

Case Report

An interesting case report- Xanthogranulomatous Pyelonephritis masquerading as a tumour

Dr. Vinutha Gali¹, Dr. Hemalatha G¹, Dr. Natarajan Suresh¹

¹Department of Pathology, Sree Balaji Medical College and Hospital, No.7 Works Road, Chrompet, Chennai, Tamil Nadu- 600044

*Corresponding author

Dr. Vinutha Gali

Email: vinutha.gali@gmail.com

Abstract: Xanthogranulomatous pyelonephritis is a rare chronic inflammatory disorder of kidney accounting for 1% of cases of pyelonephritis. We report a case in a 67 year old male patient who was diagnosed as emphysematous pyelonephritis and underwent right sided nephrectomy. On histopathological examination it was diagnosed as Xanthogranulomatous pyelonephritis. Patient recovered well and had no complaints during his follow up visits.

Keywords: Xanthogranulomatous pyelonephritis (XGP), Proteus, Escherichia coli, pseudomonas, nephrolithiasis, foamy histiocytes.

INTRODUCTION

Xanthogranulomatous pyelonephritis is a chronic inflammatory disorder of the kidney characterized by a destructive mass that invades the renal parenchyma. It accounts for less than 1% of chronic pyelonephritis [1]. Though common in 5th to 6th decade it may occur at any age. Women are more commonly affected than men. We present a case report of XGP [6].

CASE REPORT

A 67years male patient presented with complaints of right loin pain and fever on and off since three months. He underwent right Pelvicalyceal dilation two weeks back. On examination there was a tender palpable mass in the right loin. Radiological

Investigations revealed an irregularly enlarged right Kidney with a suspicion of malignancy. His laboratory investigations showed elevated urea and creatinine, urine culture was positive for Escherichia coli. Right sided nephrectomy was done and the specimen was sent for histopathological examination. Specimen was received in the histopathology lab, which weighed 235gm with the dimensions, 14x10x7cm with a 6cm ureter attached. On cut section the pelvis was filled with pus and the kidney showed areas of hemorrhage and necrosis. Microscopically there were sheets of foamy macrophages surrounded by inflammatory infiltrate and multinucleated giant cells with focal areas of necrosis. The Histopathology report was given as XGP. The post-operative period was uneventful.

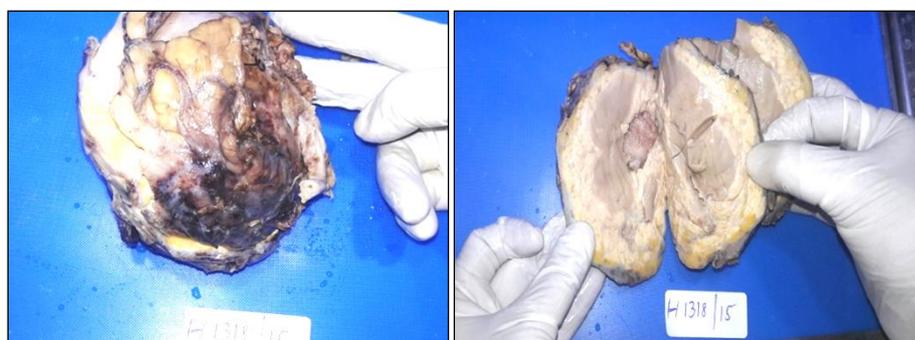


Fig-1: Gross image showing (a) irregularly enlarged kidney and (b) cut section showing loss of pelvicalyceal architecture.

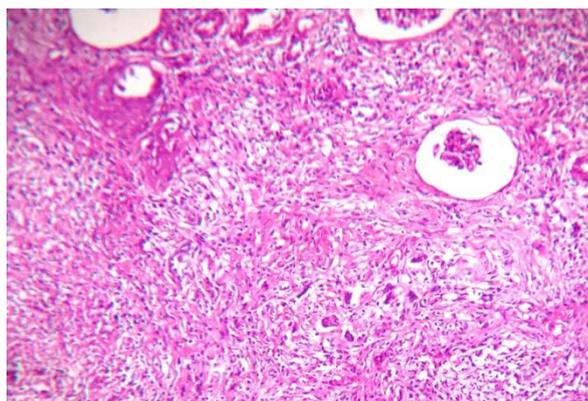


Fig-2: Microphotograph 100x showing inflammatory infiltrate admixed with giant cells and foamy macrophages

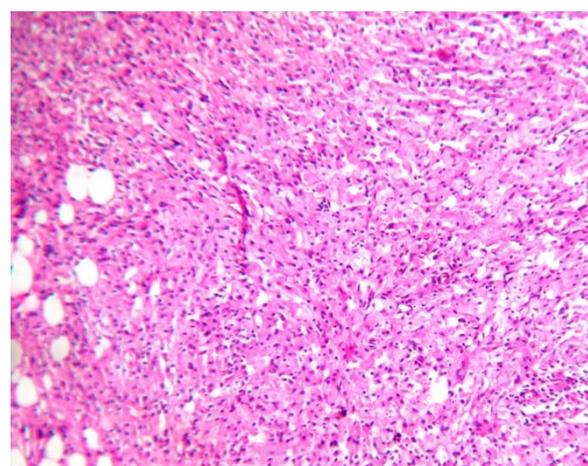


Fig-3: Photomicrograph 100x showing sheets of foamy macrophages infiltrating the perinephric fat.

DISCUSSION

In the present case the initial symptoms was that of urinary tract infection. There was no history of renal calculi and radiological they suspected malignancy. Histopathology was very essential in the diagnosis and the treatment of the patient.

XGP was first described by Schlagenhauser in 1916[1]. It is a rare, serious, chronic inflammatory disorder of the kidney characterized by a destructive mass that invades the renal parenchyma. The exact etiology of XGP is not known. It requires long-term renal obstruction followed by infection and inadequate host response to acute inflammatory response to develop XGP. Organisms such as *Proteus*, *E.coli*, *Pseudomonas* are the most commonly identified organisms in the urine culture of XGP patients [2]. Staghorn calculi develop in 80% of the cases. Diabetes mellitus, Immuno-compromised status may be associated. Abnormal lipid metabolism may also be a causative factor.

XGP has neoplasm like properties i.e., focal tissue invasion and destruction. Adjacent organs such as liver, spleen, Pancreas and duodenum may be involved. Based on this Malek and Elder proposed stages of XGP,

Involving the Kidney, Involving the perinephric fat and involving the retroperitoneal structures [3].

Grossly the effected kidney appears as an irregular mass surrounding the renal pelvis and calyces, Infiltrating and destroying surrounding renal tissue with areas of hemorrhage and necrosis. Superficially it resembles Renal cell carcinoma [4].

Microscopically the sections show sheets of lipid-laden foamy macrophages admixed with acute and chronic inflammatory cells. Focal abscesses may be present. Multinucleated giant cells and spindled fibroblasts are seen surrounding the macrophages.

Clinically the patient appears chronically ill and presents with anorexia, fever with chills, weight loss and flank pain. Fistulization may be seen in some patient. In pediatric patients obstructive calculi is the common presentation [5].

A complete workup is essential to arrive at a definitive diagnosis such cases that includes Complete blood count (leukocytosis and anemia), ESR (elevated), Liver function test (abnormal in 50% of the patients), Renal function test (elevated creatinine), Urine routine

(leukocytes and bacteria), Urine culture and sensitivity (to determine the organism and sensitive antibiotic), Imaging studies (USG- enlarged kidney with multiple hypochoic masses) and finally Histopathology for confirmation of the Diagnosis [6].

CONCLUSION

XGP is a rare non neoplastic, chronic inflammatory condition that may mimic Renal cell carcinoma radiological. Histopathology plays a major role in the diagnosis of XGP.

REFERENCES

1. Schlagenhauser F; Uber eigentumlich staphyloomykosender neiven und des pararenalen bindegewebes. Frankfurt Z Pathol, 1916; 19:139-48.
2. Kuo CC, Wu CF, Huang CC, Lee YJ, Lin WC, Tsai CW, et al.; Xanthogranulomatous pyelonephritis: critical analysis of 30 patients. Int Urol Nephrol, 2011; 43(1):15-22.
3. Malek RS, Elder JS; Xanthogranulomatous pyelonephritis: a critical analysis of 26 cases and of the literature. J Urol, 1978; 119(5): 589-93.
4. Inouye BM, Chiang G, Newbury RO, Holmes N; Adolescent xanthogranulomatous pyelonephritis mimicking renal cell carcinoma on urine cytology: an atypical presentation. Urology, 2013; 81(4):885-7.
5. Kim SW, Yoon BI, Ha US, Sohn DW, Cho YH; Xanthogranulomatous pyelonephritis: clinical experience with 21 cases. J Infect Chemother. 2013; 19(6): 1221-4.
6. Xanthogranulomatous Pyelonephritis. Available from <http://emedicine.medscape.com/article/2050430-overview>.