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PSEUDOTUMOR CEREBRI AS THE MAJOR MANIFESTATION OF SYSTEMIC LUPUS ERYTHEMATOSUS IN A CASE OF FEVER OF UNDETERMINED ORIGIN

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ABSTRACT

Systemic lupus erythematosus (SLE) is less likely to present as fever of undetermined origin today. This is due to the widespread use of immunologic tests which permit early diagnosis. It is not surprising therefore that only atypical cases of SLE present as FUO. Although uncommon, pseudotumor cerebri has been recognized as either a presenting manifestation or a complication of SLE. This case was a 15 year old girl who presented with pseudotumor cerebri and prolonged fever as the major manifestations of SLE. Absence of musculoskeletal symptoms and a low sedimentation rate were the major misleading points that deferred the diagnosis. This case report not only describes a rare manifestation of SLE but also emphasizes the previously known fact that "FUO is an uncommon presentation of this common disease."

Keywords: FUO, SLE, Pseudotumor Cerebri

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INTRODUCTION

Involvement of the central nervous system during the acute stage of systemic lupus erythematosus (SLE) is seen in 30-40% of patients with the disease.[1] Retinal lesions, which are neither constant nor pathognomonic, are the most frequent ophthalmolgical manifestation of SLE.[2] Although uncommon, pseudotumor cerebri has been recognized as either a presenting manifestation or a complication of SLE.[3-11] It should be noted that only 21 cases of benign intracranial hypertension associated with SLE have been reported in the literature. The purpose of this paper is to report a case of SLE who presented with pseudotumor cerebri and prolonged fever as the main features of her disease.

Case report

A 15 year old female was admitted to Namazi Hospital, Shiraz in November 1991, for evaluation of prolonged fever. Her problem had started from 2 months prior to admission with fever, flu-like symptoms and a transient erythematous skin rash. All work-ups for evaluation of her febrile illness in a suburban hospital were inconclusive and so she was referred to our hospital. Apart from malaise and easy fatigue, she denied having other symptoms such as joint problems, nausea, dizziness, visual blurring, headache or alteration of consciousness. On admission, examination revealed a thin young lady with a temperature of 38.5°C, blood pressure of 120/70 mm Hg and a weight of 40 kg. Bilateral papilledema with a small retinal hemorrhage was noted on ophthalmological examination, and the borders of her optic discs were raised and indistinct with tortuous retinal veins. Pupillary reflexes and visual acuity were normal.

She had no other positive finding on physical examination. Routine laboratory investigations revealed a hemoglobin level of 10.1 gr/dL and a WBC of 4600 with 59% segmented neutrophils, 22% lymphocytes, 8% monocytes, 1% nonsegmented neutrophils and 10% atypical lymphocytes. Her platelet count was 230,000. Erythrocyte sedimentation

rate (ESR) was 30 mm/h (Wintrobe) and serum creatinine was 0.8 mg/dL. Liver function tests were within normal limits. Urinalysis showed 4-5 WBC and 1-2 RBC in high power field and was negative for protein and casts. Assays for rheumatoid factor, CRP, and febrile agglutinins were negative. Urine, blood, stool and throat cultures were negative. Brain computerized tomography (CT) scan was normal, showing normal ventricular size.

Lumbar puncture produced clear and colorless cerebrospinal fluid (CSF) with an opening pressure of 400 mm H_2O, a protein level of 55 mg/dL, a normal glucose level and 2-3 white blood cells. Staining for acid fast bacilli, and Gram stain and culture were negative. Abdominal sonography and chest X-ray were normal.

After 1 week of unrevealing in-hospital work-up, the patient was labeled as a case of fever of undetermined origin and extensive work-up was performed. Repetition of blood, urine and stool cultures were again negative. repetition of Wright and Widal tests were negative. Serum titers for visceral leishmaniasis and toxoplasma were negative. The PPD skin test for tuberculosis was negative. Prothrombin time (PT), partial thromboplastin time (PTT), CPK and LDH were within normal limits. Echocardiography was normal. Serum preparation for sickle cells was negative. Bone marrow aspiration and biopsy were unremarkable and culture of the bone marrow aspirate was negative for salmonella, brucella and visceral leishmaniasis. On the fifteenth day of hospital admission antinuclear antibody (ANA) was positive with a diffuse pattern and a titer of 1:80. Anti-double strand DNA antibody (ds DNA) was positive with a titer of 1: 180 which was strongly positive for SLE. LE cell preparation was also positive. C3 and C4 were in lower normal limits. Coombs' tests were negative. VDRL was nonreactive. During the hospital course the patient developed an evanescent erythematous skin rash which faded prior to biopsy taking.

On the sixteenth day of the hospital admission, she was given 40 mg of prednisolone orally once daily. Her constitutional symptoms and fever improved dramatically and she left the hospital 3 days later against medical advice.

One month later on follow-up examination, she had no complaint except for her facial puffiness. Physical examination disclosed a normal temperature, mild facial puffiness and persistence of bilateral papilledema. There was no retinal hemorrhage but tortuous veins were still present. Visual acuity seemed to had declined dramatically. She had not referred to an ophthalmologist for follow-up and at this time was referred to an ophthalmologist who advised adding acetazolamide to steroids and biweekly follow-up. The next visit was 6 months later, in which the patient was in good health with mild cushingoid habitus. Using 5 mg of prednisolone daily, she had no visual problem and her fundoscopy revealed a normal retinal background and optic disc.

DISCUSSION

An exhaustive list of conditions have been linked to pseudotumor cerebri, (PTC) though many may simply have had a coincidental association.[7] The association of SLE and PTC has been shown in several reports. The incidence of isolated papilledema associated with SLE is reported to be 0.9%.[12] This may be related to hypertension, anemia, papillitis or renal disease. PTC is one of the causes of papilledema in SLE. The exact mechanism of PTC is not known in SLE but anemia and asymptomatic cerebral vasculitis seem to predispose to PTC by causing an alteration of brain metabolism and hemodynamics.[6,13] It is speculated that CSF absorption by arachnoid villi is probably disturbed.[14] Also, dural sinus thrombosis has been proposed as a mechanism of PTC in SLE.[5,15] It is believed that patients with associated PTC generally have a more severe course of SLE.[16] Renal involvement occurred in 79%, massive proteinuria in 47% and hematologic abnormalities were detected in a third of such patients. Also, the high prevalence of serological or clinical evidence of a hypercoagulable state suggest that microscopical thrombotic events play a role in the genesis of PTC in SLE.[16]

In the majority of the reported cases in the literature, PTC was seen with a full-blown picture of SLE or in the course of treatment for this disease, but PTC has uncommonly been mentioned as the main feature of presentation as was seen in this case in reported series. In addition, there was no significant anemia, hypertension, renal disease or neurological involvement in our case.

With respect to potential therapy for pseudotumor cerebri, different modalities such as use of steroids, anticoagulation, and antiplatelet agents all remain speculative.[7] The majority of the cases in the literature responded well to steroids and there was no need for further treatment with any modalities such as acetazolamide, Furosemide, lumboperitoneal shunt or other forms of surgical intervention. Our case responded gradually to steroids and the ophthalmologist suggested using acetazolamide for reduction of intracranial pressure for initial treatment.

The other interesting aspect of our case was her presentation as a case of FUO. It is believed that patients with systemic lupus erythematosus are less likely to appear as FUO because immunologic tests now permit early diagnosis.[17] It is not surprising therefore that only atypical cases of SLE present as fever of undetermined origin.[18] In our patient the body of evidence was not sufficient enough to consider a diagnosis of collagen vascular disease seriously. On the other hand, absence of musculoskeletal symptoms and a low sedimentation rate were the major misleading points which deferred the diagnosis of SLE.

It is interesting to consider that this presentation not only describes a rare manifestation of SLE but also emphasizes the old dictum that: "FUO is an uncommon presentation of common disease."

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