CASO CLÍNICO/CASE REPORT

The Asymmetrical Face of a Potential Systemic Disease: A Pattern to Recognize

A Face Assimétrica de uma Potencial Doença Sistémica: Um Padrão a Reconhecer

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Abstract

Parry-Romberg syndrome (PRS) is a rare disorder characterized by a progressive atrophy of the skin, subcutaneous tissue, muscle, and bone of the hemiface, being more common in females. The etiology is unknown, and symptomatology is variable, beginning in the first two decades of life and evolving over 20 years or more. There is no specific treatment, and prognosis depends on the severity of lesions. We report the case of a 17-years-old male who presented with a painless, chronic cutaneous lesion on his left hemiface, resulting in malar depression, not responding to topical corticosteroid treatment. The neurological examination revealed left hemiface atrophy involving the nasolabial fold and malar area and tapered fingers. Autoimmune tests yielded normal results, and a brain magnetic resonance imaging (MRI) showed a reduction of left infraorbital fat tissue, with no endocranial lesions. He remains under surveillance, without a specific therapeutic intervention.

Resumo

A síndrome de Parry-Romberg (PRS) é uma condição rara caracterizada pela atrofia progressiva da pele, tecidos subcutâneos, músculos e estruturas ósseas da hemiface, afetando preferencialmente o sexo feminino. A etiologia é desconhecida e os sintomas são variáveis, com início nas duas primeiras décadas de vida e evoluindo durante 20 anos ou mais. Não existe tratamento específico e o prognóstico depende da gravidade das lesões. Apresenta-se o caso de um adolescente de 17 anos, referenciado por uma lesão crónica cutânea indolor na hemiface esquerda com depressão da região malar, sem resposta à terapêutica com corticosteróide tópico. O exame neurológico revelou atrofia da hemiface esquerda, envolvendo o sulco nasogeniano e região malar e dedos afilados. O estudo de autoimunidade foi normal e a ressonância magnética cerebral mostrou redução do conteúdo adiposo infraorbitário esquerdo, sem lesões endocranianas. O doente mantém-se sob vigilância, sem intervenção terapêutica específica.

Introduction

Parry–Romberg syndrome (PRS) or progressive hemifacial atrophy is a rare disorder of uncertain etiology characterized by progressive atrophy of soft and hard tissues of the hemiface, typically beginning in the first two decades of life and evolving over 20 years or more.[1-4] The disease progresses slowly with gradual atrophy, frequently associated with dermatological, neurological, ophthalmological, and other system involvement, leading to secondary complications, which account for the potentially systemic nature of this clinical condition.[5-10]

Case Report

A 17-year-old male adolescent was referred to Neuropaediatrics evaluation due to a painless, chronic cutaneous lesion on the left hemiface, responsible for some asymmetry, to identify a potential neurogenic cause for this situation. The lesion had developed over several months, initially appearing as an erythematous macula in the malar region and progressing to a depressed area, with no improvement with topical corticosteroid treatment. The patient had a history of atopic dermatitis, allergic rhinitis, and controlled asthma, but was otherwise healthy, with a good academic performance. There was no history of local trauma, infectious diseases or neurological symptoms, and family medical history was also unremarkable.

The neurological examination revealed atrophy of the left hemiface, involving the nasolabial fold and malar area, without skin induration. Additionally, the patient exhibited tapered fingers (**Figs. 1**, **2** and **3**).



Figures 1 and 2. Nasolabial and malar atrophy (arrows) evidenced with a smile.

Complete blood count (leucocytes 5500/uL, neutrophils 2370/uL, lymphocytes 2620/uL, hemoglobin 15.9 g/dL, platelet count 183000/uL), erythrocyte sedimentation rate (ESR) and C reactive protein were normal, and only a slight increase in serum creatine kinase (CK) activity was identified in the biochemical profile (180 U/L).



Figure 3. Tapered fingers.

Brain magnetic resonance imaging (MRI) showed decreased left infraorbital fat tissue, with no structural abnormalities in the central nervous system (CNS). The patient was subsequently referred for evaluation by a Paediatric Rheumatologist, and the autoimmune tests, including antinuclear antibodies, anti-SSA60, anti-SSB, anti-Sm, anti-RNP, anti-Scl70, anti-JO 1 were all negative.

After multidisciplinary discussion, naturally involving the family and the teenager, it was decided to keep him under surveillance. Nine months later, he remains clinically stable, with no ongoing pharmacological treatment.

Discussion

Parry-Romberg syndrome (PRS) is characterized by progressive atrophy of skin, subcutaneous tissue, muscle, and bone in the hemiface.[1-4] In some cases, it may extend to involve the eye with enophthalmos, the ipsilateral limb, or even the CNS.[1,2,4,5] It is more commonly seen in females and predominantly affects the left hemiface, with bilateral lesions being rare, only described in 5%-10% of cases.[1-3,6] The etiology of PRS remains unclear, but the prominent proposed theories include autoimmune, traumatic, neurovascular, infectious, genetic and sympathetic nervous system dysfunction among another hypothesis.[2,3,5,7] Denervation of trigeminal and/or facial nerve has also been listed as possibly contributing to this situation.[2,8,9]

There has been a longstanding debate regarding the relationship between PRS and linear scleroderma, based on similar clinical and histopathological appearances.[7] The *en coup de sabre* (ECDS) form presents a close differential diagnosis for PRS, and occasionally these two conditions become indistinguishable.[7,8] Both diseases share similarities in terms of age of onset, slow progression, neurological or ocular complications and response to immunosup-

pressive agents. The two conditions may overlap in the same patient at the same site and may rarely coexist at different sites.[3,5,7,8,10-12] PRS and ECDS can be differentiated by the presence of skin induration and involvement of the subcutaneous tissues. PRS typically presents as paramedian atrophy without significant skin induration and tends to extend downward on the face, involving more muscle, bone and oro-dental structures. In contrast, ECDS is characterized by forehead skin induration and a higher likelihood of structural abnormalities on MRI.[7,8,10,11] Antinuclear antibodies are positive in one third to half of these patients.[7,8] In the reported case, no history of trauma, infection or other skin-related conditions aside from atopic dermatitis were observed, and the autoimmune investigation was negative.

The symptomatology of PRS is variable, typically beginning in the first two decades of life and evolving over 10 to 20 years before stabilization.[1,7,8] The disease progresses slowly from the skin and soft tissues to deeper structures, such as muscles and bone. Frequently, there are dermatological, neurological, ophthalmological, otorhinolaryngological, oro-dental and other system involvement, resulting in secondary complications. The most common neurological symptoms include headache, epileptic seizures, trigeminal neuralgia, neuropathies of the third, fifth, sixth, and seventh cranial nerves and facial paresthesia. Other findings include speech disorders, cognitive impairment, behavioral disorders, asymptomatic white-matter changes, infarction, hemorrhage, vascular malformations, and CNS cysts. Epilepsy is described in 11%-20% of PRS cases, with onset in the first decade of life.[1,3,7,8,11,13] In this case, the patient exhibited isolated hemifacial atrophy affecting the lower half of the left hemiface, which is the most frequently reported clinical manifestation in PRS, with no abnormal pigmentation or other symptoms, often associated with this condition.[2,7]

At the time of diagnosis, it is recommended that all patients with or without neurological involvement have an MRI of the head, as a significant percentage of patients exhibit intracranial abnormalities. The most common findings reported in studies include ipsilateral white matter disease with hyperintense signal in T2-weighted images, hemispheric brain atrophy, cavernous malformations, microhemorrhages, and subcortical calcifications, predominantly noted in the frontal lobe.[3,4,8,11,14,15]

MRI images from our patient revealed no brain structural abnormalities and only atrophy of the facial fat corresponding to the lesion site that was visualized, corroborating the diagnostic impression.

While there is no specific treatment for PRS, a range of options, from medical interventions to surgical techniques are available.[1,5,16-18,20] Immunosuppressors (i.e prednisolone, methotrexate, cyclosporine, cyclophosphamide, mycophenolate mofetil), may be considered in early stages, to prevent the progression of deformity, when neurological symptoms or neuroimaging abnormalities are present and when anti-epileptic drugs are not effective in seizure control.[4,5,11,14,19] Surgical approaches may be considered to reconstruct the affected area and restore facial symmetry, using autologous tissue (skin, subcutaneous fat, muscle, bone/cartilage) or biomaterials.[1-3,16,18] Tissue regeneration using bone-marrow-derived mesenchymal stem cells has also been attempted as a treatment.[7,8] Semi-permanent or permanent fillers may be effective for cosmetic improvements.[5,18]

The prognosis of PRS varies depending on the extent of the lesions and the age of onset. Earlier onset typically results in more severe deformities.[2,5,8,16] Neurologic and aesthetic manifestations are the primary concerns in PRS.[7,8,11,16] Studies suggest that CNS imaging follow-up is typically unnecessary in the absence of neurological symptoms and normal MRI at the time of diagnosis.[4,13]

In patients with PRS, early diagnosis is crucial due to the potential severity of the disease and a high clinical suspicion is important to avoid unnecessary investigation. A multidisciplinary approach is essential to optimize patient care and further surveillance. ■

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DP, MC and RC: Conception, writing and final approval.
PE: Critical review and final approval.
FP: Conception, data analysis and interpretation, critical review and final approval.

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