

COMPLETE CAUDA EQUINA SYNDROME AFTER CAUDAL EPIDURAL STEROID INJECTION A Case Report

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Fujishiro T, Boissière L, Cloché T, Cugy E, de Seze M, Menegon P, Bourghli A, Vital JM, Gille O, Obeid I. Syndrome de la queue de cheval après infiltration de corticoïdes par le hiatus sacro-coccygien: Un cas clinique. *J Med Liban* 2016; 65 (3): 180-182.

ABSTRACT • Epidural caudal steroid injections are commonly used to relieve radicular pains. If minor complications have widely been reported, few major complications have been described. This case presentation reports a cauda equina syndrome following caudal epidural injection. The magnetic resonance imaging (MRI) performed revealed a hematoma inside a caudal meningocele. A surgical drainage of the hematoma was performed, in emergency, leading to symptoms relief. Caudal meningocele diagnosed by MRI before caudal steroid injection could represent a contraindication for this type of procedure.

Keywords: caudal epidural injection; cauda equina; meningocele; lumbar spine; radicular pain

RÉSUMÉ • L'infiltration par le hiatus sacro-coccygien est une thérapeutique couramment utilisée pour soulager les douleurs radiculaires. Si des complications mineures ont fréquemment été rapportées, peu de complications majeures ont été décrites. Ce cas clinique rapporte un syndrome de la queue de cheval après une infiltration par le hiatus sacro-coccygien. L'imagerie par résonance magnétique (IRM) réalisée, révéla un hématome à l'intérieur d'un ménincocele sacré. Un drainage chirurgical a été réalisé en urgence, entraînant une amélioration des symptômes neurologiques. Les ménincoèles sacrés, diagnostiqués à l'IRM, pourraient être une contre-indication aux infiltrations épidurales par le hiatus sacro-coccygien.

INTRODUCTION

Epidural caudal steroid injection is used for chronic radicular pain; it gives short-term strong relief and moderate long-term relief [1]. Minor complications can occur: transient leg pain increase, transient headaches, facial flushing, nausea or vaso-vagal reactions. These adverse effects are frequent and occur in 15% of cases [2]. Major complications, have also been described such as intravascular injection (3%) and hematoma (less than 1%) [3].

We report a case of complete cauda equina syndrome following caudal epidural injection. To our knowledge, it is the first published case describing such a complication after this type of procedure.

PRESENTATION OF THE CASE

A 77-year-old woman was presenting chronic low-back and S1 right radicular pain with no motor deficit. Medical treatment was observed for several months, in-

cluding analgesics (paracetamol, tramadol, non-steroid anti-inflammatory) and physiotherapy but gave no sufficient pain relief. The MRI performed showed lumbar spine degenerative lesions (zygapophyseal arthrosis, degenerative spondylolisthesis and a L5-S1 disc herniation). It also showed a voluminous sacral meningocele (Figure 1).

An epidural injection by the sacro-coccygeal hiatus was performed in December 2013. The procedure was performed under fluoroscopy control and consisted in an injection of 5 mL of lidocain, 25 mL of saline isotonic solution, and 40 mg of triamcinolone. The needle caliber was 22G. This procedure was performed on an outpatient basis. The patient was released after 4 hours surveillance. She was sent home without major pain or any neurological troubles.

Back home she began experiencing muscle weakness in both legs and urinated without feeling it. Symptoms worsened and she consulted the emergency unit two days after the injection.

She was then diagnosed with a complete cauda equina syndrome: she had a complete anaesthesia of the perineum, a urinary retention and her anal sphincter tone was abolished. A second MRI performed in emergency had shown a hematoma located into the meningocele (Figure 2).

In view of these symptoms a sacral laminectomy was performed in emergency. The dura mater was opened in order to evacuate the hematoma. The hematoma was of medium volume. A patch of GORE-TEX® was mandatory

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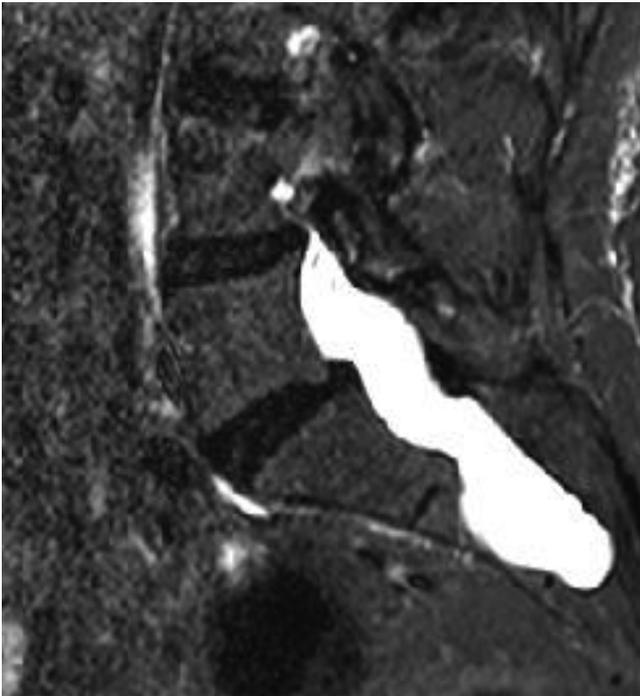


FIGURE 1. MRI showing L5-S1 discopathy and a classic sacral meningocele.

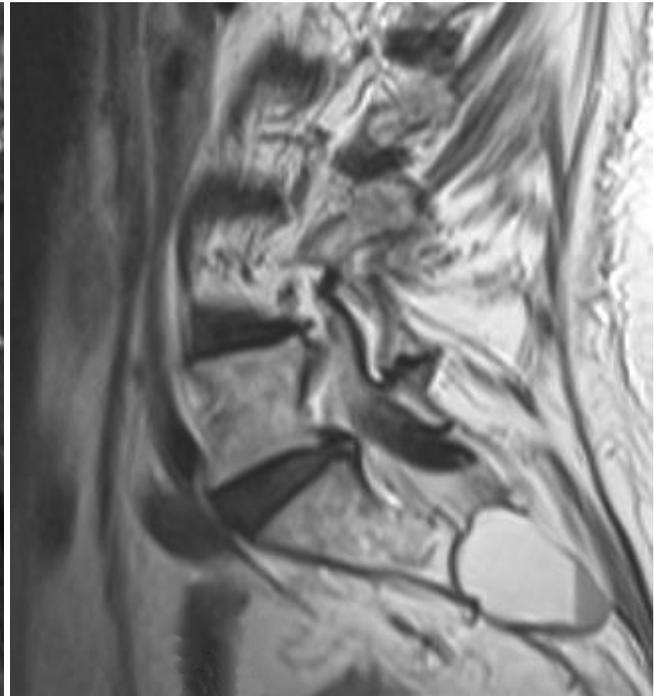


FIGURE 2. Post-procedure MRI showing the blood level at the meningocele's bottom.

to obtain an impervious dura. The suture was considered tight, no spinal sealant was added and a non-aspirating drain was placed for 48 h [4]. No postoperative complication occurred.

The patient was left supine for 48 hours and transferred to a physical medicine ward in order to continue the perineal re-education. She stayed there for two weeks. At the end of her stay she had recovered from her anal sphincter atonia with no fecal incontinence. She had a partial urinary incontinence without necessity of urinary catheter. She had no deficit in the limbs.

At one year follow-up the patient was asymptomatic.

DISCUSSION

To our knowledge no published study has reported cauda equina syndrome after caudal epidural steroid injection. Spinal meningocele remains uncommon, Park has estimated a prevalence of 2.1% [5], and are classically asymptomatic [6]. No data reports the management of such cases and few options seemed adapted to the situation. A lumbar drainage to manage the hematoma and avoid open surgery could have been discussed. The symptoms severity and risk of permanent disorder favored an emergency surgery to evacuate the hematoma. The meningocele opening after sacral laminectomy seemed the best way to manage this unusual situation. The postoperative satisfying outcome validates surgical intervention in such a case.

The neurologic symptoms mechanism doesn't appear clearly. If the absence of limb symptoms can easily be understood given the hematoma location, the MRI per-

formed in emergency evidenced a blood level indicating that no direct compression of the neural elements had occurred. The lidocaine, which was added to the steroids, does not seem to have induced the patient's symptoms. Indeed a nerve root anesthesia would have occurred immediately as the patient suffered from cauda equina 48 hours after the injection. It seems reasonable to incriminate the hematoma, due to the trauma induced by the needle during the injection. Several hypotheses can be put forward for such symptoms: a chemical reaction due to the hematoma leading to a sacral roots suffering [7], a local pressure raise educing nerve root damage, or cerebrospinal fluid flow modification.

The GORE-TEX® dural patch use was preferred to a muscular or fat patch because of the important dura defect. GORE-TEX® patches are frequently used by neurosurgeons for the cranium, and its use in the spine is also well documented [8]. The absence of dural fistula and postoperative complications can justify the relevance of this option.

CONCLUSION

This case reports a major complication after caudal epidural injection. If the use of steroid injections is an efficient way to treat lumbar and radicular chronic pains, a pre-procedure MRI seems mandatory. In view of this case, a caudal meningocele represents to us a contraindication for this type of procedure.

CONFLICT OF INTEREST: None to declare.

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