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Post Infectious Glomerulonephritis

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Introduction

A 17-year-old female, presented to acute medical care with history of swelling of both lower limbs and facial puffiness since four days, high coloured urine since one day, GTCS type of seizures each episode lasts for two to three minutes, multiple episodes occurred without regaining consciousness in between seizure episodes (status epilepticus). One week prior to presentation she has fever episodes for one week which is low grade, intermittent not associated with chills, rigors and rash subsided on medications. On general physical examination, she was unconscious, responding to painful stimuli, anasarca present. She was diagnosed denova hypertension, tachycardia, tachypnea with type 1 respiratory failure on oxygen support, urine output was normal for 24 hours and hematuria. Rest of the examination is unremarkable. Laboratory investigations revealed elevated total leucocyte count (23,900) with neutrophilic leukocytosis (82% polymorphs), proteinuria (8.5 grams of protein in 24 hours urine), hematuria (plenty of RBCs), low C3 complement (59mg/dl), normal C4 complement, elevated antistreptolysin-o titer (321 IU/ml) and dyslipidemia. She was started on intravenous antibiotics, diuretic, antiepileptics, oral antihypertensive drugs and other supportive therapy. She was symptomatically improved. She has both nephrotic and nephritic picture, further renal biopsy was indicated, it revealed as endocapillary proliferative glomerulonephritis, consistent with infection related glomerulonephritis. She was discharged with oral antihypertensive, diuretics and antiepileptics were tapered and stopped in 6 weeks duration.

Discussion

Post streptococcal glomerulonephritis is prototypical for acute endocapillary proliferative glomerulonephritis. It is more commonly in males. Skin and more commonly throat infections with particular M types of streptococci (nephritogenic strains) antedate glomerular disease.

Post streptococcal glomerulonephritis due to pharyngitis develops 1-3 weeks after infection and 2-6 weeks after impetigo. Post streptococcal glomerulonephritis is an immune mediated disease involving putative streptococcal antigens, circulating immune complexes and activation of complement in association with cell mediated injury. The classic presentation is an acute nephritic picture with hematuria, pyuria, red blood cell casts, edema, hypertension, and oliguric renal failure, which may be severe enough to appear as RPGN. Systemic symptoms of headache, malaise, anorexia and flank pain (due to swelling of renal capsule). Five percent of children and 20% of adults have proteinuria in nephrotic range. In the first week of symptoms, 90% of patients will have a depressed CH_{50} and decreased levels of C3 with normal levels of C4. Positive cultures for streptococcal infection are inconsistently present (10-70%) but increased titers of ASO (30%), anti-DNAse (70%) or antihyaluronidase antibodies (40%) can help to confirm the diagnosis. Treatment is supportive with control of hypertension, edema and dialysis is needed. Antibiotic treatment for active streptococcal infection should be given to patients.