ABSTRACT
Parsonage-Turner Syndrome is a rare disease that affects the musculature of the scapular girdle, leading to muscle atrophy and large motor deficit. The etiology is uncertain, but it is believed that infectious and autoimmune factors are involved. The diagnosis is made by exclusion, and the main differential diagnoses are cervical disc hernias, rotator cuff injuries and rheumatic diseases. During diagnostic investigations, we perform laboratory tests, radiographs and MRI on the shoulders and cervical spine, with emphasis on electroneuromyography to help in making a definitive diagnosis. This case report is presented because it shows a disease that is rarely associated with HIV seropositivity and the importance of early diagnosis for better treatment of these patients.

Keywords – Brachial plexus neuritis; HIV; Humans

INTRODUCTION
Amyotrophic neuralgia of the scapular belt, also known as Parsonage-Turner syndrome or brachial neuritis, was first described by Dreschefeld in 1887, who reported on a rare form of muscle atrophy in two sisters. Several authors described this disease in subsequent years, but it was Parsonage and Turner, in 1948, who detailed the clinical aspects of the disease, in a cohort of 136 patients\(^1\)-\(^3\).

The incidence of this syndrome is two to three individuals per 100,000 inhabitants, and it occurs mainly between the third and seventh decades of life. Males are affected more, in proportions of 2:1 to 11.5:1 in relation to females\(^3\). The etiology remains unknown, but it is believed that infectious and autoimmune factors are involved, because 25% to 55% of the patients who show the syndrome present antecedents of infection and 15% show recent antecedents of immunization\(^3\). Among the infectious agents, there are reports secondary to parvovirus B19, Epstein-Barr virus, herpes virus, cytomegalovirus and HIV\(^4\). This case report describes a patient with Parsonage-Turner syndrome at the stage of HIV seroconversion. This is an extremely rare disease, with only five cases described in the worldwide literature.

CASE REPORT
The patient was a black man from Vila Velha, ES, who was admitted to the Orthopedics and Traumatology Service with a complaint of intense pain resembling burning, in the posterior cervical region. It had started 15 days earlier, with irradiation to the arms, and was associated with paresthesia and major functional limitation of the shoulders, especially external rotation. No noteworthy abnormalities were observed on investigation of different organs and systems, or in the patient’s personal antecedents. The patient had been admitted to hospital one week earlier, remaining there for five days for analgesia and diagnostic investigation.

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On physical examination, hypotrophy of the musculature of the scapular belt was observed, which was more pronounced on the left side. The range of motion of the right shoulder was 110°, 0° and 20° and for the left shoulder it was 10°, 10° and 40° for elevation and external and internal rotation, respectively (Figures 1, 2 and 3). There was paresthesia in the dermatome corresponding to C5 and C6. Muscle strength was grade 2 in right shoulder movements and grade 3 in the left shoulder. The bicipital, styloid and tricipital tendon reflexes were normal. The Adson test was normal, Lermith was negative, Hoffman was negative, Neer was negative and Jobe was negative.

Among the complementary examinations performed during the diagnostic investigation, it was observed that radiographs of the shoulders and cervical spine did not show any abnormalities, magnetic resonance imaging (MRI) of the cervical spine showed the presence of C2-C3 and C3-C4 discopathy without foraminal compression, MRI of the brachial plexus showed the presence of edema and infiltrate at the level of the brachial plexus, and electroneuromyography (ENMG) demonstrated acute bilateral proximal multiple neuropathy that was suggestive of bilateral amyotrophic neuralgia (Figures 4 and 5).

The laboratory test results were as follows: hemogram with hemoglobin of 13.2 g/dl, hematocrit 40.5%, anisocytosis (+), leukocytes 3,000/mm³ (rods 1%, segmented cells 60%, lymphocytes 30%, eosinophils 7%
and monocytes 2%) and platelets 192,000/mm$^3$, VHS 65 mm, PCR less than 6.0 mg/dl, sodium 138 mEq/l, potassium 4.5 mEq/l, total calcium 8.0 mg/dl, AST 78.0 U/l (VR: 3 to 37 U/l), ALT 44.0 U/l (VR: 3 to 65 U/l), serum albumin 3.9 g/dl (VR: 3.5 to 5.5 g/dl). Parasitological feces test: *Endolimax nana* (++) and anti-HIV reactive with subsequent second sample reactive. The FAN, rheumatoid factor, anti-HBc, anti-HCV and VDRL tests were unreactive.

With a diagnosis of Parsonage-Turner syndrome secondary to an acute viral process due to HIV, drug treatment was started, supervised by an infectologist, along with analgesic treatment and intensive rehabilitation of the arms. After one year, it was seen that there had been progressive improvement of the symptoms, with complete return of motor strength and the range of motion of the scapular belt. Electroneuromyography on the arms was requested again one year later, and this showed sequelae of bilateral proximal axonal multiple neuropathy, with absence of signs of active denervation (Figures 6 and 7).

**DISCUSSION**

Parsonage-Turner syndrome is a rare pathological process that mainly affects the scapular belt. The condition evolves over two distinct periods, starting with intense pain in the shoulder (generally the right side; 20% bilaterally) and extending to the right arm; a few days or weeks later, the pain attenuates and flaccid paralysis appears. The clinical presentation and loss of feeling depend on the nerve affected; the phrenic nerve may be affected in 5% of the cases, leading to unfavorable evolution. The evolution of the motor alterations is partially regressive and, over a one-year period, partial to total recovery is achieved by around on third of the patients, while 90% of the patients recover within three years. After two years, the risk of significant residual incapacity is around 20% and recurrence is 5%-7%.

At the first evaluation on this patient, we observed that in addition to the intense pain in the neck and shoulder regions that led the patient to previous hospital admission at another service, for analgesia, the patient presented hypotrophy and flaccid paralysis of the musculature of the scapular belt. Electromyography of the scapular belt, and these findings led us to initially think of leprosy, inflammatory myopathy or acute viral infection. We firstly ruled out leprosy and
inflammatory myopathy because of a negative BAAR investigation and normal muscle enzyme assays. We ruled out the hypothesis of radiculopathy secondary to neck compression because of the absence of intensification of the pain with neck movement, presence of normal reflexes (with negative Brudizinski and Lermith tests) and absence of abnormalities on complementary radiographs and MRI of the cervical spine. We also ruled out rotator cuff injuries, because the patient did not present any abnormalities in the special Neer and Jobe tests, along with imaging examinations on the shoulders that did not show abnormalities.

We thus came to have the main diagnostic hypothesis of Parsonage-Turner syndrome. Routine laboratory tests, serological tests to detect viral diseases and ENMG of the upper limbs were requested. On the blood tests, anti-HIV was seen to be reactive, and ENMG showed amyotrophic neuralgia. MRI was also used to rule out extrinsic compression of the brachial plexus and inflammatory signs at its roots.

We started the treatment with a string analgesic regimen for 20 days, with progressive improvement, and intensive physiotherapy to gain movement and strengthen the muscles of the scapular belt, along with follow-up by the infectologist.

After one year of follow-up, there were no recurrences of pain crises. There was a notable improvement in muscle strength and range of motion, currently with 120, 90 and 40 degrees of elevation external rotation and internal rotation, respectively, in both shoulders. ENMG identified an improvement in electroneuromyographic response, without signs of acute denervation.

In conclusion, Parsonage-Turner syndrome is a rare disease that usually is evaluated by emergency orthopedists and may be erroneously diagnosed as cervical hernia or rotator cuff injury. These patients, who often do not have a diagnosis, evolve with major hypotrophy of the musculature of the scapular belt, and returning to normal shoulder function becomes impossible because of the absence of adequate early rehabilitation. The diagnosis of Parsonage-Turner syndrome should be borne in mind in cases of sudden intense pain in the neck and shoulder regions with the presence of flaccid paralysis.

REFERENCES