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Case Report

Incidentally discovered type 1 split cord malformation in an adult patient

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ABSTRACT

Split spinal cord syndrome (SCM), an entity of spinal dysraphisms, occurs rarely in adults and is associated with tethered cord syndrome, which commonly presents with back pain. Besides clinical findings, neuroimaging by Magnetic resonance imaging or computed tomography is needed for diagnosis. We report a case of a previously healthy 51-year-old man who presented for right upper abdominal quadrant pain. A computed tomography scan of the abdomen and pelvis incidentally discovered the diagnosis of type 1 SCM. This case highlights that SCM can remain asymptomatic throughout life to be diagnosed at one point by neuroimaging. Whenever no clinical complications exist, no surgical intervention might be indicated.

Introduction

Spinal dysraphisms are congenital spinal disorders resulting from anomalous differentiation in the early fetal period and/or incomplete closure of dorsal midline structures [1]. Split spinal cord malformation (SCM), also known as diastematomyelia, comprises 3.8% of all spinal dysraphisms [1]. In SCM, all or part of the spinal cord, cauda equina, and filum terminale are divided into 2 parts by a spur [2]. Two forms for SCM exist: type 1 which consists of a double dural sac, a double spinal canal, and 2 hemicords separated symmetrically or asymmetrically by an extradural bony spur and type 2 which involves one dural sac, 1 spinal canal, and 2 equal symmetrical hemicords separated by a fibrous intradural spur [3]. Most SCMs are diagnosed in childhood and present with lumbago, lumbosciatica, or perineal dysesthesia often after minor trauma [4]. The clinical manifestations of SCMs in adults include back pain, leg pain, intermittent incontinence, and cutaneous stigmata [5]. In rare cases, adult SCM can be discovered incidentally on neuroimaging [6,7]. In this case report, we describe the case of a 51-year-old previously healthy man who was discovered to have a thoracic T11 and T12 diastematomyelia on computed tomography (CT) scan of the abdomen and pelvis after presenting for a nonspecific right upper abdominal quadrant pain.

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Case presentation

A previously healthy 51-year-old man presented to the emergency department for a 2-day history of right upper quadrant abdominal pain and nausea. The patient denied any fever, chills, vomiting, or diarrhea. Family and social history were not relevant. His vital signs were normal. On physical examination, the patient had an abdominal right upper quadrant tenderness on deep palpation. Murphy's sign was negative. An abdominal ultrasound was negative. A CT scan of the abdomen and pelvis with contrast was negative for any acute abdominal or pelvic pathology. However, a thoracic diastematomyelia at the level of T11 and T12 was observed (Fig. 1A-C). The patient was discharged on pain medications. A magnetic resonance imaging (MRI) could not be performed. He was not managed for diastematomyelia because it was asymptomatic. A follow-up after 3 months of initial presentation revealed no symptoms. He reported that the abdominal pain did not recur.

Discussion

SCM can cause variety of symptoms with back pain being the most common [5]. SCM is associated with tethered cord syndrome where it accounts for 10%-38% of adult tethered cord diagnoses [8]. Very rarely, adult SCM can remain clinically silent. For instance, the retrospective analysis by Borkar and Mahapatra [6] found incidentally by MRI 7 asymptomatic adult SCM. Similarly, the 2 cases reported by Callari and Arigo [7], who presented for radiculopathy, were diagnosed with SCM by an MRI.

MRI is the diagnostic modality of choice to diagnose SCM and to rule out other associated anomalies [6]. CT scan can be complimentary to MRI. Huang et al [9] retrospectively reviewed the neurological examinations as well as MRI and CT of the spine of 82 symptomatic diastematomyelia cases to note that CT is helpful in revealing the type and structure of the bony spur, that is, whether the spur is bony, cartilaginous or fibrous in nature. In comparison with CT, MRI adequately delineates the presence and extent of the divided spinal cord. The authors concluded that MRI precedes CT in localizing and characterizing the lesions.

The most common site of SCM is the dorsolumbar and lumbar area, as reported by Mahapatra and others [10] which does not match our case. The management of asymptomatic adult diastematomyelia can be either observation or surgery, with good clinical outcome for both so far [10].

In summary, this case report highlights that diastematomyelia can remain asymptomatic in adults throughout life to be diagnosed at one point by neuroimaging. Whenever no clinical complications exist, no surgical intervention might be indicated.

Declaration of Competing Interest

None.

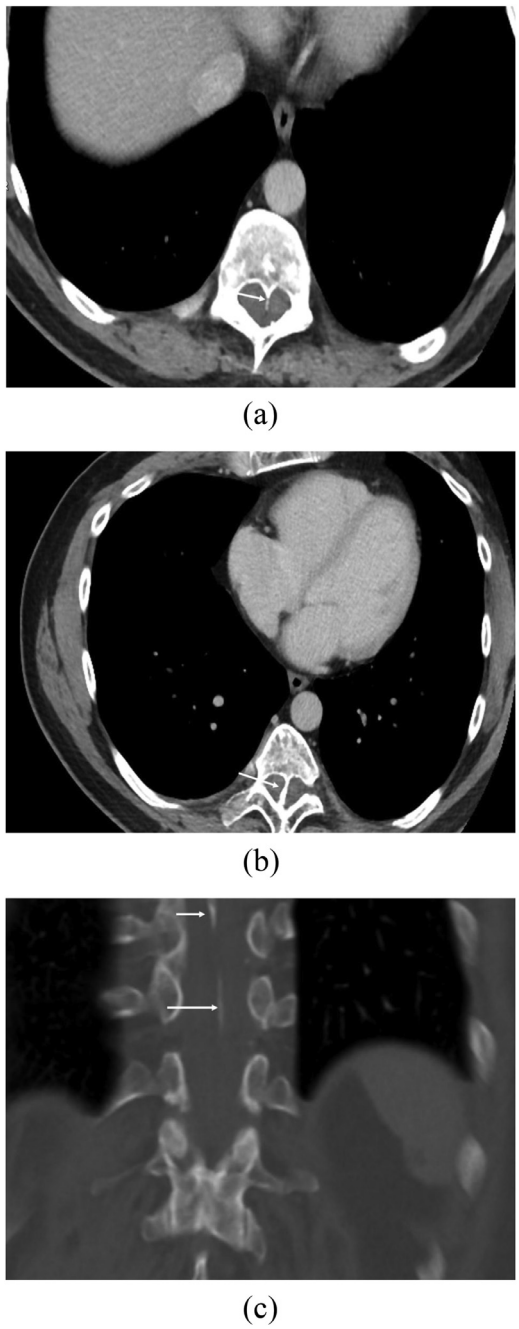

Fig 1 – (A) CT of the abdomen and pelvis showing a bony septum in the lower thoracic spine (Arrow), creating a cleft in the spinal cord. (B) Additional CT of the abdomen and pelvis showing a bony septum in the lower thoracic spine (Arrow), creating a cleft in the spinal cord. (C) Axial CT scan of the abdomen and pelvis showing a bony septum in the lower thoracic spine (Arrows).

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