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Case Report

Equine Cauda Syndrome Secondary to Spinal Choristoma

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Abstract

Introduction: Choristomas are benign tumors of histologically normal tissue in an abnormal location. The histological classification is not well established at present. If tissues of 3 germ layers are identified in the lesion, a teratoma with malignant potential should be considered [1].

In benign spinal lesions with slow growth pattern, the gold standard treatment is complete surgical resection. The surgical approach to achieve this objective has been discussed in the literature describing from laminectomy of more than one level to minimally invasive endoscopic procedures [2].

When faced with a complete or incomplete cauda equina syndrome, we suggest carrying out a lumbosacral spine magnetic resonance imaging (MRI) as part of the diagnosis approach to reach the etiology and perform surgical planning.

Case Report: Male of 22 years of age, 3 years of evolution characterized by paresthesias and dysesthesias in pelvic limbs, absence of cremasteric and bulbocavernosus reflex and urinary incontinence. The diagnosis of cauda equina syndrome was made. MRI shows intraspinal intradural lesion, extra-axial level of L2. It was managed by microsurgical resection and short arthrodesis, reporting the histopathological study as Choristoma.

Conclusion: When the diagnosis cauda equina syndrome is made, we suggest carrying out an MRI study without delay to search for possible etiology and direct the treatment. The histopathological study of a tumor lesion is vital for the postoperative follow-up and to regulate an adequate behavior to avoid tumor recurrence and surgical reinterventions.

Keywords: Choristoma; Spinal Tumor; Equine Cauda Syndrome; Magnetic Resonance Imaging

Introduction

Primary spinal tumors include intradural intramedullary and intradural extramedullary tumors. Extramedullary intradural tumors are very rare even though they include the 80% of primary spinal tumors [3].

Histologically include Schwannomas (40%), followed by meningiomas (40%), gliomas (22%), other neurofibromas, teratomas, lipomas and metastasis tumors [4-6].

Choristomas are benign tumors of histologically normal tissue in an abnormal location, the histological classification of these lesions is not well established at present. If tissues of the 3 germ layers were identified in the lesion, a teratoma should be considered which can be divided into immature, mature and teratoma with malignant components, the latter contains 1 or more of the malignant germ cell tumors, for example: choriocarcinoma, germinoma, embryonal carcinoma, endodermal breast tumor; in addition to mature or immature tissue [1,7,8].

Other entities to consider within differential diagnosis of choristoma is hamartoma and dysraphism, the first is a benign (noncancerous) malformation similar to a tumor formed by an abnormal mixture of cells and tissues found in areas of the body where it grows, this is considered a development error and can occur in several places where it is well called hamartomatosis.

This is an interesting case because the presence of a choristoma with a normal ectopic gastric and prostatic tissue component at the level of the lumbar spinal canal has not been reported, which is why we consider it an unusual finding and we decided on this publication.

Cauda equina syndrome has been described as a complex of symptoms and signs: low back pain, unilateral or bilateral sciatica, motor weakness of the lower extremities, sensorial alteration in saddle and loss of visceral function, as a result of the compression of the horsetail and is one of the few surgical spinal emergencies [9].

Relevant symptoms include bilateral radicular pain and/or dermatomal sensory loss and/or myotonic weakness plus any changes in bladder or bowel function, however minor. When there are symptoms of bilateral radiculopathy and/or sphincter involvement, a careful examination should be performed to identify objective signs such as dermatomal sensory loss and/or myotonic weakness. Examination of the perineum and rectal examination should be performed in all cases [10,11].

MRI is essential for the primary approach of the patient as a possible cauda equina syndrome due to the low sensitivity of the clinical evaluation [12]. MRI is the study of choice due to its high sensitivity and specificity for the identification of soft tissue compared to tomography [13].

In benign slow-growing spinal lesions, the gold standard treatment is total surgical resection. To achieve this goal, the surgical approach has been extensively discussed in the literature describing more than 1 level of laminectomy to minimally invasive endoscopic procedures [2].

Description of the Case

Male of 22 years old, student of mechanical engineering, right hand laterality, surgical history of enucleation of the right eye due to ocular trauma at 3 years, has a 3-year history of evolution characterized by mild pain in both malleolus, ureteral type, intermittently that was exacerbated by walking, then extended to the inner side of both thighs, indicating improvement with intake of non-steroidal anti-inflammatories, months later paresthesias were added in the external malleolus and lateral face of the plantar region of the right foot and urinary incontinence. In the neurological physical examination with integrated superior mental functions, without alterations in cranial pairs, complete vestibulocerebellar, with tone and preserved trophism, muscular force 5/5 in scale of Daniels both proximal and distal in the 4 extremities, reflexes of muscular stretching ++/++ global, absent bulbocavernosus reflex, absent cremasteric reflex and symmetric S1 hypoesthesia, rest of dermatomes without alterations, normal rectal examination.

Magnetic resonance of the lumbosacral column, T1 and T2 sequence, showing homogeneous intraspinal, intradural and extra-axial lesions, well-defined edges, size of 20 mm x 18 mm at L2 level, with absence of uptake when contrast medium is administered (Figure 1).

Figure 1: A, B and C: Sagittal section IRM, D: Coronal section and E: Axial section.

Surgical management

In view of the progressive clinical evolution of our patient and the magnetic resonance findings, we decided to perform surgical resection.

With the patient under general anesthesia and in prone position, the site is located to intervene with lateral projection radiography, posterior lumbar approach, muscular dissection and exposure of transverse laminae and processes, L2 laminectomy and left L1 hemisemilaminectomy, durotomy, total resection Microsurgery of tumor lesion, homeostasis, durorraphy and drainage placement, short posterior arthrodesis is decided (Figure 2).

Figure 2: A: Durotomy, B: Tumoration at level L2, C-D evidence of complete resection, and Tumor lesion of 20 mm x 18 mm of firm consistency, yellowish coloration and well-defined edges.

Follow up

The patient was managed with conventional analgesia, with pain neuromodulators, gastric protector and close neurological surveillance. Drainage was removed 24 hours after surgery. Control image study with adequate placement of prosthetic material. It was decided to discharge at home due to improvement 48 hours after postoperative.

The withdrawal of points is cited 15 days after discharge, with adequate healing, without complications or infection data.

The patient was explored once a month; Clinically with adequate urinary continence, with not only with recovery of the bulbocavernosus and cremasterian reflex but also with improvement of the sensitivity in dermatome S1.

After 3 months a lumbosacral MRI was performed. Complete resection of the lesion is evidenced, as well as a column with adequate sagittal and coronal balance (Figure 3A-3D).

Figure 2: A: Durotomy, B: Tumoration at level L2, C-D evidence of complete resection, and Tumor lesion of 20 mm x 18 mm of firm consistency, yellowish coloration and well-defined edges.

Subsequent appointments are given at 6 months and a year to continue monitoring and rule out any possibility of recurrence.

Histopathological report

Nervous tissue with ectopic tissues: gastric, adipose and prostatic (Figure 4A-4D). A rare entity which typically presents as a benign cystic mass formed by heterotopic epithelium. Spinal choristoma of prostate, gastric and adipose content.

Discussion

The occupant lesions arising from the phylum layer are essentially extramedullary and intradural ones. Spinal extramedullary

Figure 4: A-D: Spinal choristoma of prostate, gastric and adipose content.

intradural tumors are uncommon and the most commonly encountered entities include schwannomas, meningioma, neurofibroma, myxopapillary ependymoma, paraganglioma, and leptomeningeal metastasis [8,14].

The Choristoma of our patient is unique due to the location and type of tissue presented (adipose, gastric and prostate).

Although radicular symptoms may be present in cauda equina syndrome, there will also be saddle anesthesia (sensory changes in the groin area) and bladder or rectal dysfunction. The incidence of urinary incontinence is about 55% approximately [9]. Our case presented symptoms and motor, sensory and urinary signs.

The most important differential diagnosis for spinal Choristoma includes spinal hamartoma and teratoma [1].

Magnetic resonance is the modality of choice due to the greater sensitivity and specificity for soft tissues compared to tomography [13].

The slow-growing benign spinal lesions, the standard gold treatment is complete surgical resection. To achieve this goal, the surgical approach has been extensively discussed in the literature, ranging from laminectomy of more than 1 level to minimally invasive endoscopic procedures [2].

Surgical treatment is focused on eliminating the effect of tumor volume, trying to reduce the injury completely and safely [7].

Because these lesions have a very slow growth and cause a neurological lesion secondary to the mass effect, a very satisfactory and lasting clinical effect can be obtained by obtaining total or subtotal resection [7]. In our patient a total resection of the lesion was achieved through microsurgery and clinically improved significantly, also due to the type of satisfactory resection.

Conclusion

In the face of a complete or incomplete cauda equina syndrome, we suggest carrying out a simple and contrasted MRI study of the lumbosacral spine without delay in order to search for the possible etiology and direct the treatment towards it. In this case the symptomatology was reversed by removing the compressive effect of the lesion on the nerve roots. The histopathological study of a tumor lesion is vital for the postoperative follow-up and to regulate an adequate behavior to diminish or avoid tumor recurrence and surgical reinterventions. When intervening two levels in the spine we suggest a short arthrodesis to avoid future deformations. The follow-up in the outpatient consultation with this type of lesions should be at least two years with serial magnetic resonance monitoring because cases of tumor recurrence have been reported in the course of this time.

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