Available online at www.sciencedirect.com
SCIENCE DIRECT®
Joint Bone Spine 72 (2005) 270–274
JOINT BONE SPINE
www.elsevier.com/locate/bonsoi

Case report

Cervical spondylotic myelopathy in athetoid cerebral palsy patients: about five cases

Aurélie Duruflé [a], Sabine Pétrilli [a], Jean-Luc Le Guiet [b], Gilles Brassier [c], Benoit Nicolas [d], Hélène Le Tallec [a], Philippe Gallien [a,*]

[a] *Department of Physical Therapy and Rehabilitation, University Hospital of Rennes, CHRU Pontchaillou, 2, rue Henri Le Guilloux, 35033 Rennes cedex, France*
[b] *Rehabilitation center of Kerpape, 56275 Ploemeur cedex, France*
[c] *Department of Neurosurgery, University Hospital of Rennes, 2, rue Henri Le Guilloux, 35033 Rennes cedex, France*
[d] *Rehabilitation center, Notre Dame de Lourde, 54, rue St Hélier, 35000 Rennes, France*

Received 14 October 2003; accepted 20 May 2004

Available online 23 July 2004

Abstract

We herein report five cases of cerebral palsy athetosic patients with spondyloid cervical myelopathy. Four of them underwent decompressive surgery. The level of cervicarthrosis differs from a control population with a more frequent osteoarthritis on the lower cervical spine. The diagnosis of spondylotic cervical myelopathy is frequently overlooked because of the insidious progression of neurologic disorders and of the pre-existent neurological handicap. Depressive syndrome is often evoked in such a situation, and thus responsible for a delay of diagnosis. The presence of an hypersignal in T2 MRI sequences is still controversial. For some authors it is an indication for surgery, which is the treatment with the best functional results.

Conclusion. **–** Cervical spondylotic myelopathy must be evoked in patients with athetoid cerebral palsy who complain about a decrease of their functional ability.

Keywords: Cerebral palsy; Arthrosis; Spondylotic cervical myelopathy

1. Introduction

Spondylotic cervical myelopathy occurs more frequently during the sixth decade of life. The pathophysiology of spondylotic cervical myelopathy is complex and multifactorial. It involves on the one hand a congenital factor, i.e., the existence of a narrow cervical spinal canal, and on the other hand acquired factors, mainly compressive degenerative factors, arterial or venous vascular disorders, also compressive, and dynamic factors like repeated micro-traumas. [1–4].

The major stresses inflicted on the cervical spine in athetoid cerebral palsy are responsible for degenerative phenomena which occur earlier than in a control population. [5,6]. Although the exact relationship that exists between spondylotic cervical myelopathy and athetosic motricity has not been clearly established [5–11]. Diagnosis may be difficult and the consequences of such a complication can lead to an increase of the handicap. This paper reports five cases of athetoid cerebral palsy patients with cervical spondylotic myelopathy. Semiologic specificities and their impact on the management of those patients are discussed.

2. Clinical cases

2.1. Case no. 1

Mr. M aged 43, consulted in July 1990 for cervical pain. The patient's background was characterised by choreoathetoid cerebral palsy with a Little syndrome. He was autonomous in performing all daily life activities and could walk without any technical aid. At consultation in July 1990, neurological examination was made difficult by continual choreoathetoid motions and major dysarthry. Essentially, right leg marked spasticity was noted without motor deficit.

* Corresponding author. Tel.: +33-2-99-28-42-18; fax: +33-2-99-28-41-83.
E-mail address: Philippe.Gallien@CHU-Rennes.fr (P. Gallien).

doi:10.1016/j.jbspin.2004.05.002

Functional degradation due to depressive syndrome was evoked. One month later, the patient was admitted to the neurology department because of the occurrence of walking disorders and paresthesis in both hands. Neurological examination revealed four-limb pyramidal syndrome, motor and sensitive quadriparesis at C8 lesional level. Standard X-ray of the cervical spine revealed cervical osteoarthritis between C4 and C7 and static disorders. Spinal cord MRI was difficult to interpret and revealed no abnormality of the medullar signal. Cervical spine CT-scan revealed a stepped cervical osteoarthritis associated with narrow cervical canal. The diagnosis evoked was that of ischemic cervical spondylotic myelopathy on the neurological examination and clinical outcome. No operative indication was given, because of the risk of post-surgical spinal instability as a consequence of athetoid movements.

Rehabilitative physiotherapy was initiated. Progression was not favourable. Mr. M is still in C8 quadriparetic condition and placement in a specialised home was necessary.

2.2. Case no. 2

Mr. C aged 56 was hospitalised in August 1996 in the neurology department for right arm impairment progressing for approximately 2 weeks. His background was characterised by childhood cerebral motor impairment. Previous history included: lumbar arthrodesis at L1 L2 L3 in 1988 for restricted lumbar canal, two radicular decompressions on uncarthrosis without laminectomy at C5 and C4 in 1993 and 1994, respectively. The patient suffered from a quadriparesis without sensory loss and used an electric wheelchair for the long distance. He could walk on small distances and for his transfer. He was autonomous in performing daily life activities. Two months before hospitalisation, right latero-cervical pains occurred, which irradiated to the shoulder.

Neurological examination at admission revealed a sensory and motor impairment in the C5 and C6 territories of the right arm. In the interview, the patient complained about the occurrence a few weeks earlier of urinary disorders. Cervical myelo-scan was performed, which revealed cervical arthritic lesions and reduced spinal canal in the mid cervical region, a kyphotic tendency of the cervical spine, predominantly in the C4–C5 region, with no real medullar compression (Fig. 1). Surgical treatment was prescribed and the patient underwent cervical laminectomy of C3-T1 in 1996, combined with C2-T1 posterior arthrodesis with no post-operative immobilisation. A solid bony fusion was obtained, progression was favourable with full recovery of the bladder and sphincter disorders, near total recovery of right arm motricity and restoration of previous autonomy.

2.3. Case no. 3

Mr. C aged 35, was hospitalised in March 1999 for gait disorders. His background was characterised by left paralysis and choreo-atherotic cerebral motor disablement. He was autonomous for daily life activities, could walk 500 m without technical aids and used a manual wheelchair for longer distances. The illness occurred in 1998 when the patient described a loss of autonomy and frequent falls. Reactional depressive syndrome was evoked on several occasions. In March 1999, the patient was hospitalised in consideration of the falls, the latest one resulting in head injury and right paralysis (hemiparesis), which was unknown before and later occurrence of bladder and sphincter disorders. Baseline neurological examination revealed earlier left paralysis, motor impairment of the right body, predominantly distal with no sensory impairment, four-limb pyramidal syndrome. Brain CT-scan, performed to investigate a subdural haematoma, was normal. Cervical spine CT-scan elicited C3 and C4 predominant cervical osteoarthritis with reduced spinal canal and posterior longitudinal ligament hyperostosis. MRI revealed a medullar hypersignal in T2 MRI sequences at C4 level and narrow cervical canal, predominant at the C3–C4 and C5–C6 junction (Fig. 2). The diagnosis evoked was that of ischemic or vascular cervical myelopathy secondary to

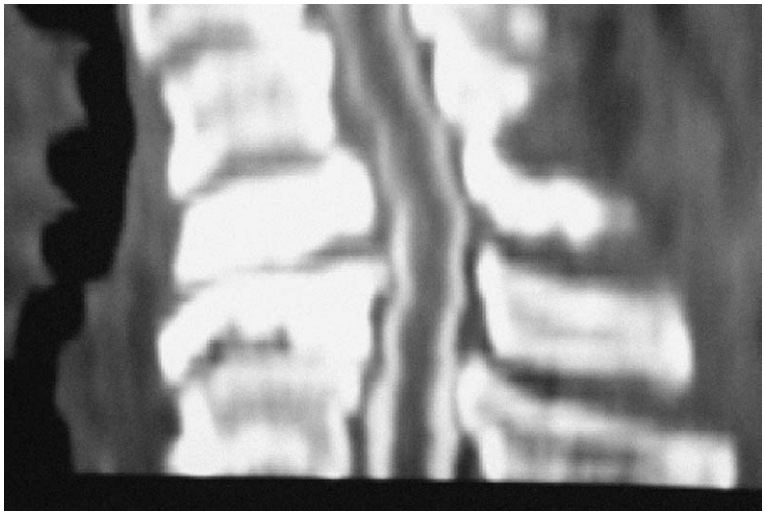

Fig. 1. Cervical myeloscan: cervical osteoarthritic lesions with reduced spinal canal in patient no. 2.