

A Case Report of Rare Variant of MS: Balo's Concentric Sclerosis

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Abstract

The present report is about a case of Balo's concentric sclerosis. Patients with this disorder present with acute or subacute neurological deterioration, with a characteristic MRI finding of one or more concentrically multilayered ring-like lesions usually in the cerebral white matter [1]. The increasing use of MRI, the diagnosis of Balo's concentric sclerosis can be made at an early age. In our case, the patient is diagnosed at a young age, and show efficient response to intravenous methylprednisolone treatment.

Keywords: *Balo's Concentric Sclerosis; MRI; Methylprednisolone*

Introduction

Concentric sclerosis of Balo; is considered a rare variant of MS [2]. It has clinical presentations similar to MS, it begins at a young age; it causes mild cognitive impairment and focal central nervous system deficit. Historically, the diagnosis was made post-mortem, so considered to be fatal, but today antemortem diagnosis can be made with the increasing frequency of MRI use. Diagnosis is made with MRI imaging findings observing specific central nervous system lesions consisting of concentric demyelination rings alternating with myelinated white matter [3].

Case Report

A 19-year-old female patient presented with numbness and weakness of her left sided extremities. Her complaints were started 2 weeks ago, in her left arm, continued with numbness in her left leg and weakness was added. In the neurological examination, the patient was conscious, cooperative and oriented, and mild hemiparesis and hemihypoesthesia was detected in the left-sided upper and lower extremities, there was no facial asymmetry and hypoesthesia, bilateral fundii, pupillary reflex, visual acuity, and color vision were normal with no ophthalmoparesis. Hemogram, sedimentation, biochemistry and serology were found to be normal from the blood tests performed on the patient. For the differential diagnosis cerebral MRI performed. MRI demonstrated at the level of the centrum semiovale concentric lamellar appearance and T2 hyperintensity lesions consistent with demyelinating plaque were observed in the left thalamus and left internal capsule. It was decided to perform lumbar puncture on the patient; however, it could not be performed because the patient did not give consent. On followed outpatient controls patient changed her mind and lumbar puncture is performed with taken informed consent to lumbar puncture. Lumbar puncture result was oligoclonal band type 2 positive, the IgG index in CSF was 0,76. In her first relaps patient was taken methylprednisolone at a dose of 1000 mg / day intravenously for 5 days. On the last day of treatment, there were significant regression in patient's symptoms and neurologic examination. During 1 year of follow-up, there were no further relapses.

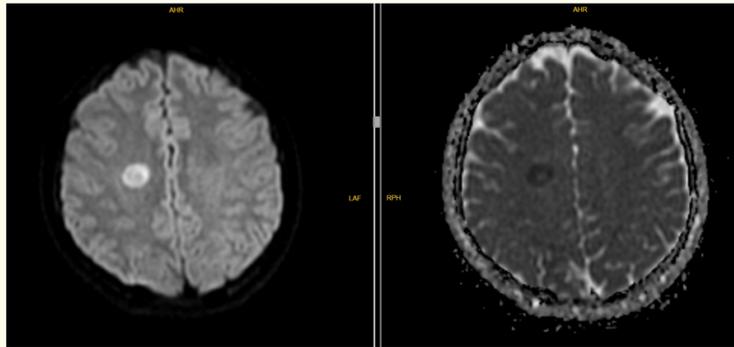


Figure 1: On the right, at the level of the centrum semiovale, a hyperintense area of the nodular lesion showing hypointense diffusion restriction on the ADC map was observed.

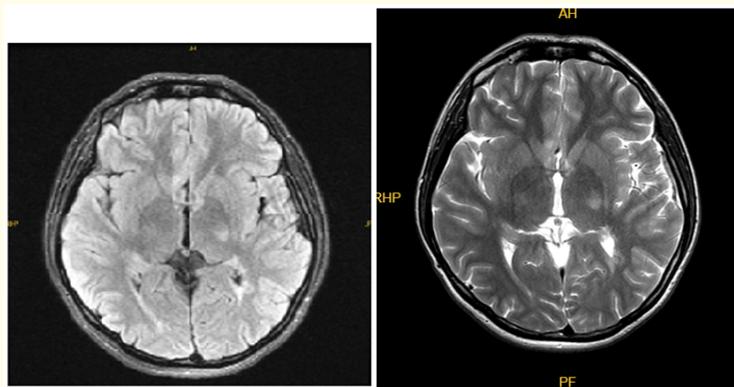


Figure 2: T2 hyperintensity lesions consistent with demyelinating plaque were observed in the left thalamus and left internal capsule at the level of the posterior limb.

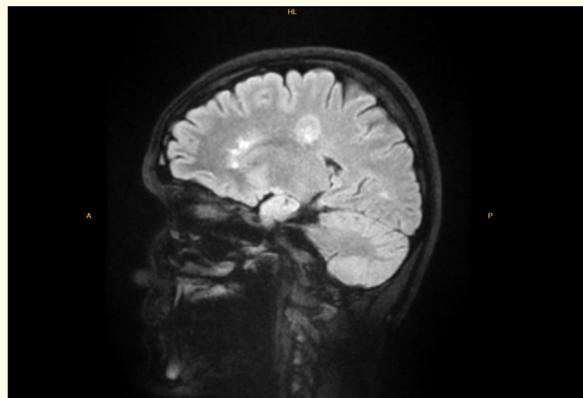


Figure 3: In the corpus callosum, pericallosal, periventricular areas, and in both cerebral hemispheres, subcortical-juxtacortical white matter multiple T2 hyperintense lesions consistent with demyelinating plaque were observed.

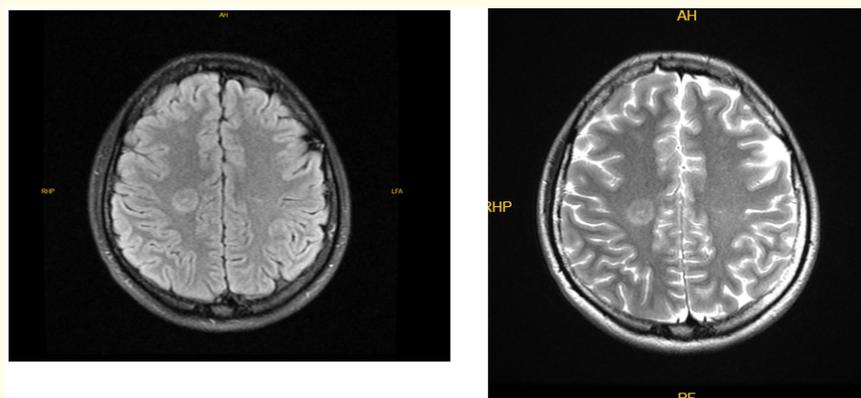


Figure 4: At the level of the centrum semiovale on the right, a heterogeneous demyelinating plaque with a diameter of 16 mm, showing diffusion restriction, containing hypointense and hyperintense areas in laminar style.

Discussion

Balo's Concentric Sclerosis, which was thought to have a monophasic, rapidly progressive course at the beginning [4], was shown to be beneficial for neurological deficits with early diagnosis with MRI and anti-inflammatory corticosteroid treatment [5]. The ability of increased access of MRI imaging to diagnose earlier in its progression may have a significant effect on morbidity and mortality associated with the disease [3]. MRI changes of Balo's concentric sclerosis includes concentric rings or helical lesions on T2-weighted images and T1-weighted images with gadolinium, reminding an onion ring appearance [1,4]. For the attack treatment, corticosteroids and plasma exchange are recommended as the first and second line therapy. The prognosis of the Balo's Concentric Sclerosis patients is variable [6].

Conclusion

We present the case of 19-year-old female patient first attack with hemiparesis and hemihypoesthesia, with lesion at the level of the centrum semiovale on the right, a concentric ring, Balo's Concentric Sclerosis diagnosis was made by MRI imaging. The patient had a dramatic response to intravenous methylprednisolone and clinical improvement was observed. During first year follow up clinic was stable and relapses were not detected. This case is sample of self-limited Balo's concentric sclerosis variant and had a nearly completely recover after first attack.

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