Open Journal of
Clinical & Medical
Case Reports

Volume 7 (2021)
Issue 13

ISSN: 2379-1039

Reno-colic fistula presenting as retroperitoneal and psoas abscess: A case report and literature review

Paul Gravestock*; Anthony Emmanuel; Kamran Haq; David Thomas

***Corresponding Author: Paul Gravestock**
Department of Urology, Freeman Hospital, Freeman Road, Newcastle upon Tyne, NE7 7DN, USA.
Tel: 0191-233-6161; Email: paul.gravestock@nhs.net

Abstract

Fistulous connections between the kidney and colon are rare and have multiple aetiologies, typically as a result of renal pathology. We describe a case of a 49 year old lady with a reno-colic fistula presenting with a retroperitoneal and psoas abscess surgically managed with a good outcome, an associated review of the literature is also presented.

Keywords

renocolic fistula; psoas abscess; retroperitoneal abscess; xanthogranulomatous pyelonephritis.

Introduction

Fistulous connections arising between the kidney and colon are rare and develop due to multiple aetiologies. However, the vast majority of cases arise from a renal pathology rather than a colonic cause and of the former the most common cause is Xanthogranulomatous Pyelonephritis (XPN).

We present a rare case of a Reno-Colic Fistula (RCF) due to a chronic obstructive uropathy secondary to renal calculi presenting unusually as a retroperitoneal and psoas abscess and its subsequent management with a review of the current literature.

Case Presentation

A 49 year old lady presented with a 5-day history of left sided flank pain and swelling following a mechanical fall with no significant surgical or medical history. She was febrile with a tender left renal angle on examination and raised inflammatory markers (WCC 16 and CRP 279). As a result she underwent a Computed Tomography (CT) scan of her abdomen and pelvis which showed an atrophied left kidney with multiple calcifications and a large collection extending from the kidney, through the retroperitoneum and psoas, into the subcutaneous tissues. The possibility of a colo-renal fistula was considered due to the

proximity of the descending colon to the atrophic left kidney (Figure 1).

The patient was admitted under the care of the general surgical team and the psoas abscess treated with ultrasound guided drain insertion and broad spectrum intravenous antibiotic therapy. She improved clinically following radiological drainage and cultures from the pus drained grew a multi-resistant Escherichia coli which guided antibiotic therapy. After discussion with the urology team a CT Intravenous Urogram (IVU) was performed which showed no evidence of functioning renal tissue in the left renal bed or of a patent colo-renal fistula. Her images were reviewed at the urology departmental X-Ray meeting following which she underwent a rigid cystoscopy and left retrograde pyelogram which confirmed a fistulous connection between her left atrophic kidney and descending colon (Figure 2).

Three weeks following her initial presentation she underwent an open benign left nephrectomy, large bowel resection and defunctioning colostomy under the joint care of the general surgery and urology team. The procedure was uncomplicated, during which approximately 5 cm of descending colon containing the fistula was excised. She was discharged home on post-operative day 8.

Final pathology confirmed a markedly atrophied kidney containing multiple renal calculi.

Microscopic evaluation was consistent with end stage nephropathy with no preserved glomeruli present. The resected colon was oedamatous but otherwise unremarkable with microscopic mucousal and serosal inflammation consistent with site of a fistula.

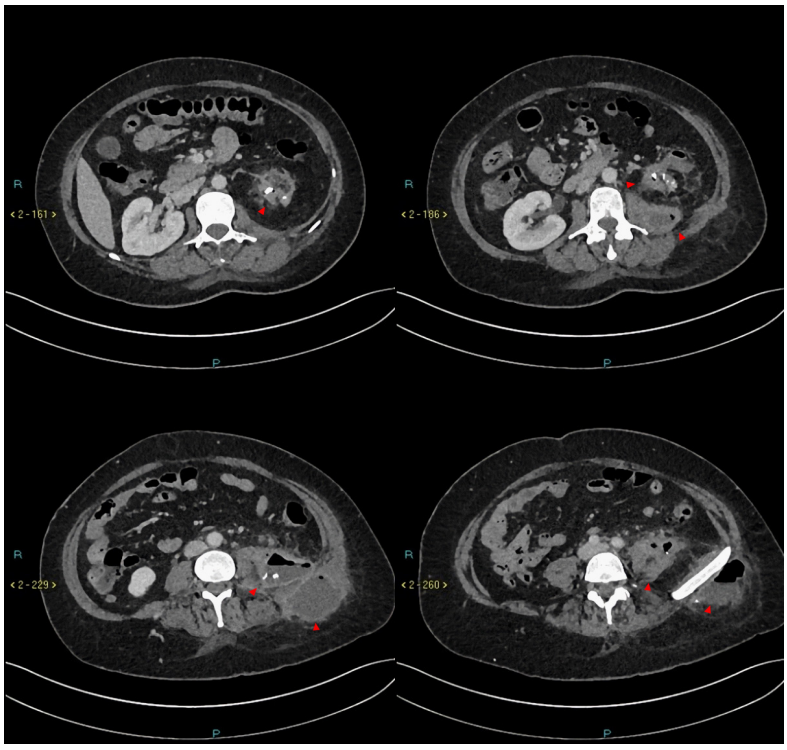

Figure 1: CT Scan performed on admission. Multiple axial sections at the levels L1-4 showing an abnormal left kidney with calculi and associated collection extending into and beyond psoas muscle into subcutaneous tissues.

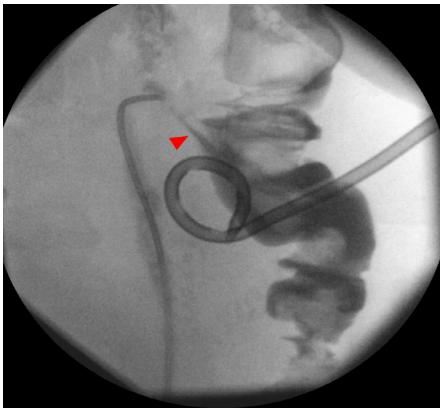

Figure 2: Left sided retrograde images. Taken in theatre following transfer to the Freeman hospital. Contrast from ureteric catheter seen entering colon.

Table 1: Summary of Renocolic fistula aetiology in the literature, 1949 onwards.

Renal Causes			
Type	**Total**	**Cause**	**Total**
Inflammatory	67	Xanthogranulomatous pyelonephritis	23
		Calculous	22
		Non Calculous	15
		Tuberculosis	5
		Schistosomiasis	1
		Actinomycosis	1
Iatrogenic	11	PCNL	3
		RFA Ablation	3
		Misplaced/Retained JJ stent	2
		Prostatectomy	1
		Nephrostomy	1
		Cryoablation	1
		Stereotactive ablative radiotherapy	1
Neoplastic	6	Renal Cell Carcinoma	2
		Transitional Cell Carcinoma	2
		Clear Cell Carcinoma	1
		Pelvic Squamous Cell Carcinoma	1
Trauma	6	Gunshot	5
		Road Traffic Collision	1
Other	4	Polycystic Kidney Disease	4
Colorectal Causes			
Inflammatory	2	Diverticulitis*	1
		Radiation Colitis*	1
Neoplastic	1	Colonic Adenocarcinoma	1
**Severe Co-exisiting renal calculous disease*			
Unable to access article to determine cause			19

Discussion

RCF are a rare entity. In 1949 Abehouse *et al.* performed a review which identified 89 cases known at that time and found that 28% were a result of tuberculosis (TB), 26% due to calculous pyonephrosis and 13% due to non calculuous pyonephrosis [1]. We conducted a further review of the literature published since that report in 1949 and identified 117 additional cases, bringing the total known number of cases to 207 including this one. The aetiologies are summarised in Table 1.

Whilst TB was the leading cause of RCF prior to 1949, XPN now holds that title, accounting for 24% of cases, with TB attributed as the cause in 5% of cases, reflecting its reduced global prevalence.

XPN is a severe form of pyelonephritis characterised by a granulomatous inflammatory infiltrate containing lipid-laden histiocytes or 'foam cells'. It causes progressive destruction and replacement of renal parenchyma and is often found in conjunction with calculus disease [2]. Owing to its granulomatous nature, XPN is thought to have been misdiagnosed as TB previously, particularly in cases where no tubercle bacilli were found. It became increasingly recognised in the 1950's and was formally described by Smout *et al.* in 1963, explaining its absence within the 1949 review [3].

Proportionally cases of calculous and non calculous pyonephrosis as a cause of RCF remain similar accounting for 23% and 16% respectively. Less common causes include iatrogenic (13%) from procedures such as percutaneous nephrolithotomy (PCNL) or radiofrequency ablation (RFA), neoplastic (7%), trauma (6%), most commonly gunshot wounds, and polycystic kidney disease (4%). In 19 of cases identified, typically older ones, it was not possible to access the full text/abstract and determine the cause.

Three cases identified ascribed the cause of fistula as colonic in origin, though two of these patients were noted to have severe co-existing calculous renal disease. One however was a RCF attributed to colonic adenocarcinoma which appears to be definitively colonic in origin.

With such a varied range of aetiology, presentations of RCF vary considerably. CT is usually the first line investigation in these patients and can reliably delineate anatomy and characterise the cause and extent of renal inflammation. Whilst CT can often suggest the presence of a RCF, antegrade or retrograde pyelography are considered the gold standard in its diagnosis [4]. Pyelography is a more invasive investigation but has the advantage of the injection of contrast under pressure which helps to more reliably identify fistulae. CT IVU delineates collecting system anatomy with contrast passively excreted from the kidney, however this is under a lower pressure and if the affected kidney is poor or non functioning, such as in this case, then its utility is limited. A renogram can also be a useful adjunct in determining level of function prior to nephrectomy.

In cases where RCF are not identified or suspected from initial investigations the diagnosis can sometimes be made incidentally in theatre, for example when undertaking a nephrectomy for severe XPN [2].

Treatment and subsequent prognosis is dependant on the aetiology, presentation and co-morbidities of the patient. In this case the patient was septic and unwell on admission but otherwise had no significant past medical history and a healthy contralateral kidney, resulting in a successful outcome. Surgical

management usually entails nephrectomy, excision of fistula and repair or resection of the affected bowel.

This case was a result of severe, chronic, renal inflammation with associated calculi leading to retroperitoneal collection and psoas abscess. Whilst this constellation of pathology has previously been documented as a result of XPN, this was not the case on this occasion, with the characteristic pathological features absent. Hence this is, to our knowledge, the only documented case of a RCF in conjunction with psoas and retroperitoneal abscess, not caused by XPN.

Acknowledgements: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

1. Abeshouse BS. Renal and ureteral fistula of the visceral and cutaneous types; a report of four cases. Urol Cutaneous Rev. 1949; 53: 641-74.

2. McDermott RL, Dowling CM, Alsinnawi M, Grainger R. Incidental renocolic fistula with xanthogranulomatous pyelonephritis. Int J Surg Case Rep. 2013; 4: 222-4.

3. Smout MS, McAninch, LN, Wyatt, JK. Tumefactive xanthogranulomatous pyelonephritis. Br J Urol. 1963, 35: 129-32.

4. Parvey HR, Cochran ST, Payan J, Goldman S, Sandler CM. Renocolic fistulas: complementary roles of computed tomography and direct pyelography. Abdom Imaging. 1997; 22: 96-9.

Manuscript Information: Received: June 19, 2021; Accepted: September 16, 2021; Published: September 30, 2021

Authors Information: Paul Gravestock*; Anthony Emmanuel; Kamran Haq; David Thomas
Department of Urology, Freeman Hospital, Newcastle upon Tyne, UK.

Citation: Gravestock P, Emmanuel A, Haq K, Thomas D. Reno-colic fistula presenting as retroperitoneal and psoas abscess: A case report and literature review. Open J Clin Med Case Rep. 2021; 1792.