

(RESEARCH ARTICLE)



Contribution of Myélo-Computed Tomography in the assessment of slow spinal cord compressions: Retrospective study of 33 cases in Niamey

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Abstract

Purpose: To describe the contribution of Myélo-computed tomography during the assessment of slow spinal cord compressions and to determine the etiological profile.

Patients and methods: This is a retrospective, cross-sectional, analytical and descriptive study of 33 cases collected in the radiology and imaging department of the National Hospital of Niamey (HNN) over a period of 14 months (from 31/12/2015 to 10/02/2017). Were included in the study all patients with slow spinal cord compression occurred in a non-traumatic setting, admitted to the service for a Myélo-computed tomography.

Results: The mean age of the patients was 47.03 years with extremes ranging from 27 to 75 years. The 30-35 age group was the most affected with 23.2% of cases. In our study, Myélo-computed tomography detected medullary compression in 33 patients (33%). The extra-dural compartment was the most common site of slow medullary compression with 97% and intra dural extra marrow with 3%. The dorsal spine was the most affected stage by slow spinal compression with 52% followed by the cervical (27%) and lumbar (22%) stage. Infectious pathology was the most common cause of spinal cord compression with a frequency of 63.6%, followed by degenerative (27.3%) and tumoral (9.1%) pathology.

Conclusion: Myélo-computed tomography plays an important role in topographic and etiologic diagnosis of slow spinal cord compression in the absence of MRI.

Keywords: Myélo-computed tomography; Slow spinal cord compressions; Degenerative; Infectious; Tumoral; Niamey

1. Introduction

Slow spinal cord compressions are defined as non-traumatic pathological processes which, through mechanical and/or vascular phenomena, lead to a progressive loss of spinal cord functions [1-4]. Slow spinal cord compression syndrome constitutes a diagnostic and therapeutic problem requiring perforator imaging to identify its mechanism and/or etiology. CT is better at highlighting bony lesions of the spine while MRI, which constitutes the reference imaging, allows soft tissue lesions to be better visualized [5,6].

2. Material and methods

Our retrospective study with a cross-sectional descriptive and analytical aim was conducted within the radiology and imaging department of the Niamey National Hospital (HNN) over a period of 14 months (from 12/31/2015 to 02/10).

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/2017). All patients, presenting signs of slow spinal cord compression occurring in a non-traumatic context, admitted to the department for myeloCT, were included in the study. The examinations were carried out using a CT device (HITACHI SUPRIA® 64) after injection of the iodinated contrast product into the subarachnoid space. A survey sheet was used to collect the data.

3. Results

We identified 33 patients during the study period. The male gender predominated with 58% with a sex ratio of 1.38. The 30–35 years old age group was the most affected with 23.2% and an average age of 47.03 years (extremes of age: 27 to 75 years), (table 1).

Table 1 Distribution of patients according to age group

Age range	Frequency (n=33)	Percentage (%)
27 -30	2	6.1
30-35	8	23.2
35-45	3	9
45-50	2	6.1
50-55	6	18.2
55-60	4	13.1
60-65	5	15.1
65-70	2	6.1
70-75	1	3.1
Total	33	100

Neurological pathology represented the most frequent reason for myeloCT examination with 84.8%. The dorsal spine was the most studied level with 51.5%.

The extradural compartment was the most common site of slow spinal cord compression with 97%. The site of spinal cord compression was dorsal (52%), cervical (27%), and lumbar in 21% of cases (figure 1). We have a predominance of multi-level involvement at the level of different portions of the spine.

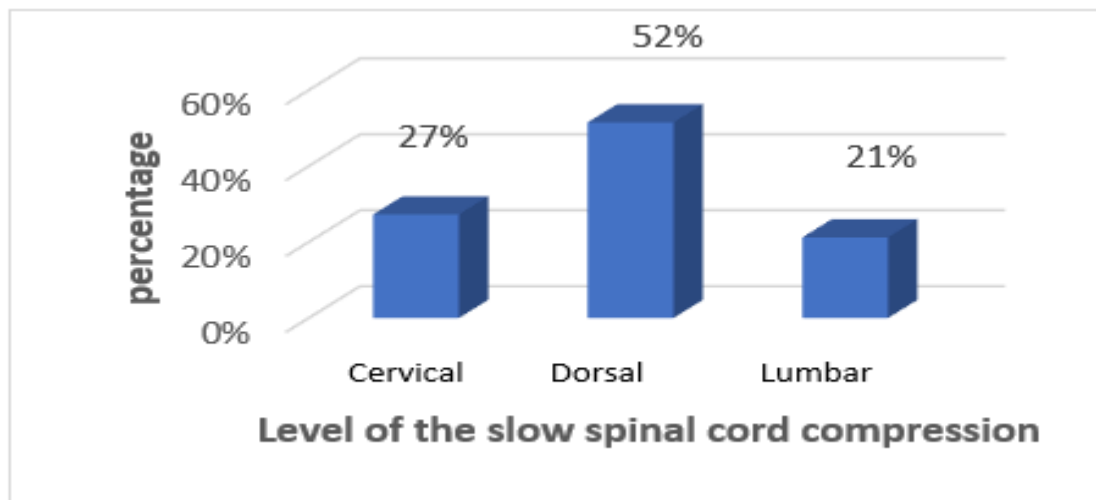


Figure 1 Distribution of patients according to the level of slow spinal cord compression

Infectious pathology (spondylodiscitis) was the most common cause of spinal cord compression with a frequency of 63.60% of cases, followed by degenerative pathology (27.30%) and tumor (9.10%), (figure 2,3).

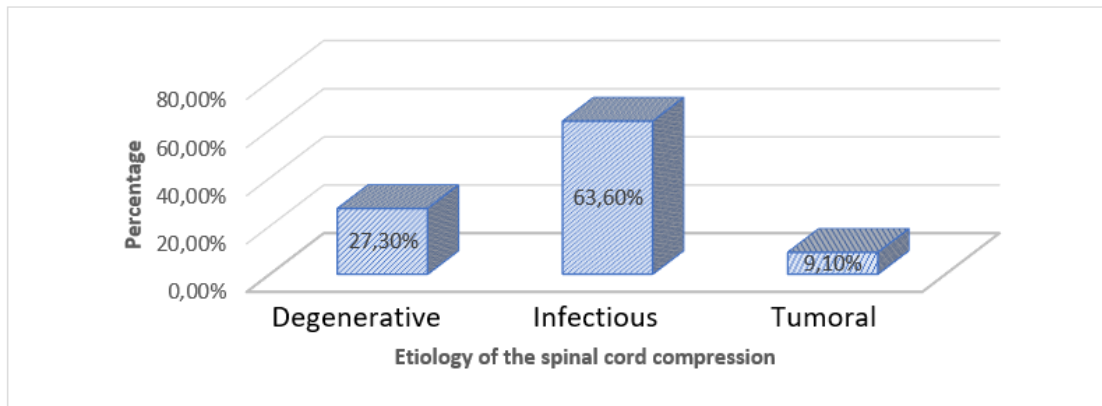


Figure 2 Distribution of patients according to the aetiology of spinal cord compression

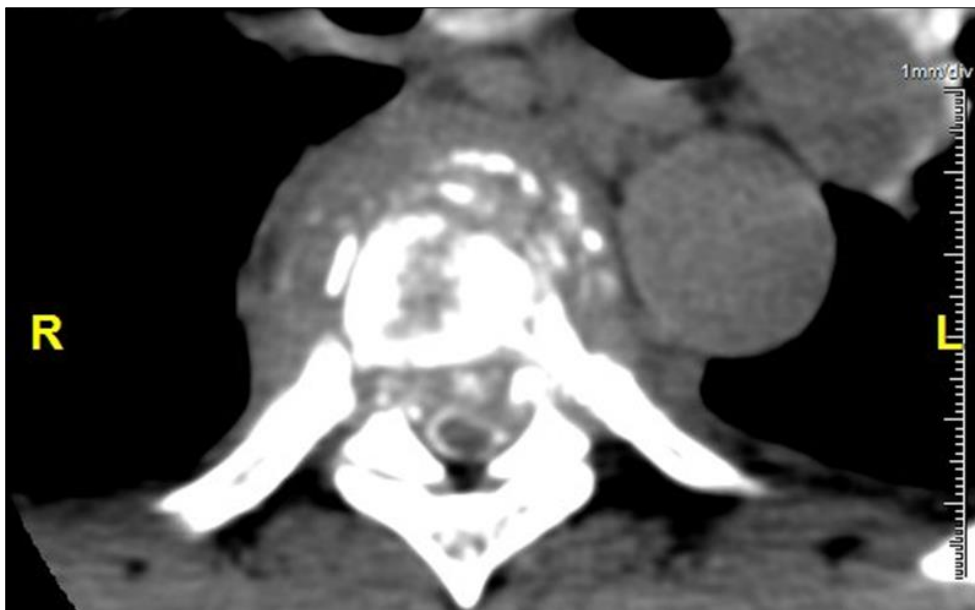


Figure 3 Axial myelo tomography dorsal section in parenchymal window. We note spondylodiscitis with a mass invading the vertebral canal and compressing the spinal cord

4. Discussion

In our study, as in most studies, we note a predominance in the occurrence of spinal cord compression in males [7-9]. Neurological pathology represented the most frequent reason for myeloCT examination with 84.8%. The majority of our patients presented spinal cord neurological signs. The dorsal spine was the level most affected by slow spinal cord compression with 51.5%. In our study, myeloCT detected spinal cord compression in 33 patients or 33%. On the other hand, Badji N et al [10] reported, in their study on the contribution of MRI in the management of slow spinal cord compressions, a normal spinal cord in 36 patients or 37.11% and compressed in 61 patients. or 63%. In our series, the extradural compartment was the most frequent site of slow medullary compression with 97% and subdural extra medullary with 3%. This is due to the predominance of extradural causes in our study. Our results agree with those in the literature according to which the extradural compartment is the most affected by slow spinal cord compression. The dorsal level was the site most affected by spinal cord compression with 52% of cases, followed by the cervical level (27%) and lumbar level (21%). This is explained by the fact that in our study, the extradural causes of spinal cord compression are dominated by infectious spondylodiscitis which has a predilection in the dorsal spine [11]. We have a

predominance of multi-level involvement at the level of different portions of the spine. Infectious pathology was the most common cause of spinal cord compression with a frequency of 63.6% of cases. Several studies, including those of Ouboukhlik, Ould Beddi and Scrimgeour, have shown, like ours, the primacy of Pott's disease with respectively 21%, 27.2% and 54% of their cases [12-14]. This has led some authors to think that there seems to be an African particularity: the predominance of tuberculous etiology in spinal cord compressions [14-16].

5. Conclusion

Slow spinal cord compression is a diagnostic and therapeutic emergency. Early treatment will contribute to an improvement in the patient's vital and functional prognosis.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that they have no conflict of interest.

Statement of informed consent

We received informed consent from all patients who participated in this study.

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