

Case Report

Rare cases of rectocutaneous fistulas: basic radiological techniques and presentations

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A case series of uncommon rectocutaneous fistulas is presented. Occurrence of a recto-cutaneous fistula following a skin blister is uncommon, while a scroto-rectal fistula has not been previously reported. We report the cases of recto-cutaneous fistula through a skin blister in a 34 year old man with no history of trauma, and a scroto-rectal fistula in a 28 year old man with pelvic fracture following a motorcycle accident. The third case is an utero-entero-cutaneous fistula in another 24 year old female, secondary to a complicated myomectomy. The classical radiological appearances, basic techniques using non-fluoroscopic contrast study and the need for precise diagnosis are highlighted. The precise diagnosis of a recto-cutaneous fistula is a key factor in eventual management option. These rare cases of recto-cutaneous fistulations may pose a challenge, both in the decision of an appropriate diagnostic procedure, as well as in easy recognition of the salient radiological features. The adoption of a simple technique, devoid of high radiation dose associated with fluoroscopy and basic mobile x-ray equipment is attractive for developing countries where access to sophisticated medical equipment is restricted.

Keywords: Recto-cutaneous, fistula, scroto-rectal, utero-entero-cutaneous, skin blister, radiological, technique

INTRODUCTION

A fistula is an unnatural narrow channel leading from some natural cavity- such as the duct of a gland or the interior of bowels to the surface. Alternatively, a fistula may be a communication between two such cavities where none exist (Black's Medical dictionary).

A rectocutaneous fistula is an abnormal communication between the rectum and the peri-rectal skin. It may be as a result of trauma, pelvic fracture, rectal foreign body, para-rectal abscess or surgery. Faecal material may be discharged through the skin or wound (Medical Dictionary, 2010).

Sometimes, fistulas may accompany drainage of anorectal abscess, or may be common among people with Crohn's disease, tuberculosis, tumors, diverticulitis. Diagnosis may be by physical examination, probe

exploration or use of sigmoidoscope (Anorectal Fistula, 2010). Although radiological procedures have been used frequently to define anatomy of anorectal malformations (Soccorso et al., 2008), there is scarce literature on the radiological appearances of recto-cutaneous fistulas, and in particular scroto-rectal fistula using non-flourosopic contrast study. A previous report in literature, centered on conservative management following radical perineal prostackectomy (Lassen et al., 1996).

We present rare cases of rectocutaneous fistulas in this locality and the simple method of diagnosis as a guide to clinicians and radiologists.

SUBJECTS AND METHODS

Patient 1: A 34 year old male, with a blister at the right side of the buttocks that had persisted for over six months and occasionally drains fluid is presented. Fluid is straw-colored and occasionally offensive. There was

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Figure 1: A recto-cutaneous fistula (connecting a skin blister in the right buttock and rectum)

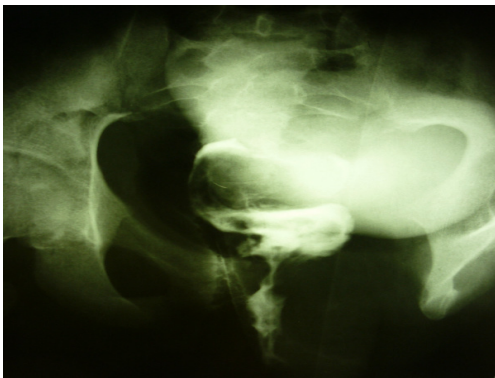


Figure 2: Radiograph showing a scroto-rectal fistula

no history of previous trauma. Patient had prolonged treatment with antibiotics, with no positive result. Laboratory analysis of the fluid specimen yielded no active bacterial growth. Patient was therefore referred for radiological investigation to ascertain presence and extent of fistulation.

Patient 2: A young male of 28 years was involved in a motor cycle accident which occurred 5 months earlier. Previous radiographs taken showed, multiple pelvic fractures with diastasis of the pubic symphysis. A corrective surgery was being planned on account of the pelvic fractures. There were skin abrasions and wounds following the trauma, which had healed prior to our investigation. There was no scrotal injury at the time of the accident. However, patient notices occasional straw-colored, foul smelling fluid from the scrotal wall, which had persisted despite antibiotic therapy. He was therefore referred for a fistulogram to ascertain the extent and origin of the fistula.

Patient 3: A 24 year old nulliparous woman presented with a history of amenorrhoea following a myomectomy for uterine fibroid. In addition, a fistulous opening, which

discharges faecal matter and occasional blood was noted in the anterior abdominal wall. Patient admitted to having a myomectomy, which got infected, and refused to heal despite antibiotics. Secondary surgical repairs were conducted twice with resultant persistent skin blister which produced the fistula. She was referred for a radiological assessment of the extent and course of the fistula.

Technique: Our facility is a general care diagnostic medical centre, with referrals from both primary care and secondary service providers.

A mobile X-ray machine made by Picker Inc, USA with an output of 125KVp and 150mA was used in all cases. No fluoroscopic attachments were available for use. Permission was obtained from the Human Ethics and Research committee of Image Diagnostics to reproduce the images included in this report.

A 10G lubricated rubber canula was inserted into the tips of the blisters and scrotal sinus for patients 1, 3 and 2 respectively. Approximately 100 -150mls of ionic contrast (urographin) was introduced through the cannula in each case. Radiographs were taken during and after the injection in both antero-posterior and oblique projections. The same equipment and techniques were used in all the cases.

RESULTS

In the case 1, Contrast medium introduced through an opening in the right buttocks showed a fairly long fistulous tract, measuring about 2.0cm and communicating with the rectum. The fistulous tract has smooth walls and showed no filling defects (Figure 1). There was no radiological impression of infective processes. The radiological diagnosis is a Recto-cutaneous fistula.

In the second case, contrast medium was introduced through an injured area in the right scrotum. A fairly long fistulous tract which measures about 8.0cm was outlined and in communication with the rectum. The fistulous tract is irregular with associated filling defects. This irregularity is suggestive of associated infective process. A diagnosis of Scroto-rectal fistula was made (Figures 2 and 3).

In the third patient, a rubber catheter was inserted through an opening in the anterior abdominal wall, inferior to the umbilicus. Approximately 100mls of non-ionic contrast was instilled and radiographs were obtained during dynamic injection of contrast. There was a rather long and tortuous utero- entero-cutaneous fistula measuring over 10cm, with significant irregularity. The uterine margins as outlined by contrast medium was significantly ill-defined and irregular (Figure 4) and communicate with both the bowel and skin.



Figure 3: Shows the irregularity of the fistulous tract due to infective process



Figure 4. Utero-entero-cutaneous fistula
(Connecting the uterus, bowel and abdominal wall)

DISCUSSION

Fistulas are abnormal communications between two epithelialized surfaces. An intestinal fistula is an abnormal anatomic connection between a part (or multiple parts) of the intestinal lumen and the lumen of another epithelialized structure or the skin. Intestinal fistula includes many clinical entities. Because fistulas are widely defined, they are generally classified by anatomic, physiologic, and etiologic methods, all of which have treatment implications.

Radiological investigations are frequently performed to diagnose fistulas (Kato et al., 2006; Yu et al., 2004). The exact type of radiological examination would depend on the site of fistulation and the organs involved. For instance, diagnosis of genitourinary tract fistulas usually requires radiologic studies performed with fluoroscopic or cross-sectional modalities. Fistulography is the most direct means of visualizing a fistula and should be considered when feasible (eg, cutaneous fistulas). Intravenous urography and pyelography or ureterography

are mainstays of investigation of the upper tract. Likewise, voiding cystourethrography and urethrography are central to study of the lower tract. Frequently, cross-sectional techniques, in particular computed tomography and MRI are increasingly useful for diagnosis and are considered the primary test in some cases (Kato et al., 2006; Yu et al., 2004).

Descriptively, a fistulogram or Sinogram is a radiological procedure which is aimed at identifying the origin of the fistula/sinus, its pathway and what organs are involved. It is usually a painless procedure often requiring no anaesthesia. During the procedure, a preliminary or plain radiograph is taken to ascertain the anatomical relationships prior to injection of the contrast media. The catheter or tube is then inserted into the opening of the fistula/sinus and contrast is injected into the fistula/sinus through the tube while radiographs are taken.

The tube or catheter is removed. More radiographs may be taken if so desired. The risks/complications with this procedure can include minor pain, bruising and/or infection from the tube insertion. This may require treatment with antibiotics. Less common risks and complications include allergic reaction to the contrast resulting in a rash, hives, itching, nausea, fainting or shortness of breath. Rare risks and complications include perforation of the fistula/sinus opening. This may require surgery and/or antibiotics. In our case series, only two projections, anteroposterior and oblique were taken. The procedures were well tolerated, and no adverse reactions or complications were noted.

Entero-cutaneous fistulas are relatively common complications of penetrating colonic injury such as gunshots and knife stabs (Adesanya and Ekanem, 2004). Diagnostic evaluation to determine the location and type of fistulas and the presence or absence of rectal inflammation is required in peri-anal cases. A fistulogram may be performed in such cases.

Management approaches depend on the type of fistula, the degree of morbidity, and the overall functional status of the patient and vary from conservative observation to aggressive surgical repair (Yu et al., 2004). Frequently, a combined medical and surgical approach to the management of such patients is the optimal treatment plan. In general, medical treatment and stabilization precede attempts at surgical intervention. In patients with all forms of enteric fistulas, sepsis is a major cause of mortality and must be treated aggressively. Surgical treatment is reserved for patients whose fistulas do not resolve with medical and nonsurgical therapy. Aortoenteric fistulas, which mandate emergent surgery when diagnosed, are an exception (Neelu Pai, 2011).

The aim of surgical intervention is to restore GI tract continuity as well as to repair and restore function to the other involved structures. One surgical procedure may not suffice; staged surgical procedures may be required. Individualize treatment based on the patient's overall

medical condition and radiologic and intraoperative findings (Neelu Pai, 2011).

Perianal abscesses must be drained. Superficial, low transsphincteric, and low intersphincteric fistulas are usually treated with fistulotomy and antibiotics. High transsphincteric, suprasphincteric, and extrasphincteric fistulas are usually treated with noncutting setons, antibiotics, and azathioprine or 6-mercaptopurine and, in many cases, infliximab (Schwartz et al., 2001).

Generally, the treatment methodology may be based on anecdotal experience (Schwartz et al., 2001). When indicated, sound surgical principles tailored to the individual case is preferable and should overrule any unproven dogmas (Velmahos et al., 2000).

A simple, reliable and relatively inexpensive procedure using basic radiological equipment and techniques as described in our experience is advocated.

CONCLUSION

The precise diagnosis of a recto-cutaneous fistula is a key factor in eventual management option. These rare cases of recto-cutaneous fistulations may pose a challenge, both in the decision of an appropriate diagnostic procedure, as well as in easy recognition of the salient radiological features. The adoption of a simple technique, devoid of high radiation dose associated with fluoroscopy and basic mobile x-ray equipment is attractive for developing countries where access to sophisticated medical equipment is restricted.

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REFERENCES

- Adesanya AA, Ekanem EE (2004) . A ten-year study of penetrating injuries of the colon.
- Anorectal Fistula (2010). The Merck Manuals online medical library.
- Black's Medical dictionary 41st ED: Fistula p.283
- Diseases of the Colon and Rectum , 47(2):2169-2177
- Kato Y, Wakita T, Kanemitsu Y, Hirabayashi A, Hayashi N (2006). Transanal repair of rectourethral fistula after radical retropubic prostatectomy: a case report]. *Hinyokika Kyo*.52 (5):379-82.
- Lassen PM, Mokulis JA, Kearse WS, Caballero RL, Quinones DC (1996). Conservative management of recto-cutaneous fistula following radical perineal prostatectomy. *Urol.*, 47(4):592-5
- Medical Dictionary (2010). www.medical-dictionary.com. The free dictionary.com
- Neelu Pai (2011). Intestinal Fistulas. Surgical treatment. WEBMD accessed.
- Schwartz DA, pemberton JH, sandborn WJ (2001). Diagnosis and treatment of perianal fistulas in Crohn's disease. *Annals of Internal Med.*135(10):906-916
- Soccorso G, Thyagarayan MS, Murthi GV, Sprigg A (2008). Micturiting cystostography and double urethral catheter technique to define the anatomy of anorectal malformations. *Paediatr Surg. Int*;24:241-3
- Velmahos C, Gomez H, Falabella A, Demetriades D (2000). Operative management of civilian rectal gunshot wounds. Simpler is better. *World J. Surgery* 24(1): 114-118
- Yu NC, Raman SS, Patel M, Barbaric Z (2004). Fistulas of the genitourinary tract: a radiologic review. *Radiographics.* 24(5):1331-52.