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Diastematomyelia: A Case Report in Adults

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Abstract **Case Report**

A rare spinal cord malformation, characterised by an extensive sagittal separation of the vertebral canal and its contents, giving a split spinal cord appearance. Two types of diastematomyelia have been described. We report the case of a female patient, 62-year-old, who presented with decreased muscle strength in the lower limbs without associated sphincter disorders. The patient underwent T1- and T2-weighted magnetic resonance imaging (MRI) of the spine in axial, sagittal and coronal sections. The MRI showed a bifid appearance of the thoracolumbar spinal cord in two hemi-cords with a bone spur separating the two hemi-cords, compatible with type 2 of diastematomyelia. Diastematomyelia is a rare spinal anomaly that may be associated with other malformations. The treatment strategy depends essentially on the progression of clinical (neurological) signs and associated malformations.

Keywords: Diastematomyelia, spinal cord, MRI.

INTRODUCTION

Diastematomyelia is a rare congenital anomaly of unknown aetiology. A closed spinal dysraphism characterised by the presence of a fibrous or bony medial spur that crosses the spinal canal in the sagittal plane. The spinal cord is then divided into two generally asymmetric hemimoels. It most commonly affects the lumbar spine. It is often associated with other malformations. In this case, we will describe the imaging appearance of this malformation.

PATIENT AND PRESENTATION

A woman in 62-year-old presented a left low back pain from 10 years. There was no history of urinary symptoms. Neurological examination was normal. Standard X-rays showed fusion of the vertebral bodies of L4 and L5 with a bony septum at L4-L5 clearly demonstrated by CT scan.

The patient underwent T1- and T2-weighted magnetic resonance imaging (MRI) of the spine in axial, sagittal and coronal sections. The MRI showed a bifid appearance of the thoracolumbar spinal cord in two hemi-cords, over a height of 4 vertebrae between D11 and L3, with bone spur separating the two hemi-cords. No signs of scoliosis.

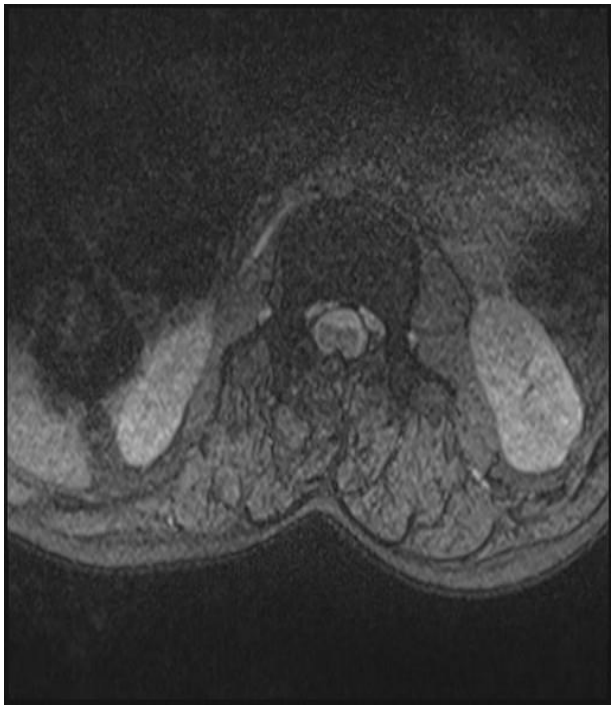

Figure 1: T1 Dixon axial sequence showing type I of diastematomyelia: diastematomyelia with common arachnoid and dural envelopes

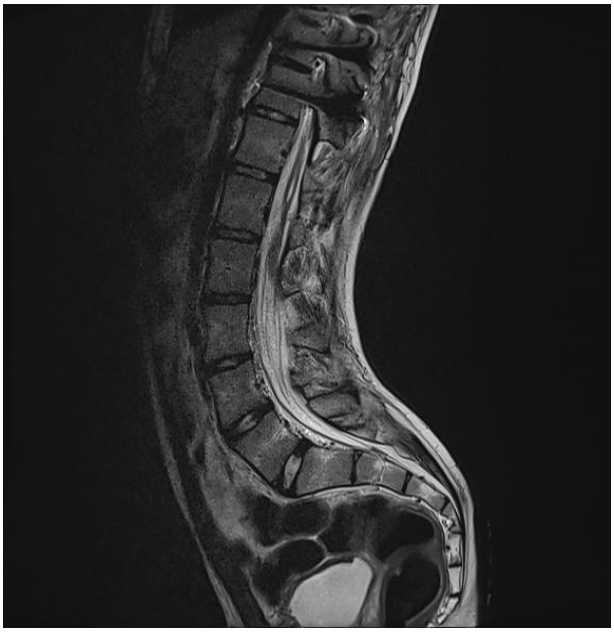

Figure 2: STIR sagittal sequence showing type I of diastematomyelia: diastematomyelia with common arachnoid and dural envelopes

DISCUSSION

There are two types of diastematomyelitis: Type I includes diastematomyelias with common arachnoid and dural envelopes. This form is rarely symptomatic. It is not associated with a bone spur, but with simple fibrous adhesions. Type II is represented by the presence of double arachnoid and dural envelopes [1]. The two dural sacs are usually separated by a central bony or cartilaginous spur. In our case, the diastematomyelia is type 2 with double arachnoid and dural envelopes, which are inserted on the posterior surface of the vertebral body, with a variable orientation (sagittal or oblique). Often symptomatic, but clinically non-specific. Predominantly female [2].

The lesion can occur at any level of the spine. Frequently described at the thoracolumbar hinge [2]. Accompanied by abnormalities in vertebral development, scoliosis (60-70% of cases) and skin manifestations found in dysraphism: tufts of hair, dimples, haemangiomas, nevi or lipomas [3]. MRI and CT have a major role to play in the diagnosis and extension of this malformation. MRI is the examination of choice. It allows a better approach to intrarachid malformations and clarifies their relation with ductal anomalies [4]. It highlights the two medullary cords and assesses their size, the location of the medullary division, whether it is a single or multiple division; if there is an ossified spur, this can be seen in T2 in low signal between the two cords, the presence of an ectopy of the medullary cone (¾ of cases) and any associated malformations [3, 4].

The CT scan shows the spur, which may be fibrous, osteofibrous or bony, bone anomalies: widening of the medullary canal, spina bifida, vertebral segmentation anomalies and spinal cord anomalies: two hemi-moons in all cases [2]. Standard X-rays can show vertebral malformations: spina bifida, scoliosis, butterfly wing vertebrae, inter-pedicular widening, bone spurs and disc dysplasia [3]. Ultrasound can show spina bifida with eversion of the laminae and widening of the vertebral canal, the presence of two hemi-moons placed side by side, an echogenic spur separating the two hemi-moons or dilatation of the ependymal canal at an early stage before six months [5]. Antenatal diagnosis is possible using fetal ultrasound from 22 to 24 weeks of gestation [5].

CONCLUSION

Diastematomyelia is a rare pathology, corresponding to partial or total sagittal division of the spinal cord. It is a notochordodysraphy, often associated with other vertebral and cerebral malformations. Imaging plays a vital role in the diagnosis, which is suspected on standard X- rays and spinal cord ultrasound and confirmed by MRI. MRI can also be used to search for associated malformations, a diagnosis is possible and necessary in antenatal care with foetal ultrasound and MRI. early diagnosis and appropriate treatment are important, Incorrect diagnosis can lead to serious neurological sequelae.

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