EDORIUM Journals

Int J Case Rep Images 2022;13(2):98–101.
www.ijcasereportsandimages.com

CASE REPORT PEER REVIEWED | OPEN ACCESS

From the diagnosis of a probable post-polio syndrome to spina bifida: A case report of a 49-year-old man

Marco Orsini, Antônio Marcos da Silva Catharino, Valéria Camargo Silveira, Carlos Henrique Melo Reis, Marcos RG de Freitas, Wladimir Bocca Vieira de Rezende Pinto, Acary Souza Bulle Oliveira

ABSTRACT

Introduction: Post-polio syndrome is defined as a specific clinical condition that affects individuals previously affected by acute anterior poliomyelitis and, undoubtedly, is an exclusion diagnosis. Among the range of differential diagnoses, spina bifida may be one of them. Spina bifida is a condition that affects the spine and is usually apparent at birth. It is a type of neural tube defect (NTD) and can happen anywhere along the spine if the neural tube does not close all the way. When the neural tube doesn't close all the way, the backbone that protects the spinal cord doesn't form and close as it should. This often results in damage to the spinal cord and peripheral nerves.

Case Report: We report the case of a patient, male, 49 years old, with an alleged diagnosis of post-poliomyelitis syndrome (PPS) for benefit renewal due to permanent and disabling motor disability. After a thorough clinical history and neurological evaluation, in addition to the characteristic findings of spina bifida: bilateral pes cavus, fecal and urinary incontinence, surgical incision in the lumbar region, genu varus, amyotrophy\paresis in lower limbs and abolition of bilateral Achilles reflexes, spina bifida diagnoses was considered.

Conclusion: This article presents some "clinical pearls" in the differential diagnoses of spinal cord diseases. The possibility of PPS was excluded and the application for the benefit for spina bifida was redone. In addition to the post-history diagnoses determined by the diagnosis of diagnostic syndrome (that were not scored by our patient), the sum of the clinical history, the neurological examination and anchored spine in the image by revisions, were the foundation for the diagnosis of the bifida spina.

Keywords: Differential diagnosis, Post-polio syndrome, Rare diseases, Spina bifida, Spinal cord

How to cite this article

Orsini M, da Silva Catharino AM, Silveira VC, Reis CHM, de Freitas MRG, de Rezende Pinto WBV, Oliveira ASB. From the diagnosis of a probable post-polio syndrome to spina bifida: A case report of a 49-year-old man. Int J Case Rep Images 2022;13(2):98–101.

Article ID: 101335Z01MO2022

****

doi: 10.5348/101335Z01MO2022CR

Marco Orsini[1], Antônio Marcos da Silva Catharino[2], Valéria Camargo Silveira[2], Carlos Henrique Melo Reis[2], Marcos RG de Freitas[3], Wladimir Bocca Vieira de Rezende Pinto[4], Acary Souza Bulle Oliveira[4]

Affiliations: [1]Master's Program in Neurology - University of Vassouras and School of Medicine - University Iguaçu - RJ, Brazil; [2]Iguaçu University - UNIG - Department of Neurology of Hospital Geral de Nova Iguaçu - RJ, Brazil; [3]Department of Neurology of Federal University of Rio de Janeiro - UFRJ, RJ, Brazil; [4]Department of Neurology and Neurosurgery - UNIFESP, Paulista School of Medicine, São Paulo, SP, Brazil.

Corresponding Author: Antônio Marcos da Silva Catharino, Rua Gavião Peixoto 70, Room 811, CEP 24.2230-100, Icaraí, Niterói-RJ, Brazil; Email: catharino.antonio@gmail.com

Received: 07 March 2022
Accepted: 27 July 2022
Published: 07 September 2022

INTRODUCTION

Both general neurologists and neurologists with a broad spectrum of subspecialty interests are often asked to evaluate patients with disorders of the spinal cord [1]. Over the past decade, there have been significant advances in our understanding of a wide spectrum of

immune-mediated, infectious, metabolic, hereditary, paraneoplastic, and compressive myelopathies. Advances have been made in the classification and management of spinal vascular malformations [1]. Even with all the technical and scientific advances, some doctors still make justifiable errors, especially in low-income countries, who seek them without imaging tests and incomplete medical history.

Typically, spina bifida presents with myelomeningocele is diagnosed before or right after birth, when medical care is available [2]. Children diagnosed with this condition should be followed by a specialized team of health care providers throughout their lives. Families should be educated on the different complications to watch for [2]. The diagnosis of acute anterior poliomyelitis was also common months or years after birth, especially in children without vaccination coverage or incomplete. One of the great functions of the physician is to provide a correct diagnosis, in order to establish the prognosis and clinical and rehabilitation treatment; in addition to requesting, for example, specific tests, such as molecular ones [3].

The aim of the present study is to differentiate, mainly through physical and neurological examination, the diagnosis between acute anterior poliomyelitis, post-spina bifida poliomyelitis syndrome [4] and myelomeningocele.

CASE REPORT

A 49-year-old man, retired due to disability at age 18, seeks a neurology service to update a medical report on post-poliomyelitis syndrome, offered to him about 10 years ago. When asked about birth, childhood, possible vaccines and birth history, little was remembered. He claimed that he always had delays in motor development, in addition to surgery performed on his back to remove a possible "tumor." He added that his history of financial precariousness hampered the search for a correct diagnosis; this one that was possibly acute anterior poliomyelitis, given that he had received an overlapping diagnosis of post-poliomyelitis syndrome. Physical examination showed dislocation of the hip, muscle contractures, scoliosis, pes cavus, genu varus, and marked amyotrophy of the lower limbs (Figures 1 and 2), in addition to changes in superficial sensitivity and scar from a surgical incision in the lumbar region (Figure 3). Neurological examination revealed difficulties in locomotion, associated with amyotrophy, bilaterally abolished Achilles reflex. Tactile and painful hypoesthesia, in addition to hypopalesthesia in non-symmetrically distributed dermatomes, was also marked. The patient complained of urinary and fecal incontinence. Magnetic resonance imaging of the lumbar spine showed an anchored pattern. On electroneuromyography mixed involvement of peripheral nerves and lesions in the cone and spinal cord neurons were shown. The patient fulfilled only one criterion established for the diagnosis of post-poliomyelitis syndrome, which is a new condition of fatigue and muscle weakness, also possible in other diseases. Therefore, although physical and permanent disability was identified, as well as the patient's rights to retirement, the diagnosis was changed to spina bifida (myelomeningocele).

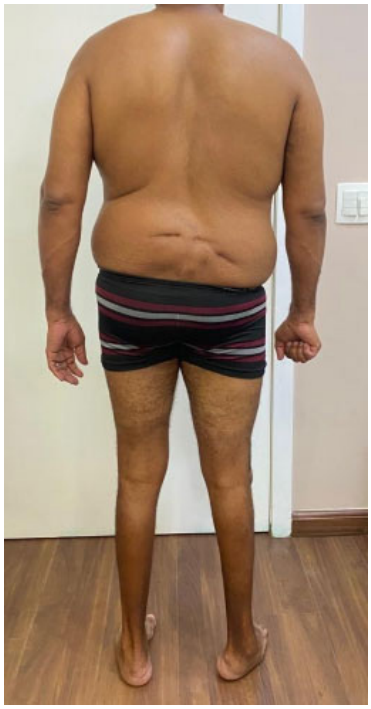

Figure 1: Dislocation of the hip, muscle contractures, and scoliosis.

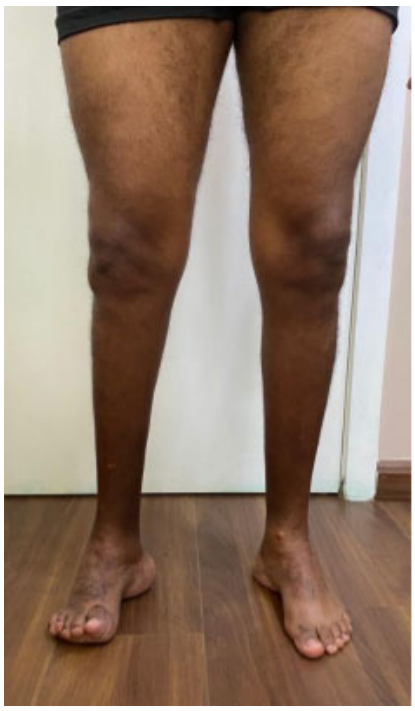

Figure 2: Pes cavus, genu varus, and amyotrophy of the lower limbs.

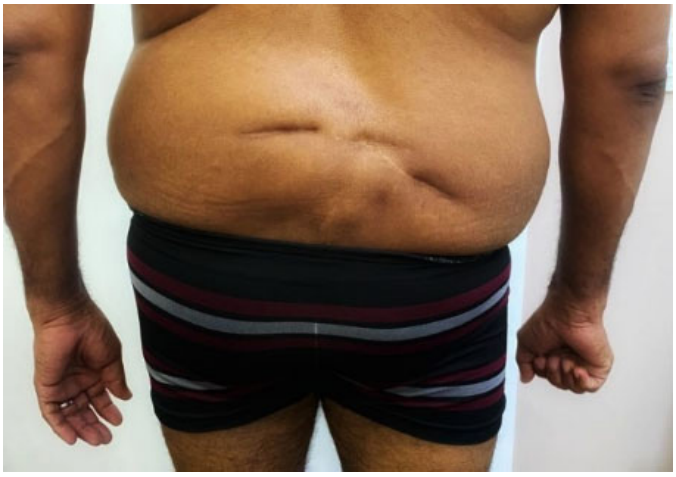

Figure 3: Scar from a surgical incision in the lumbar region.

DISCUSSION

The PPS is now a well-recognized entity encompassing the late manifestations that occur because of previous acute anterior poliomyelitis, which was not provided during the childhood of our case. Common signs and symptoms include fatigue, cold intolerance, joint deteriorations with pain, and prominent neurologic problems that include new weakness, muscle pain, atrophy, respiratory insufficiency, dysphagia, and sleep apnea [5]. Many of the above findings are also found in other genetic or acquired myelopathies and neuropathies [1].

Post-polio syndrome is a clinical diagnosis of exclusion. Your diagnosis requires careful exclusion of other known diseases neurological, orthopedic, or psychiatric disorders that could develop these same symptoms [6], including spina bifida findings. The first criterion of post-poliomyelitis syndrome, not fulfilled by our case, is the confirmation of paralytic poliomyelitis through the history of an acute, febrile illness that resulted in a motor loss without sensory deficit. In addition, our case had sensory impairment and bladder dysfunction. The occurrence of a similar disease in the family or contacts in the neighborhood was also not reported by him, due to the difficulties mentioned above. The only score was the presence of asymmetric muscle atrophy on physical examination. Electroneuromyography with a pattern of chronic denervation with reinnervation compatible with disease of the anterior horn of the spinal cord was not only identified by needle, as root involvement was also recorded. Medical records proving acute illness were also absent [7].

On the other hand, several signs and symptoms, in addition to physical examination findings, led us to make the diagnosis of spina bifida, especially the large "mark" of a surgical incision in the lumbar region and a slight memory of a history of a "tumor in the spine," possibly spina bifida. Walking and mobility problems, specific orthopedic complications (pes cavus, abnormal growth, scoliosis, pelvic girdle dysfunction, compensatory genu varus, bowel, and bladder problems (urinary and fecal incontinence) were present. The accumulation of liquor in the brain (hydrocephalus) findings cannot be described for us, by the financial difficulty of the present case. The patient had no intellectual impairment [8].

Clinicians must be aware about several acquired or inherited clinical conditions, which can mimic features present in post-polio syndrome, such as lower limb amyotrophy, weakness, fatigue, and hypotonia. Structural neurological diseases must be ruled out during diagnostic work-up of patients to allow a diagnosis of post-polio syndrome. Spina bifida should be considered as a potential etiology of slowly progressive incomplete myelopathy, even with predominant anterior horn cell signs and symptoms. Typical surgical scars involving the lumbar region may give clues to consider neural tube defects as a differential diagnosis.

CONCLUSION

Therefore, the findings of the family history, previous pathological, physical, and neurological exams, in addition to classic imaging findings from magnetic resonance imaging of the lumbar spine and mixed findings on electroneuromyography, seem to support our diagnosis. An extensive scar due to a surgical incision in the lumbar region, very classically seen in patients with spina bifida/myelomeningocele, gave clues to differential diagnosis.

REFERENCES

1. de Rezende Pinto WBV, de Souza PVS, de Albuquerque MVC, Dutra LA, Pedroso JL, Barsottini OGP. Clinical and epidemiological profiles of non-traumatic myelopathies. Arq Neuropsiquiatr 2016;74(2):161–5.
2. Brei T, Houtrow A. Spina bifida. J Pediatr Rehabil Med 2017;10(3–4):165–6.
3. Tiffreau V, Rapin A, Serafi R, et al. Post-polio syndrome and rehabilitation. Ann Phys Rehabil Med 2010;53(1):42–50.
4. Neves MAO, de Mello MP, dos Santos VV, et al. Post-poliomyelitis syndrome: Case report. Arq Neuropsiquiatr 2007;65(2B):528–31.
5. Shing SLH, Chipika RH, Finegan E, Murray D, Hardiman O, Bede P. Post-polio syndrome: More than just a lower motor neuron disease. Front Neurol 2019;10:773.
6. Lo JK, Robinson LR. Post-polio syndrome and the late effects of poliomyelitis: Part 2. Treatment, management, and prognosis. Muscle Nerve 2018;58(6):760–9.
7. Oluwasanmi OJ, Mckenzie DA, Adewole IO, et al. Postpolio syndrome: A review of lived experiences of patients. Int J Appl Basic Med Res 2019;9(3):129–34.
8. Copp AJ, Adzick NS, Chitty LS, Fletcher JM, Holmbeck GN, Shaw GM. Spina bifida. Nat Rev Dis Primers 2015;1:15007.

****

Author Contributions

Marco Orsini – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Antônio Marcos da Silva Catharino – Design of the work, Analysis of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Valéria Camargo Silveira – Conception of the work, Design of the work, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Carlos Henrique Melo Reis – Conception of the work, Design of the work, Interpretation of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Marcos RG de Freitas – Conception of the work, Design of the work, Interpretation of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Wladimir Bocca Vieira de Rezende Pinto – Conception of the work, Design of the work, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Acary Souza Bulle Oliveira – Conception of the work, Design of the work, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Guarantor of Submission

The corresponding author is the guarantor of submission.

Source of Support

None.

Consent Statement

Written informed consent was obtained from the patient for publication of this article.

Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.