

## Case Report

# Surgical Treatment of Endometriosis in the Lumbar Spine

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### To cite this article:

Rodrigues Jr José Carlos, Bortholin da Silva Vithor Ely, Batista de Sousa Aldimar, Aguillar Condori Luís Alberto. Surgical Treatment of Endometriosis in the Lumbar Spine. *International Journal of Neurosurgery*. Vol. 6, No. 2, 2022, pp. 44-47. doi: 10.11648/j.ijn.20220602.13

Received: July 16, 2022; Accepted: August 11, 2022; Published: August 24, 2022

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**Abstract:** Introduction: Endometriosis consists of the presence of endometrial tissue outside the uterus most often in the pelvic peritoneum, ovaries, and rectovaginal septum. It can present with low back pain and radiculopathy, being its presentation within the spinal canal very rare. This paper reports the case of a patient with endometriosis within the spinal canal who presented with chronic low back pain that evolves to sciatica, showing its rarity and relevance as a differential diagnosis of low back pain. Case Report: A 32 years old, female patient, search attendance complaining of low back pain that started 1 year ago. Her pain was in the left S1 territory and had worsening in a cyclical manner. Magnetic resonance [MR] of the lumbosacral region demonstrated small nodular epidural lesion at the S1 level, with well-defined limits, located along the posterior contour of the vertebral body of S1, determining discrete local bone remodeling and bone marrow edema in this topography. With these features, patient was submitted to surgical treatment. The capsule of the cyst was removed and send to pathology examination. Pathology examination revealed endometriosis with focal stroma in fibroconnective tissue with old hemorrhage. With all of this in mind, we can affirm that the case we present is very rare, with few similar publications, and that's highlight its originality. Conclusion: As illustrated by our case, spine surgeons must be aware of this pathology. Treatment options depend on the patient's symptoms and planning for pregnancy, with total removal of endometrial tissue being the ideal treatment targeted by the neurosurgeon.

**Keywords:** Endometriosis, Spinal Canal, Lumbar Pain

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## 1. Introduction

Endometriosis consists of the presence of endometrial tissue outside the uterus [1], most often in the pelvic peritoneum, ovaries, and rectovaginal septum [1, 2]. It occurs in about 5-10% of women of reproductive age [2, 3] and despite its typical manifestation of pelvic pain and dysmenorrhea, it can present with low back pain and radiculopathy [4-6], being its presentation within the spinal canal very rare [5, 7, 8].

This paper reports the case of a patient with endometriosis within the spinal canal who presented with chronic low back pain that evolves to sciatica, showing its rarity and relevance as a differential diagnosis of low back pain.

## 2. Case Report

A 32 years old, female patient, search attendance complaining of low back pain that started 1 year ago. Initially, the pain was localized in the lumbar spine but in the last weeks It was radiating to her left leg until her foot. The pain was increasing in the last months precluding her of working and exercise. She has no previous diseases except a past of laparoscopic surgery for peritoneal endometriosis. Her pain was in the left S1 territory and had worsening in a cyclical manner. At examination she didn't show any muscular weakness, tendon reflexes and sensibility were normal, Lasegue maneuver was positive at 30 degrees at the left side. Magnetic resonance (MR) of the lumbosacral region demonstrates small nodular epidural lesion at the S1 level,

with well-defined limits, located along the posterior contour of the vertebral body of S1, determining discrete local bone remodeling and bone marrow edema in this topography. The nodular formation bulges / straightens the ventral surface of the dural sac and maintains proximity to descending intracanal roots of S1, notably on the left, and measures about 2.3 x 1.6 x 0.8 cm. Such lesion does not present enhancement after administration of intravenous contrast indicating cystic nature and presenting high signal in T1 probably content with high protection content. (Figures 1 and 2).

With these features, patient was submitted to surgical treatment. The surgery consisted of a midline incision in the lumbosacral region with exposure of L5 and S1 laminae and

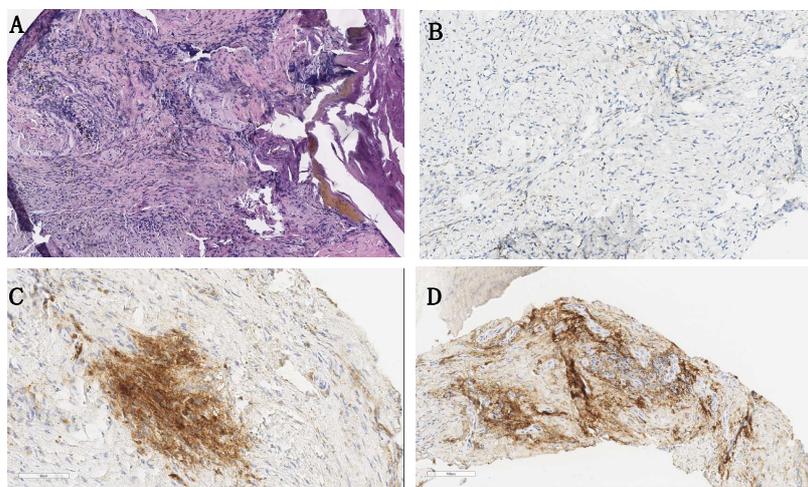
facets. A S1 bilateral laminectomy was done and then with the use of a microscope we perform decompression of the L5-S1 roots on the left side and then we found a cystic lesion in the spinal canal on the ventral surface, the cyst was blackened and when opened its content was similar with old hemorrhage. The capsule of the cyst was removed and send to pathology examination. The postoperative period was uneventful. Patient had a good recovery with complete resolution of the radiculopathy and was discharged on second post-op day. Pathology examination revealed endometriosis with focal stroma in fibroconnective tissue with old hemorrhage. Immunohistochemical analysis was positive for CD10 and CD68. (Figure 3).



**Figure 1.** Left: sagittal fat suppression MR of the lumbosacral region; Right: T2 sagittal MR of the lumbosacral region. Demonstrates a cystic lesion along the posterior contour of S1, determining discrete local bone remodeling and bone marrow edema in this topography.



**Figure 2.** Left: T2 axial MR of the lumbosacral region; Center and Right: T1 with gadolinium MR of the lumbosacral region. Demonstrates a cystic lesion with compression of the spinal canal, especially at the left side, with no contrast enhancement and edema at the adjacent sacral bone.



**Figure 3.** A-D: microscopic images depicting the common characteristics of endometriosis with focal stroma in fibroconnective tissue with old hemorrhage. Immunohistochemical analysis positive for CD10 and CD68.

### 3. Discussion

Endometriosis consists of the presence of endometrial tissue in extrauterine sites, its occurrence being common in women of childbearing age. However, the occurrence of endometriosis within the spinal canal is a rare event and its pathophysiology is still unknown, there are theories that propose a reverse transport of endometrial tissue through Batson's venous plexus and / or lymphatic vessels [1, 7, 9], and there are others that discuss the dissemination of endometrial tissue through the autonomic nerves of the pelvis peripherally to the sacral roots proximally [1, 9].

The most reported location is in the lumbar region, although there are also reports in the medullary cone, sacral and lumbar roots and in the vertebral bodies [4, 10]. Although the typical patient is female of childbearing age, there are also reports in children [8, 11].

The symptoms of spinal canal endometriosis are due to the compression of neural structures, often in a cyclical manner accompanying the interlude [4–6]. Thus, the clinical picture usually consists of low back pain and may be accompanied by radiculopathy. Despite the possible neurological findings, the suspicion of diagnosing endometriosis must come from the knowledge of the doctor who is attending the patient, as it manifests itself with a normal general and gynecological physical examination. In addition, in a magnet resonance (MR) of the spine, a heterogeneous lesion in T1 and T2 is observed due to the presence of blood and hemosiderin deposit [10, 11], not having a specific finding, making the preoperative diagnosis impossible and becoming a challenge to the neurosurgeon.

Initial treatment should be based on clinical care through physical therapy and analgesic drugs [2, 12, 13]. Surgery should be considered in patients with spinal cord or cauda equina compression, in addition to cases with intense symptoms [3, 14]. During surgery, as much tissue as possible should be removed, avoiding neural injury, and obtaining a lesion for the anatomopathological diagnosis [15].

The anatomopathological study consists of the gold standard for the diagnosis of both pelvic endometrioses, but mainly for endometriosis within the spinal canal. In the lamina, the endometrial glands associated with the endometrial stroma are evident, and there may be hemosiderosis due to hemorrhage. In immunohistochemistry, there will be positivity for progesterone and estrogen receptors, and it may also be positive for the tumor antigen CA125 [6, 10].

Adjuvant drug therapy may be necessary in cases of partial resection to prevent recurrence [2, 4]. Oral contraceptives and gonadotropin-releasing hormone (GnRH) agonists are used to decrease cyclic proliferation and degradation of ectopic endometrial tissues, preventing re-accumulation with mass effect and recurrent symptoms [2].

Hysterectomy with bilateral salpingectomy can be considered in cases refractory to treatment or if drug therapy has intolerable side effects, only in patients who do not intend to become pregnant [15]. It is mandatory to advise patients that, despite definitive surgery, endometriosis can recur in

5-15% of cases, in addition to having the potential to become an endometrioid carcinoma or, more rarely, a cell carcinoma clear [11–13].

With all of this in mind, we can affirm that the case we present is very rare, with few similar publications, and that's highlight its originality.

### 4. Conclusion

When young female patients present with low back pain and/or sciatica, mainly of cyclical characteristics, endometriosis of the spinal canal must be remembered, as its diagnosis is difficult to suspect. Endometriosis, if not diagnosed or poorly treated, can develop into larger lesions with adhesion and extensive fibrosis, which can cause anatomical and structural distortions. As illustrated by our case, spine surgeons must be aware of this pathology.

Treatment options depend on the patient's symptoms and planning for pregnancy, with total removal of endometrial tissue being the ideal treatment targeted by the neurosurgeon.

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