Case Report

Xanthogranulomatous pyelonephritis

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Two cases of Xanthogranulomatous pyelonephritis are presented . One 8 years old boy with history of previous trauma followed by infection and the other a lady of 45 years with a history of repeated urinary tract infection and both presenting with lumbar mass. Nephrectomy was performed in both cases and histological examination revealed a diagnosis of Xanthogranulomatous pyelonephritis.
Key words: Xanthogranulomatous, pyelonephritis, calyceal

Xanthgranulomatous pyelonephritis (XGP) is defined as a chronic inflammatory disorder of the kidney characterized by a mass originating in the renal parenchyma. The condition has a common association with *Proteus* or *Escherichia coli* infection. *Pseudomonas* species have also been implicated. The kidney is usually nonfunctional. Although most cases of XGP are unilateral, bilateral disease has been reported. Bilateral nephrectomy and chronic dialysis is a treatment option. While Perez et al described successful treatment with partial nephrectomies in one patient, bilateral XGP is usually fatal[1,2,3].

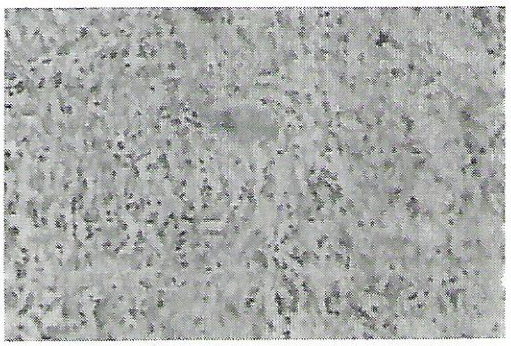
Cases 1

A boy of 8 years had trauma to Lt.kidney two years back resulting in dysuria and pyuria . He was given broad spectrum antibiotics and recovered in two weeks. Now 7-10 days ago, he felt a mass in lumbar region with off and on pain. Urine examination shows many pus cells/HPF. Urine culture was carried out and Citrobactor were isolated. Ultrasound of abdomen shows normal Rt.kidney while left kidney is full of pus, multiple stones and distortion of calyceal system. The base line investigations show Hb 8g/dl, TLC 8,600 with 74% polymorphs. Urea is 41 mg/dl and Serum Creatinin 1.2 mg/dl. IVP shows nonfunctioning Lt. kidney Patient was given medical treatment for a few days and then nephrectomy was performed. The specimen was sent to our department which on histological examination reveals xanthgranulomatous pyelonephritis (Photomicrograph-I)

Case II

A female of 45 years presented with painful lumbar mass . Urine examination shows numerous pus cells and on culture Proteus was isolated. The investigations showed Urea 55 mg/dl and Creatinine 1.9mg/dl. On ultrasound the Lt. kidney is found distorted with a necrotic mass while Rt. kidney normal. IVP shows nonfunctioning Lt. kidney. So nephrectomy was carried out and sent to the pathology department where it was reported as xanthgranulomatous pyelonephritis (Photomicrograph-II).

Photomicrograph I: A section of kidney showing inflammatory cells foamy macrophages and granulomas



Photomicrogeraph II: Xanthogranulomatous pyelonephritis revealing aggregates of foamy macrophages, a few gint cells, lymphocytes and plasma cells.

Discussion:

Xanthogranulomatous pyelonephritis (XPN) was first recognized in 1916 by Schlagenhaufer as a distinct clinicopathological entity(5-ASM). Several individual case reports as well as several small and large series of cases have since been reported[4]. XPN is a rare form of chronic pyelonephritis resulting in diffuse destruction of the kidney There is granuloma formation with typical lipid laden macrophages and giant cells[5,6]. Because of the lipid

rich foamy macrophages, the lesions appear golden yellow and may mimic renal neoplasms, especially renal cell carcinoma[4]. Xanthogranulomatous pyelonephritis usually affects adults, although infants and children are not spared[6]. Women are affected more often than men. Urinary tract obstruction, calculi and infection are the most common associated factors . Patients usually presents with flank pain, fever, chills and mass. Urine analysis reveals pyuria and common associated organisms are Proteus , E.coli or other gram negative bacilli[4,7].

The pathogenesis of Xanthogranulo-matous pyelonephritis is not fully understood, although several mechanisms have been suggested. Most of the cases are associated with obstruction of urinary tract and infection by an organism of low virulence[4,6,7] and similar lesion has been produced experimentally by ligating the ureter in rats followed by intravenous injections of E.coli[8]. However it is still not clear how infection and urinary tract obstruction leads to accumulation of a large number of foamy histiocytes characteristic of XPN. Alternation in lipid metabolism as block in lipid transport, lymphatic obstruction, reaction to specific infective agents and altered immunologic competence are the suggested mechanism[4,9]

The purpose of reporting these cases of Xanthogranulomatous pyelonephritis (XPN) is to emphasize that it is a well known entity but is relatively an uncommon disease so that an average pathologist may not encounter a case in many years.

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