

THORACIC INTRASPINAL PARACOCCIDIOIDOMYCOSIS

CASE REPORT

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ABSTRACT - Intramedullary lesions caused by *Paracoccidioides brasiliensis* have been rarely described. Its diagnosis may be challenging and surgical approach is indicated for diagnostic and therapeutic purposes. We hereby report a case with MRI and surgical findings in a 45 year-old woman with intramedullary paracoccidioidomycosis, and make a review of other cases presented in the literature.

KEY WORDS: paracoccidioidomycosis, central nervous system, spinal cord.

Paracoccidioidomicose intramedular torácica: relato de caso

RESUMO - Lesões intramedulares causadas pelo *Paracoccidioides brasiliensis* são raras. O quadro clínico de lesão expansiva medular é inespecífico e uma intervenção cirúrgica com fins diagnósticos e terapêuticos constitui o único método de diagnóstico eficiente. Os autores relatam um caso em uma mulher de 45 anos com lesão medular ao nível torácico. Descrevem-se os achados clínicos, cirúrgicos e de ressonância magnética nesta situação incomum.

PALAVRAS-CHAVE: paracoccidioidomicose, sistema nervoso central, medula espinal.

Paracoccidioidomycosis (South American blastomycosis) (PC) is a systemic granulomatous mycosis caused by a dimorphic fungi, *Paracoccidioides brasiliensis* (Splendore,1912)³. The most common initial lesion occurs in the buccopharyngeal mucosa, from where hematogenous dissemination may lead to multisystemic lesions by the fungi, including lungs, adrenal glands, spleen, liver, bones, and gastrointestinal tract.

Central nervous system (CNS) involvement is relatively uncommon, and most granulomatous lesions are intracranial. Intraspinal lesions are even less frequently seen, but usually pose a dismal prognosis in functional recovery (Table 1). We describe a case of thoracic intramedullary paracoccidioidomycotic granuloma.

CASE REPORT

STN, a 45 year-old woman, was admitted in our Service on July 14, 1994, with complaints of progressive lower limbs weakness and paresthesias. Her symptoms started 30 days before her admission. At that time, she underwent a lumbar myelography with normal findings. Five months before, she was submitted to laminectomy and L4-L5 discectomy in another Service. She told us about a lip ulceration three years ago. A local biopsy of the ulceration and pathological examination disclosed the presence of fungi. She was medicated (drug unknown) for some weeks with complete resolution of the oral lesion. She was otherwise a healthy person, without reference to any other systemic diseases, including the respiratory tract. Her general physical examination was normal.

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Table 1. Intraspinal paracoccidioidomycosis: summary of reported cases.

Report	Age, sex	Clinical picture Neuroradiology	Spinal level	Other sites	Treatment Recovery
Braga & Okamura ¹	45, M	lower limb monoparesis, ankle clonus, Babinski sign, bladder dysfunction Myelography	T11-T12	lungs	Surgery (TR) sulfadiazine Partial, good
Farage et al. ⁴	42, M	Brown-Séquard syndrome, paraparesis, left upper limb palpy Myelography	C7	lungs	Surgery (TR), amphotericin B + sulfamethoxazol + trimetoprim Unchanged
Pedro et al. ⁹	34, M	asymmetric distal paraplegia, bilateral Bakinski sign, painful hypoesthesia (T6), bladder dysfunction Myelography	T5-T6	larynx, lungs	Surgery (ND), amphotericin B + sulfonamide Unchanged
Marchiori et al. ⁶	51, M	cervical pain Brown-Séquard syndrome Myelography	C4-C5	lungs	Surgery (TR), amphotericin B Death
Morato-Fernandez et al. ⁷	50, M	cervical pain, tetraparesis, hypoesthesia (T4), bilateral Babinski sign Myelography, Spinal CT scan	C4-T1	lips, tongue lungs, brain	Surgery (biopsy), ketoconazole, sulfadoxine Unchanged
Moura et al. ⁸	57, M	spastic paraparesis hypoesthesia (T10) bilateral Babinski sign Myelography (normal) Spinal MRI	T3-T11	lips, lungs	Fluconazole Good
Present report	45, F	Flaccid paraparesis, hypoesthesia (T11) bladder dysfunction Spinal MRI	T11	lips, lungs	Surgery (TR) sulfametoazol + trimetoprim Unchanged



Fig 1. Sagittal T1 study with Gd-DTPA shows a contrast-enhancing intraspinal lesion at T12 level.

Neurological examination showed flaccid areflexic paraplegia (MRCP 0, both lower limbs), no Babinski sign, absent vibratory, thermal and pain sensation up to level T11, and urinary incontinence. A lumbal spine CT-scan performed 10 days before her admission disclosed postlaminectomy changes at L4-L5 level. A head CT-scan was normal.

A MRI-scan of the spine disclosed the presence of an intraspinal nodular lesion, 13x10 mm, at T11 level, hypointense at T2 and isointense at T1. Marked contrast enhancement after intravenous gadolinium-DTPA (Gd-DTPA) infusion was observed (Fig 1). A pre-operative chest X-ray showed the presence of bilateral reticulated infiltrates of both lower lung fields. Sputum for acid-fast smears and fungi examination could not be obtained. Laboratory tests, including serum indirect immunofluorescence reaction for paracoccidioidomycosis, were normal or negative.

On July 15, she was operated on through a thoracic laminectomy. An intramedullary tumoral lesion could be easily identified and was completely resected. Her postoperative period was uneventful, and she was discharged seven days after without any remarkable change in her neurological status. She is taking sulfamethoxazole 800mg + trimetoprim 160mg qd since then.

Pathological examination demonstrated connective tissue with numerous multinucleated giant cells containing several fungi compatible with PC. Lymphoid cells and neutrophils could be also observed (Fig 2).

On June 1995, she told us by phone her neurological condition has not changed. She was completely paraplegic and need intermittent bladder catheterization.



Fig 2. A. (top) Multinucleated giant cell containing fungi (arrowheads) (Hematoxylin and eosin, 400x); B. (bottom) Argentic impregnation shows the typical morphology of Paracoccidioides brasiliensis (Grocott, 400x).

DISCUSSION

Magnetic resonance imaging has clearly supplanted myelography and CT/myelography as the method of choice for the evaluation of spinal tumors. It is noninvasive, has superior multiplanar capabilities for accurate localization, and unequaled contrast resolution⁵. Our patient was unfortunate, for her previous history of laminectomy for lumbar discectomy probably delayed an earlier appropriate neurological examination and diagnosis.

The initial diagnosis of this patient was the presence of an intraspinal tumor, most probably a glioma (astrocytoma, ependymoma, oligodendroglioma), which represent approximately 90% of the intramedullary tumor⁵. Hemangioblastomas are uncommon benign vascular tumors, with marked enhancement with Gd-DTPA. Meningiomas, 25% of all primary intraspinal tumors, displace the cord and widen the subarachnoid space due to its extramedullary situation, akin what happened with neurinomas. Gd-DTPA enhanced T1-weighted scans also show marked enhancement of the tumor. Metastatic intramedullary disease is rare (1-2%) and was unlikely in the present case as there was no evidence of systemic cancer. Laminectomy was indicated for two reasons: 1) diagnosis, and 2) treatment.

The prognosis of patients with spinal paracoccidioidomycosis is usually dismal^{4,6,7,9} with a few exceptions^{1,8}. All previous patients reported in the literature showed evidence of PC lesion out of the CNS, usually in the lungs. However, most extraneural lesions can be clinically silent at the time of their CNS debut. Therefore, most patients with spinal PC may undergo surgery without a strong clinical suspicion of an intraspinal mycotic granuloma. Moreover, neuroimaging methods, including MRI, do not provide pathognomonic findings, what makes surgical resection probably necessary in all cases.

Though there are more sensitive and specific immunological tests than indirect immunofluorescence (double immunodiffusion, counterimmunoelectrophoresis)², even with a positive serological test on hands, we would hardly avoid a surgical approach in our case lest the lesion might not necessarily be a fungal granuloma. In fact, CSF immunological tests should be interpreted with caution. False-positive reactions may occur with disruption of the blood-brain barrier due to "contamination" with blood components, whereas false-negative reactions are not uncommon⁸.

It is extremely important to observe that patients with long-lasting asymptomatic PC may suddenly develop a CNS complication, even after having received specific treatment, e.g. amphotericin⁴. The long-term use of sulfonamides (sulfadiazine, sulfamethoxazole + trimetoprim) is probably desirable for its good tolerance, good penetration in the CNS, in an effort to avoid further dissemination of the fungus^{2,10}. Unfortunately, relapses due to development of resistance to sulfonamides are not uncommon. For how much time should it be used depends on the clinical evolution and form of the disease. A minimal period of 6-8 weeks is desirable, and patients are kept under treatment for up two years¹⁰. Imidazole derivatives (e.g. ketoconazole, itraconazole) have usually a good initial response and relapses are less common¹⁰. The experience with fluconazole, an oral triazole with good penetrance in the CNS, was reported in one case, with good response⁸. Further trials with this drug may be warranted.

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