,5]

While such hematomas constitute rare complication, when they develop, they can result in acute spinal cord compression characterized by severe back pain, motor deficits, bowel or bladder dysfunction, and paraplegia.^[2]

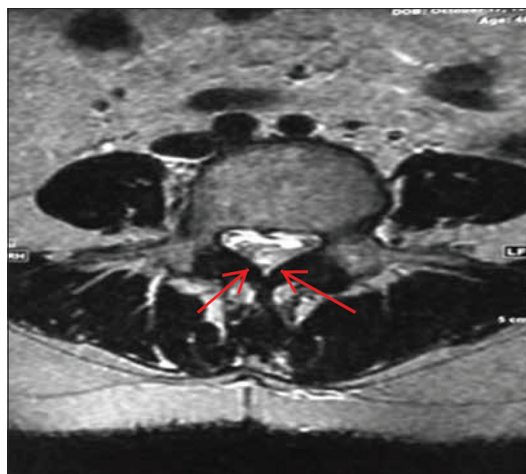


Figure 2: Axial T2-weighted images of L2–L4 hematoma. (Images obtained from John H. Stroger Jr, Hospital of Cook County, Department of Radiology 2015)

Case presentation

In the case presented, the patient had no known risk factors for the development of an epidural hematoma. While we acknowledge that such a severe complication occurred after a routine ESI procedure, the anesthetic management in this particular case (e.g. only local anesthetic) that helped lead to a rapid diagnosis of an evolving hematoma and definitive surgical intervention.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Benzon, et al. *Essentials of Pain Medicine*. 3rd ed. ch. 44. Philadelphia, PA, USA: Elsevier Saunders; 2011. p. 311-12.
2. Horlocker TT. Regional anaesthesia in the patient receiving antithrombotic and antiplatelet therapy. *Br J Anaesth* 2011;107 Suppl 1:i96-106.
3. Kreppel D, Antoniadis G, Seeling W. Spinal hematoma: A literature survey with meta-analysis of 613 patients. *Neurosurg Rev* 2003;26:1-49.
4. Meikle J, Bird S, Nightingale JJ, White N. Detection and management of epidural haematomas related to anaesthesia in the UK: A national survey of current practice. *Br J Anaesth* 2008;101:400-4.
5. Neal JM, Bernards CM, Hadzic A, Hebl JR, Hogan QH, Horlocker TT, et al. ASRA practice advisory on neurologic complications in regional anesthesia and pain medicine. *Reg Anesth Pain Med* 2008;33:404-15.