

## COMPLETE RESOLUTION OF PARAPARESIA BY MICROLYSIS SURGERY – A RARE CASE OF IDIOPATHIC SPONTANEOUS ADHESIVE ARACHNOIDITIS

---

*Samantha Cristina da Silva Chaves*

*Wagner Prudente Neto*

*Luiz Gustavo Vieira Gonçalves*

*Pedro Igor de Figueiredo Turíbio*

*Luiza Maria Milanez Ronchi*

*Samuel Filippe Motta Martins Dias*

*Palloma Assis Alves Januário*

*Giovanna Mafra e Silva*

*Vicente de Brito Foggia*

*Lina Miyuri Suizu*

*Thaiza Caline Martini*

*Raí Medeiros Veiga*

*João Victor Lima de Araújo*

*Rodrigo Lajovic Safatle*

All content in this magazine is licensed under a Creative Commons Attribution License. Attribution-Non-Commercial-Non-Derivatives 4.0 International (CC BY-NC-ND 4.0).



**Abstract: Objective:** To report the case of a patient with spontaneous adhesive arachnoid in T3, associated neurological deficits, its treatment and evolution. **Method:** Information was obtained through interviews with the patient and his daughter, photographic records of the diagnostic methods to which the patient was submitted, and a review of the literature. **Final considerations:** The reported case brings up a doubtful surgical treatment of a complex situation in which conservative treatment is the most used and presents an unfavorable outcome. In this case, we achieved a total reversal of the picture. The pathology affects around 750 people a year in the world and, when treated properly, it is able to obtain satisfactory results of the signs and symptoms and a high quality of life back to the patient. **Keywords:** arachnoid band; Spontaneous adhesive arachnoid; Neurological deficits; Treatment.

## INTRODUCTION

Spontaneous adhesive arachnoid or arachnoid band is a progressive inflammatory process of the meninges, compromising several or all segments of the arachnoid, which can be asymptomatic or symptomatic and mask other treatable lumbar injuries (Kratzig, 2018). The etiology is not unique and changes such as cysts, meningitis, neoplasms, subarachnoid hemorrhage, invasive procedures, anesthesia, autoimmune processes and infections such as tuberculosis may be associated (Garzón, 2013). Low back pain radiating to the lower limbs, urinary incontinence and dysesthesias in the fingers are common in this case.

## CLINICAL CASE REPORT

Male patient, 58 years old, white, 81 kg, nephropathy, hypertensive, pre-diabetic and hypercholesterolemic, with all respective pathologies under treatment, was admitted to a private hospital in Catalão - GO, on

12/09/2021, with paraplegia and hypoesthesia in lower limbs, in addition to complaints of abdominal discomfort in the form of pressure. He reports great physical exertion the day before and back pain for a long time, without treatment. He also reports feeling weakness and pain in his left leg two days before his intense exertion.

On the same day of hospitalization, MRI of the cervical and lumbosacral columns was performed (figures 1, 2 and 3), measuring: central disc protrusion at the C6-C7 level causing compression on the dural sac, without significant neural contacts; Diffuse disc dehydration; Incipient cervical spondylosis; Lumbar spondyloarthritis; Small symmetric disc bulges at L2-L3-L4-L5, partially occupying the inferior recess of the respective neural foramina, without root contacts; Centrolateral disc extrusion to the right of L5-S1, causing compression over the dural sac. Arriving at the diagnosis of spontaneous adhesive arachnoid in T3, on 12/10/2021.

Exploratory laminectomy surgery was performed on 12/12/2021, lasting approximately 5 hours. Within 48 hours after surgery, the patient was discharged from the ICU to the health service ward.

On the same day, the patient underwent an electroneuromyography examination, as he complained of paresis and tremors in the lower limbs. In this case, bilateral superficial motor and sural peroneal nerve neuropathy, demyelinating and moderate axonal, was observed.

In 24 hours, he was discharged home, starting physiotherapy the next day, every day. She progressed to the walker in 4 days, and in 40 days she walked without support. During the treatment she used Clonazepam for generalized anxiety due to her condition, in addition to Acetazolamide (8 / 8h); Omeprazole (24/24h); Dexamethasone (with weekly weaning); Dipyron (8/8h);

Amoxicillin + Potassium Clavulanate (12/12h); Tramadol (12/12h); Amitriptyline (24/24h); and Pregabalin (24/24h).

After the injury, he performs water aerobics weekly. No sequelae, only mild paresthesia in the sole of the left lower limb.



**Figure 1:** Cervical, thoracic and lumbosacral MRI, showing arachnoid band in T3



**Figure 2:** cervical and thoracic MRI.



**Figure 3:** cervical and thoracic MRI.

## DISCUSSION

There are no reports that the patient's family has presented similar cases, however, one of his sisters has a herniated disc and another sister was diagnosed with a rare case of spinal cancer in women, unfortunately not resisting.

Even though before the episode of paraplegia the patient had made a great physical effort, two days before this intense effort the patient already had pain and weakness in the left leg, reinforcing the spontaneity of the injury and which, perhaps, was aggravated by the effort.

Conservative treatments usually have an unfavorable outcome, which can lead to progression, such as encapsulation of nerve roots by scar tissue, impeding CSF flow and leading to chronic arachnoiditis (Jurga, et al., 2020).

## FINAL COMMENTS

The surgery performed is questionable for arachnoiditis (Atallah, et al., 2018), however, it reversed this case completely.

The patient had no risk factor for arachnoiditis, which classifies it as idiopathic and extremely rare (750 people/year worldwide) (Gutiérrez, et al., 2020).

We must consider the investigation of adhesive arachnoiditis as a differential diagnosis in progressive paraparesis.

Despite the conflict regarding the success of microlysis of arachnoid bands, some cases, such as this one, reveal a great benefit to the patient, as there is no successful conservative treatment already established in the literature.

## REFERENCES

1. GARZÓN LA, MESA AA. Aracnoiditis crónica. *Rev Repert Med Cir.* 2013;22(2):89-97.
2. KRÄTZIG T, et al. Aracnoidite Adesiva Espinhal Extensa Após Infecção Espinhal Extradural – A Dura Máter Espinhal Não É Barreira à Inflamação. *World Neurosurg.* 2018;116: e1194-e1203.
3. JURGA S, et al. Spinal adhesive arachnoiditis: three case reports and review of literature. *Acta Neurol Belg.* 2021; 121:47-53.
4. ATALLAH E, et al. Rare case of diffuse spinal arachnoiditis following a complicated vertebral artery dissection. *J Clin Neurosci.* 2018; 52:132-134.
5. GUTIÉRREZ ML, et al. Compressive myelopathy secondary to posthemorrhagic arachnoiditis: Case report and literature review. *Clin Neurol Neurosurg.* 2020; 196:105964.