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Case report

Disseminated histoplamosis in adolescent mimicking granulomatosis with polyangiitis

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ABSTRACT

Introduction: Systemic histoplasmosis is an invasive fungal infection that may mimic primary vasculitis, particularly granulomatosis with polyangiitis (GPA), and was rarely described in adult patients. We reported an immunocompetent patient with disseminated histoplasmosis mimicking GPA who fulfilled European League Against Rheumatism (EULAR)/Pediatric Rheumatology International Trials Organisation (PRINTO)/Pediatric Rheumatology European Society (PRES) validated classification criteria.

Case report: A 6-year old boy presented acute migratory polyarthritis with spontaneous improvement, sinus inflammation, fever, headache and abdominal pain. Serologic test for hepatitis, cytomegalovirus, human immunodeficiency virus, Epstein–Barr virus, toxoplasmosis, dengue virus and antistreptolysin O were all negative. Magnetic resonance imaging (MRI) showed moderate ascites in pelvis and pansinusitis. Antineutrophil cytoplasmic antibodies (c-ANCA) were positive. He had spontaneous remission of the symptoms including fever. At the age of 11 years and 11 months, he had sinusitis, pneumonia and epididymitis. A month later, he was hospitalized and MRI showed left eye proptosis. Cerebrospinal fluid was normal and indirect tests of fungi were negative. Two months later, he had lumbar pain and computer tomography showed a mass in the right kidney and pulmonary nodule in the right lung. He fulfilled EULAR/PRINTO/PRES criteria for GPA, however the renal biopsy showed a focal granulomatous interstitial nephritis with yeast fungal cells compatible with *Histoplasma* sp. He was treated with liposomal amphotericin B and itraconazole with improvement of signs and symptoms.

Conclusion: We reported a progressive disseminated histoplasmosis case mimicking GPA. Histoplasmosis infection should be considered in immunocompetent subjects with uncommon clinical manifestations, such as arthritis, nephritis and epididymitis.

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Histoplamose disseminada em um adolescente mimetizando uma granulomatose com poliangiite

Palavras-chave:
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Granulomatose de Wegener
Epididimite

RESUMO

Introdução: A histoplasmose sistêmica é uma infecção fúngica invasiva que pode mimetizar uma vasculite primária, particularmente a granulomatose com poliangiíte (GPA). É raramente descrita em pacientes adultos. Relata-se o caso de um paciente imunocompetente com histoplasmose disseminada mimetizando uma GPA que atendeu aos critérios de classificação validados da European League Against Rheumatism (EULAR)/Pediatric Rheumatology International Trials Organisation (PRINTO)/Pediatric Rheumatology European Society (PRES).

Relato de caso: Um menino de 6 anos de idade manifestou poliartrite migratória aguda com melhora espontânea, inflamação sinusal, febre, cefaleia e dor abdominal. Os testes sorológicos para hepatite, citomegalovírus, vírus da imunodeficiência humana, vírus de Epstein-Barr, toxoplasmose, vírus da dengue e antiestreptolisina O foram negativos. A ressonância magnética (RMN) mostrou ascite moderada na pelve e pansinusite. O anticorpo anticitoplasma de neutrófilos (c-ANCA) foi positivo. Ele teve remissão espontânea dos sintomas, incluindo a febre. Aos 11 anos e 11 meses de idade, ele teve sinusite, pneumonia e epididimite. Um mês depois, foi hospitalizado e a RMN mostrou proptose do olho esquerdo. O líquido cerebrospinal estava normal e testes indiretos para fungos foram negativos. Dois meses depois, ele teve dor lombar e a tomografia computadorizada mostrou uma massa no rim direito e um nódulo no pulmão direito. Ele atendeu aos critérios da EULAR/PRINTO/PRES para GPA; no entanto, uma biópsia renal mostrou uma nefrite intersticial granulomatosa focal com células fúngicas leveduriformes compatíveis com *Histoplasma sp.* Ele foi tratado com anfotericina B lipossomal e itraconazol, com melhora dos sinais e sintomas.

Conclusão: Relata-se um caso de histoplasmose disseminada progressiva mimetizando uma GPA. A infecção por histoplasmose deve ser considerada em indivíduos imunocompetentes com manifestações clínicas incomuns, como artrite, nefrite e epididimite.

Introduction

Systemic infections are important differential diagnoses to autoimmune pediatric rheumatic diseases. Disseminated fungal infections have been rarely reported in these patients, especially in childhood-onset systemic lupus erythematosus patients under disease activity, lymphopenia or immunosuppressor therapy.[1–3]

In addition, systemic histoplasmosis generally is associated with immunocompromised patients.[4] This invasive fungal infection may mimic primary vasculitis with similar clinical manifestations, in particular granulomatosis with polyangiitis (GPA) or Wegener granulomatosis, which was rarely described in adult patients, but to our knowledge such a thing has not been reported in pediatric population.[5]

Therefore, we reported herein an immunocompetent patient with disseminated histoplasmosis mimicking GPA that fulfilled the new European League Against Rheumatism (EULAR), Pediatric Rheumatology International Trials Organization (PRINTO), Pediatric Rheumatology European Society (PRES) propose validated classification criteria for pediatric population.[6]

Case report

A 6 year-old boy had recurrent acute migratory polyarthritis in shoulders, elbows, hips and knees associated with recurrent sinus inflammation, fever, malaise, headaches and daily abdominal pain. After two months at admission in our University Hospital, he presented arthritis in the left knee and morning stiffness of 2 h with spontaneous remission. Laboratory tests showed erythrocyte sedimentation rate (ESR) 81 mm/1st hour, C-reactive protein (CRP) 63 mg/L, hemoglobin 11.2 g/dL, hematocrit 32%, white blood cell count (WBC) 11,400/mm^3 (neutrophils 60%, lymphocytes 35%, eosinophils 1% and monocytes 4%) and platelets counts 523,000/mm^3. Serologic tests for hepatitis A, B and C, cytomegalovirus, human immunodeficiency virus, Epstein–Barr virus, toxoplasmosis, dengue virus and antistreptolysin O were all negative. Ophthalmological examination, bone scintigraphy, echocardiogram, colonoscopy, skull computer tomography (CT) and bone marrow aspirate were normal. Abdomen magnetic resonance imaging (MRI) revealed moderate ascites in pelvis and sinuses MRI showed pansinusitis. Antinuclear antibodies (ANA) were 1/80. Antineutrophil cytoplasmic antibodies (c-ANCA) were positive on two different occasions (1/80 and 1/20) at 6 years old, and were systematically negative on an annual basis. The anti-proteinase 3 antibody was not evaluated. The rheumatoid factor and anti-DNA antibodies were negative. Serum levels of IgG were 1988 mg/dL (normal range 970–1710), IgA 301 mg/dL (normal 69–382) and IgM 340.5 mg/dL (normal 53–145). Lymphocyte immunophenotyping showed: CD3$^+$ 1614 cells/mm^3 (normal 1000–2200), CD4$^+$ 1136 cells/mm^3 (normal 530–1300), CD8$^+$ 412 cells/mm^3 (normal 330–920), CD16$^+$/56$^+$ 135 cells/mm^3 (normal 70–480)

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