
Rare Case Report of Frosted Branch Angitis Associated with Mycobacterium Tuberculosis Infection

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ABSTRACT

Tuberculous meningitis associated with frosted branch angitis is very rare disease. Frosted branch angitis (FBA) is a special form of vasculitis, affecting the whole retina. The fundoscopic findings of FBA include bilateral widespread retinal vasculitis with severe sheathing of the retinal vessels, similar to frosted branches of a tree. One should keep in mind this entity and should start Anti Koch's Treatment with glucocorticoid administration. Early diagnosis and prompt treatment are very important to restore vision in FBA associated with TB meningitis. Here we report a case of FBA secondary to mycobacterium tuberculosis (TB) infection because of its rarity.

Key Words: *Tuberculous meningitis, Frosted branch angitis, prompt treatment*

BACKGROUND

Tuberculous meningitis associated with frosted branch angitis is very rare disease. Frosted branch angitis (FBA) is a special form of vasculitis, affecting the whole retina. The first case was reported of a young, immunocompetent boy in 1976 with bilateral white perivascular retinal sheathing seen. [1] The fundoscopic findings of FBA include bilateral widespread retinal vasculitis with severe sheathing of the retinal vessels, similar to frosted branches of a tree, particularly at the periphery, and mild to moderate iritis or vitritis. In this article, we reported a case of FBA secondary to mycobacterium tuberculosis (TB) infection because of its rarity.

Case Presentation

A 19-year-old female patient admitted in department of medicine with history of fever (38.7°C) for 15 days, vomiting, headache and altered behavior for 5 days with generalized weakness. She had no significant any past history of medical diseases. Family history was also non-significant. On examination, patient had altered sensorium with presence of neck rigidity and bilateral planter reflex extension. Cerebrospinal fluid (CSF) examination showed total cell count of 100/mm³ with 70% Lymphocytes and 30% of Neutrophils, protein level was 154.7mg/dl and sugar was 40 mg/dl. She was diagnosed as a case of Tuberculous meningitis (TBM) and given Category-I Anti Koch's Treatment (AKT) under RNTCP

guideline. She improved clinically on 8th day of treatment, she complained of blurring of vision in both eyes. She was also investigated for Varicella Zoster Virus, Cytomegalovirus, Herpes simplex virus (HSV) Type- I, HSV type-II, HBsAg, HIV, HAV, HEV and HCV which all were negative. On fundus examination she had frosted branch angitis (FBA) which is atypically found in TBM. Because of the tuberculous meningitis, she was treated with Isoniazid 0.6 g/day, Rifampicin 450 mg daily, Ethambutol 0.75 g/day, and Pyrazinamide 1.5 g/day. Oral prednisone 50 mg was also given. The dose of steroid was tapered after a week. She was treated accordingly and discharged with further treatment given.

DISCUSSION

Frosted branch angitis is an uncommon presentation of retina atypically in some of the diseases. The most common findings in the eye on fundus examination are florid sheathing of retinal arterioles and venules, anterior uveitis and retinal oedema. The characteristic fundus examination finding is frosted branch angitis which was mostly bilateral.

The cases of secondary frosted branch angitis are commonly found with infectious retinitis, notable cytomegalovirus retinitis, lymphoma and leukaemia etc. Primary (idiopathic) Frosted branch angitis is rare and it presents with bilateral loss of vision and commonly affects children and young adults. There may be viral prodrome sometimes. FBA can be associated with autoimmune disease or infections with microorganisms like viruses, tuberculo-protein, toxoplasmosis, anti-streptolysin O, measles and rubella [2, 3].

The pathogenesis of FBA in patients of TBM is still not known thoroughly [4] and not all patients of FBA showed presence of tuberculous bacilli. It is very rare that the patients with systemic tuberculosis have ocular involvement [5]. We can find several reports of retinal vasculitis in tuberculosis. [5,6] The first case of FBA along with tuberculosis was reported by Agarwal. [7] The purpose to report this case of FBA with tuberculous meningitis is because of its rarity. The evidence favoring tuberculous etiology in this case was associated tuberculous meningitis and positive results of Mantoux testing. We can also confirm tuberculous etiology by responsiveness to prompt treatment with AKT. In accordance with most patients with FBA, after treatment our patient's visual acuity improved rapidly in both eyes.

CONCLUSION

We can conclude that FBA associated with tuberculous meningitis is very rare manifestation. One should keep in mind this entity and should start Anti Koch's Treatment with glucocorticoid administration. Early diagnosis and prompt treatment are very important to restore vision in FBA associated with TB meningitis.

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