

Case Report

Spontaneous Nephrocutaneous Fistula in Xanthogranulomatous Pyelonephritis — A Rare Complication

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The formation of fistulous tract between the kidney and adjacent organs is not uncommon while cutaneous fistulization is a rarer occurrence. We present a case of Nephrocutaneous Fistula without prior history of surgery or interventional procedure. Our case involves long standing obstructive pyonephrosis secondary to obstructing calculus at the ureteropelvic junction which led to formation of a fistulous tract upto the skin surface. This patient had complaints of purulent discharge from the right flank region associated with fever spikes since the last 1 month. The cutaneous manifestation in specific location should raise the possibility of underlying renal pathology.

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Key words : Xanthogranulomatous Pyelonephritis.

Fistula formation between the kidney and the skin is an uncommon condition, the common etiologies being secondary to surgery, interventional procedures, trauma¹. Purulent contents tend to follow the pathway of least resistance, which is usually the bowel or some other adjacent organ². However, formation of spontaneous Nephrocutaneous Fistula is a rare occurrence and only limited cases have been documented³. This text describes the features of spontaneous Nephrocutaneous Fistula secondary to longstanding obstructive renal calculus which resulted in Xanthogranulomatous Pyelonephritis.

CASE REPORT

Our patient is a 52-year-old female patient who came with complaints of purulent discharge from right flank region since the last one month. Intermittent spikes of fever were present for which she took medications. There was no history of recent onset Pain, Tuberculosis, Diabetes Mellitus or Hypertension. No history of pulmonary or extrapulmonary tuberculosis was present among her family members. There was no previous surgical history or history of trauma.

On physical examination the patient was oriented and cooperative but had tenderness over the right flank with expulsion of serous, yellowish, foul-smelling discharge. There was fistulous opening present over the right flank region with discoloration of the surrounding skin and formation of nodules adjacent to the orifice due to granulation tissue. The discharge was initially haemorrhagic which later became purulent. Patient had

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Editor's Comment :

- Spontaneous Nephrocutaneous Fistula is a rare entity. In cases of such cutaneous manifestation in the lumbar region, underlying renal communication is to be kept in mind and the patient should be evaluated for the same.

taken different antibiotics for this discharge but the discharge was not relieved. Her vitals were within normal limits. Haematological investigations including serum creatinine were within normal limits with normal total Leucocyte Count and Haemoglobin. Urine microscopy showed 8-10 pus cells/HPF. There was no growth on the Urine culture.

On contrast enhanced CT examination, a large calculus was noted at the ureteropelvic junction resulting in dilatation of the renal pelvis and collecting system. Non enhancing collection was noted within the collecting system and renal pelvis which suggests infection. Non-obstructing renal calculi were also noted at the lower pole of right kidney. A linear tract was noted arising from the upper pole of right kidney and continuing upto the skin surface representing the fistulous tract. CT Urography Examination revealed non-functioning right kidney. This patient underwent a right sided radical Nephrectomy with excision of the fistula tract. On gross pathological examination of the surgically resected specimen, pus was present in the collecting system with chronic inflammatory changes detected in the Renal Parenchyma. On microscopic examination, Foamy Histiocytes, Multinucleated giant cells and Inflammatory cells were noted in the Renal Parenchyma suggesting diagnosis of Xanthogranulomatous pyelonephritis. There were no findings suggestive of Genitourinary Tuberculosis.

DISCUSSION

Spontaneous fistulization from kidney to adjacent visceral organs is not unusual. However, spontaneous fistulization to the skin without previous Renal Surgery or

intervention procedure is rare⁴. Nephrocutaneous Fistulae can develop from either Xanthogranulomatous Pyelonephritis or other chronic Renal Infective process. Penetrating or iatrogenic trauma can also be responsible for this. Patients usually present with local swelling and tenderness in the region of either flank. In rare instances, the fistula can develop which can extend down along the psoas muscle into the inguinal region or thigh resulting in formation of abscess. Pus discharge can be there and occasionally a calculus may be expelled at the external skin site through the fistulous pathway⁵. Rupture of pelvicalyceal system occurs whenever the elevated renal Pelvicalyceal System pressure secondary to an Obstructing Pathology

causes extravasation of urine along the minimally resistant passage within the renal tissue. Maximum number of Pelvicalyceal System ruptures are because of calculi in the proximal ureter. Most cases of Nephrocutaneous Fistula are associated with non-functioning kidneys due to chronic obstruction.

The therapeutic approach for Nephrocutaneous Fistula is decided by the medical conditions of patient, presence of function in the Obstructed Kidney along with the reason for Nephrocutaneous Fistula³. Total Nephrectomy is advocated for Nephrocutaneous Fistula associated with staghorn calculus in a non-functioning kidney, although Heminephrectomy may be attempted in a duplicated kidney if only one segment is involved. Conservative treatment with specific antibiotic coverage for infection is an alternative in debilitated patients⁶. Excision of the tract of fistula is always performed in the similar operation, to reduce the chances recurrence and decrease patient morbidity³. Obstructing renal calculus responsible for the formation of Nephrocutaneous Fistula can remain asymptomatic for a long period of time and usually results in non-functioning kidney.



Fig 1 — Axial CECT image showing hypodense non enhancing collection within the right kidney with adjacent fat stranding

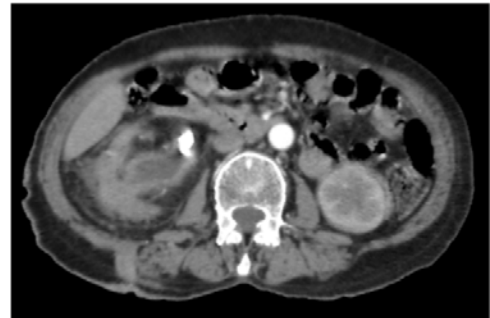


Fig 2 — A calculus seen at the right pelviureteric junction causing hydronephrosis in the right kidney

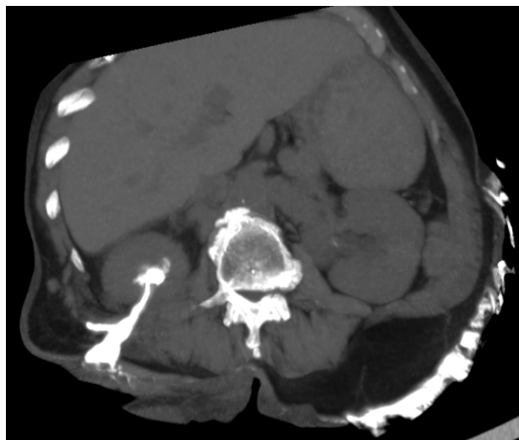


Fig 3 — Oblique axial maximum intensity projection image shows opacification of the nephrocutaneous fistula with positive contrast

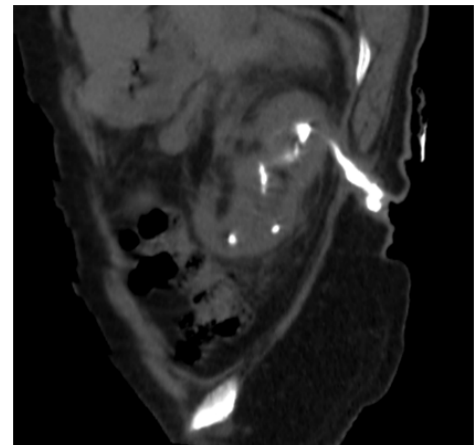


Fig 4 — Oblique sagittal maximum intensity projection image shows opacification of the nephrocutaneous fistula with positive contrast

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