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Case Report

Rheumatic Fever with Concomitant Acute Post Streptococcal Glomerulonephritis in a Child: An Unusual Coincidence.

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Abstract

Rheumatic fever and post streptococcal glomeruloneoritis are both very serious consequences of rheumatogenic and nephritogenic strains of group A beta hemolytic streptococcus infections. It is a unique coincidence for both conditions to be present in a patient at the same time. We report a case of acute rheumatic fever occurring simultaneously with acute post streptococcal glomeruloneoritis in a previously well 6-year-old boy. Salient features include arthritis of multiple large joints, peri-orbital and ankle edema, oliguria, moderate poroteinuria, reduced complement (C3); and elevated streptococcal serology. The case highlights the importance of early recognition and diagnostic challenges to prevent complications that may follow if not treated.

Key Words: Rheumatic fever, Glomeruloneoritis, Post Streptococcal Glomerulonephritis, Concomitant.

Introduction

Acute Rheumatic Fever (ARF) and Acute Post streptococcal glomerulonephritis (APSGN) occurs most commonly in children aged between 5 and 15 year as a sequelae to group A beta hemolytic streptococcus (GABHS) infections as tonsillitis, pharyngitis or skin infection caused by S. pyogenes.[1] Although the co-occurrence of both in the same patient is extremely rare, several pediatric cases have been documented as literatures so far.[2-7] Here we present this interesting case of acute RF with concurrent APSGN in a 6-year-old child associated with hypertension and congestive heart failure treated successfully.

Case report

Our case was a 6-year-old boy who is a 2nd issue of non-consanguineous parents, immunized as per EPI schedule was admitted at TMSS Medical College and Rafatullah Community Hospital with the complaints of high grade continued fever for 10 days, migratory polyarthritis (Figure-1, 2, 3) not associated with morning stiffness for 5 days, passage of scanty reddish urine associated with puffiness of face (Figure-4) for 3 days and dyspnea with orthopnea for last 1 day. He had history of sore throat and skin infection one month back. He did not have any history of involuntary movement, convulsion, altered consciousness, skin rash or previous attack of similar illness. On examination he had pallor with swollen eyelids, puffy face, and bilateral ankle edema. His respiratory rate was 38/min, pulse was 120/min, blood pressure was120/80 mm & Hg which was above 95th percentile and temperature was 100° F. His weight was 18 kg (on 25th C), height was 103 cm (on 3rd C), and Weight for Height on 75th. He had scar mark from previous skin infection, his urine was high color and heat coagulation test revealed proteinuria 2+ (Figure-5). He had multiple joints swelling (bilateral knee, elbow,wrist and ankle joints) with grade 4 tenderness, raised temp and restricted joints movement. His apex beat was shifted to the left with bilateral basal lungs crepitation. Other system examination revealed normal findings. Investigations showed microcytic hypochromic anemia (Hb-10.4 gm/dl), raised ESR (30 mm), neutrophilic leukocytosis with eosinophilia, raised CRP (28 mg/dl), raised ASO titer (800.00 IU/ml), low serum albumin-3.03 g/dl (3.5-4.8), raised 24-hour urinary total protein (0.08 gm/m²BSA/day)

and low C_3 level 0.65mg/dl (0.8-1.7 mg/dl). Urine RME shows high color, protein 2+, RBC 10-12/HPF and pus cell 3-4/HPF. His serum C_4 level, serum creatinine and electrolytes were normal and febrile antigen was negative. Chest X ray showed cardiomegaly, USG of KUB region was normal. ECG showed sinus tachycardia and Echocardiography revealed normal findings. He was diagnosed as Acute Rheumatic Fever with Acute Post Streptococcal Glomerulonephritis with Heart Failure. Treatment was initiated with Bed rest, propped up position, O2 inhalation-2L/min with salt, fluid and protein restricted diet, Furosemide, Phenoxymethyl penicillin and high dose Aspirin. He was discharged after complete recovery 10 days later with treatment (Aspirin for 06 weeks and Benzathinepenicillin 6 lac IU Deep IM every monthly up to 21 years of age) and advised for regular follow up. At 6 months follow-up, the child remained asymptomatic with resolution of hematuria.

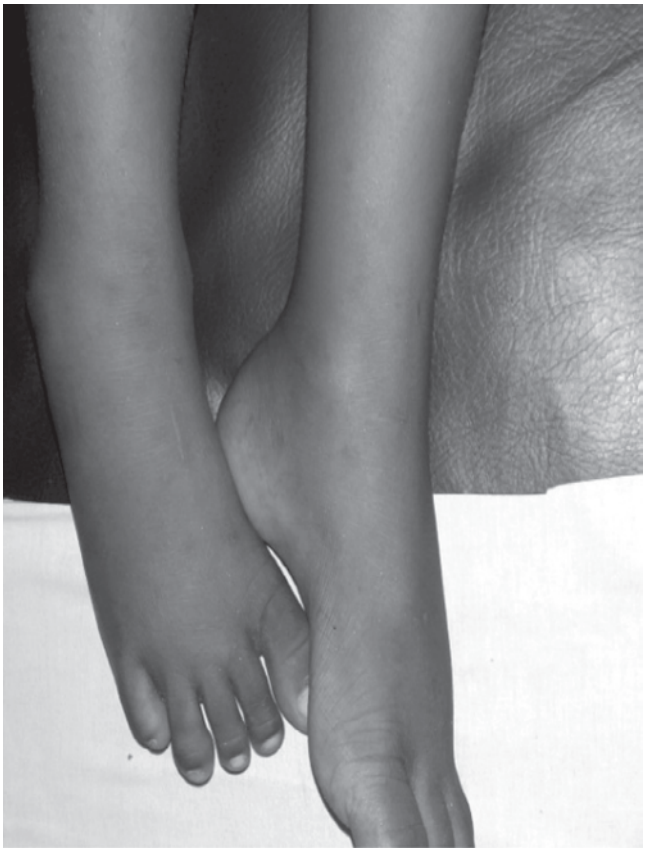

Figure-1: Swelling of both ankle joint

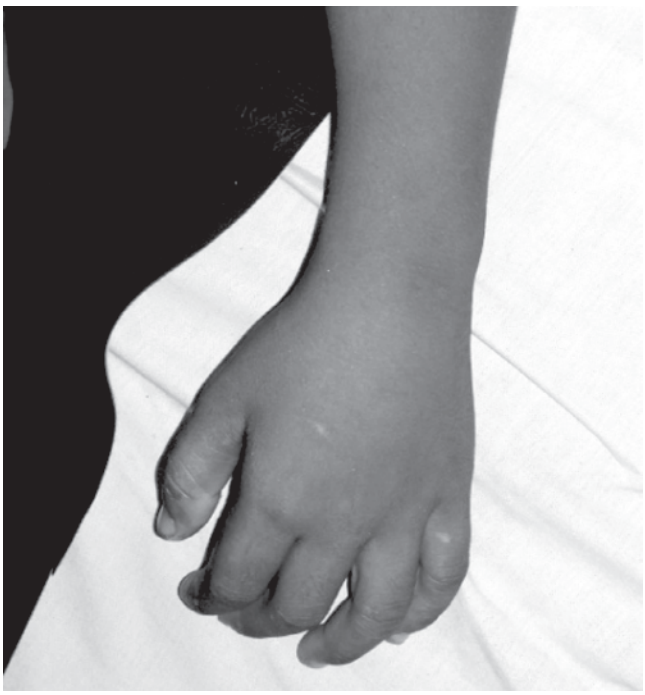

Figure-2: Swelling of wrist join

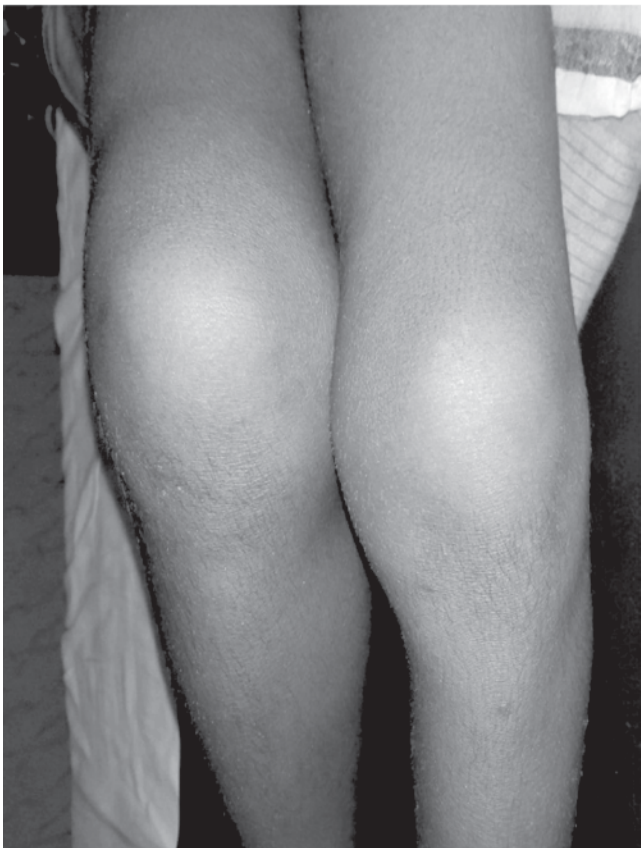

Figure-3: Swelling of both knee joints

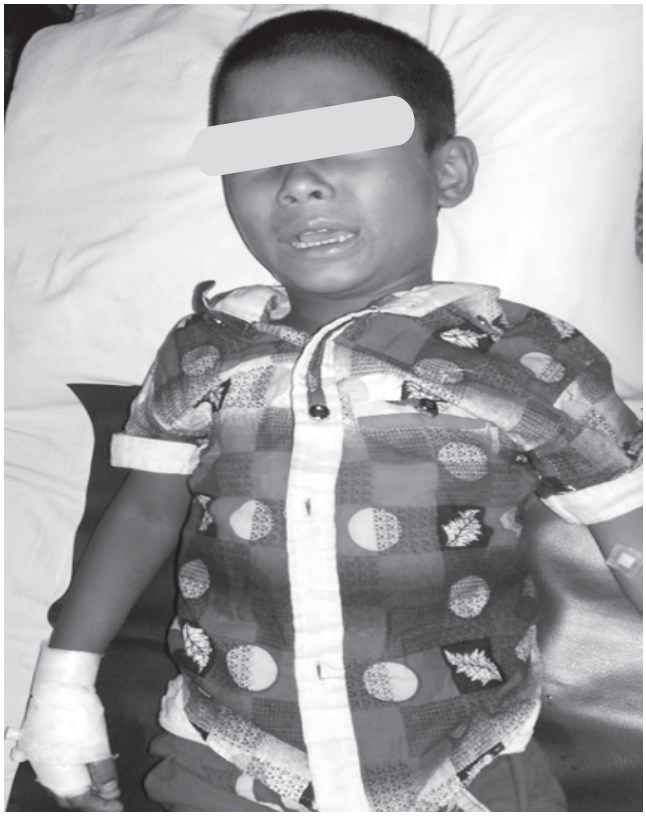

Figure-4: Puffiness of face

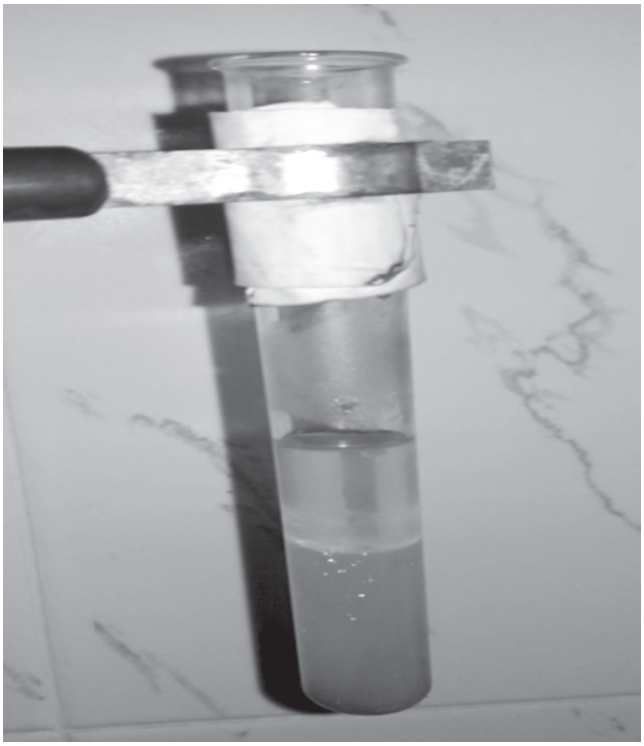

Figure-5: BSUA shows 2+

Discussion

The coexistence of APGN and ARF has been found in many adults over the past decades but are rarely reported in children. The explanation for the co-occurrence of both might be that certain strains have nephritogenic and rheumatogenic potential, which results in both sequels.[8, 9] In most reported cases children initially presented with features of APSGN and later on developed carditis and arthritis, however in the present case we found fever and migratory polyarthritis were the main features before appearance of edema, proteinuria and hypertension.[10] He also presented with both feature simultaneously unlike many other cases with longer duration between the two manifestations. He also developed heart failure following hypertension as a complication of APSGN which resolved by the 7th day of admission leaving no other residual cardiac lesion whereas; almost all the previous pediatric case reports had mitral insufficiency, aortic insufficiency and decreased myocardial functions confirmed by echocardiography.[2, 3, 5, 11 ,12] We diagnosed ARF using the Revised Johns Criteria and treated arthritis with aspirin as the renal function was normal. There was evidence of hypertensive heart failure with cardiomegaly as a complication to APGN that resolved quickly with dietary restriction and diuretics; so the use of corticosteroids was not required. Although the serum creatinine was normal, C3 levels were moderately low with normal C4 that excludes other causes of nephritis such as; acute tubular necrosis and vasculitis.

Conclusion

This case highlights the importance of early recognition of ARF to prevent the possibility of rheumatic heart disease and infective endocarditis especially in developing countries. The co-occurrence of both APGN and ARF might create diagnostic dilemma and delay treatment which can lead to serious consequences.

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