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Case Report

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The Insidious Clinical-Radiological Features of Neuroinfectious Diseases in Emergency: A Clinical Case

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Abstract

In emergency neurology, numerous pathologies must be considered. Particularly in young people, even in the presence of clinical symptoms such as dizziness and headache, an anamnesis and clinical assessment must be carried out to identify whether there is an underlying neurological disease. In this category, in particular in the case of patients without any particular risk factors, an infectious aetiology should not be overlooked. In fact, only a timely diagnosis can avoid long-term sequelae.

Keywords: Abscess, Neuroinfectivology, Headache, Neuroradiology, Case Report

1. Introduction

Below we present the MRI images of a clinical case that highlights the clinical, radiological and laboratory subtle presentation in neuroinfectious diseases. In fact, in a clinical-laboratories scenario often silent, brain MRI may help clinicians to reach a prompt and accurate diagnosis.

2. Discussion

An18-year-old girl came to E.R. because of frontal intense headache. It had started 2 months earlier, and had worsened. No photophobia, phonophobia or aura were present. She denied major pathologies, home therapy, smoking and contraceptive use. Her primary physician had concluded for sinusitis, and had started antibiotic therapy a week earlier. She had no flue. On neurological examination the patient appeared alert, slowed down, oriented, head and gaze were turned preferentially to the right, the patient appeared almost akathisiac due to the headache. No cranial nerve disorders were appreciated, no motor deficits were detected.

At blood exams neutrophilia was present (11.000 WBC/mm3, n.v.< 8.000/mm3). Reactive-C-Protein was 37 mg/dl (n.v.< 5 mg/dl).

Brain-CT showed two large areas of bifrontal hypo intensity, surrounded by massive oedema. The 2-months story of headache together with images may indicate tumour or infectious disease.

CSF could not be performed because of huge mass effect.

Gd-MRI (Figure 1) illustrated two T2-FLAIR hyperintense bifrontal expansive formations, with abundant oedema, with internal marked signal restriction in DWI/ADC. The walls show marked Gadolinium impregnation with intense meningeal enhancement. In T2 sequences a hypodense outline surrounded both lesions. Both lesions appear contiguous with frontal sinus, with focal erosion of the bony cortical at this level. The frontal sinus present abundant inflammation. Clinical-radiological data are suspicious for brain abscess deriving from frontal sinusitis [1]. The girl was taken to neurosurgical room for abscess drainage and began intravenous antibiotic therapy for S. Pneumoniae.The girl recovered without sequelae.

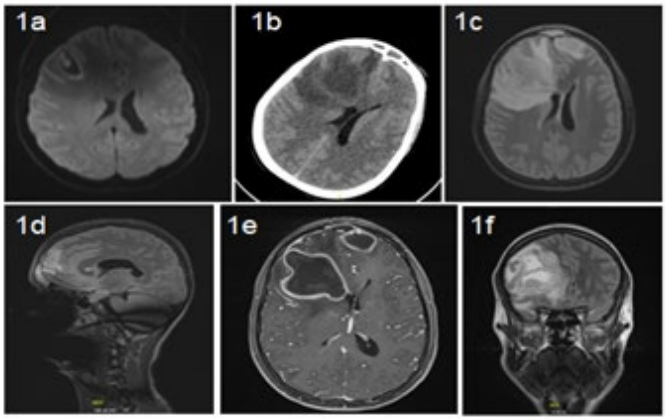

Figure 1: Shows an Axial Dwi Image of Brain Mri with Internal Signal Restriction

1b. shows CT brain with digitate oedema
1c. Axial T2 FLAIR of brain MRI showing both the lesions surrounded by oedema and the flogosis of frontal sinus
1d. Is a sagittal T2 FLAIR image showing frontal cortical bone erosion
1e. Axial T1 Gd+ MRI image showing the contour typical of abscess
1f. Coronal T2 image showing the hypodense contour of the abscess

3. Conclusion

This clinical case underlines the importance to consider, especially in young people, infectious aetiology, even in the absence of fever, or changes on blood exams and CSF tests, when it is performed. Accurate and rapid differential diagnosis is important so that the correct antibiotic and possibly surgical treatment can be carried out to ensure an optimal prognosis. The anamnesis and evaluation of headache is crucial to individuate characteristics atypical for primary headaches, that may deserve a deepened imaging study. Brain MRI is a clue for diagnosis. In fact, the finding of central restriction area in DWI together with the circled enhancement and hypointense contour in T2 sequences are decisive diagnostic elements for the diagnosis of pyogenic abscess [2]. Brain MRI also makes possible to verify inflammatory foci adjacent to the central nervous system, responsible for possible infectious dissemination.

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