

## Appendico-cutaneous Fistula Presenting as a Large Wound: a Rare Phenomenon – Brief Review

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### ABSTRAK

*Inflamasi di daerah apendiks dapat muncul sebagai suatu fistula yang mengeluarkan cairan pada dinding abdomen. Kami melaporkan suatu kasus fistula apendiks kutaneus yang jarang terjadi berupa suatu luka berukuran besar di regio iliaka dekstra. Seorang pasien wanita berusia 60 tahun datang ke unit gawat darurat dengan keluhan luka berukuran besar dan jaringan nekrotik di sisi kanan abdomen. Selapis tipis sekret non-purulen berkilat yang didapatkan dari luka ternyata merupakan aktinomikosis pada pemeriksaan mikrobiologi.*

*Pasien berhasil diobati secara konservatif, yakni dengan drainase per kutaneus dan pemberian antibiotik. Evaluasi lanjut 3 bulan kemudian menunjukkan bahwa keadaan pasien baik dan tidak didapatkan gejala lagi. Apendisititis akut merupakan salah satu penyakit yang cukup penting dalam ilmu bedah umum, tetapi diagnosisnya seringkali samar dan sulit ditentukan oleh para ahli bedah.*

*Apendisititis akut berupa abses di dinding abdomen dan selangkangan merupakan suatu kesatuan klinis yang jarang terjadi. Oleh karena abses yang terjadi mempunyai awitan lambat dan gejala klinis yang sangat samar, maka penegakan diagnosis kasus seperti ini seringkali terlambat. USG dan tomografi dengan kontras merupakan salah satu cara pemeriksaan untuk menegakkan diagnosis serta turut membantu pengobatan.*

**Kata kunci:** *fistula, apendiks, actinomycosis, computed tomography, luka.*

### ABSTRACT

*Appendicular inflammation can present as a discharging fistula on the abdominal wall. We are reporting a rare case of appendico - cutaneous fistula presenting as a large wound over the right iliac region. A 60 year old female reported to the emergency with a large wound and slough on right side of the abdomen. The thin shining serous discharge from the wound revealed actinomycosis on microbiology.*

*Patient was successfully treated conservatively with the help of percutaneous drainage and antibiotics. On follow-up of 3 months, patient is doing well and is asymptomatic. Acute appendicitis is considered one of the elementals of general surgical disease processes, yet its presentation often confounds its diagnosis by most surgeons.*

*Its presentation as abscess in the abdominal wall and groin is a rare clinical entity. Because of insidious onset and subtle clinical signs of resulting abscess, the diagnosis of such cases is often delayed. USG and Contrast enhanced computed tomography are important part of investigations to make diagnose and helps in the treatment.*

**Key words:** *fistula, appendix, actinomycosis, computed tomography, wound.*

## INTRODUCTION

Ruptured appendicitis is not a common cause of spontaneous enterocutaneous fistula. Appendicular fistula is an uncommon complication of acute appendicitis and is the most uncommon type of enteric fistula.<sup>1</sup> It is defined as the primary perforation of the appendix to an adjacent area of the skin, excluding fistulae arising as sequelae of surgically treated appendicitis. Many pathological conditions of the appendix can present as appendico-cutaneous fistulae, and these have been defined to be distinct from those external appendicular fistulae that follow appendectomy for acute appendicitis.<sup>2</sup> In analogy to empyema necessitates, which would require the pleural empyema to penetrate the thoracic wall, the entity was denoted appendicitis necessitates.<sup>3</sup> However, it is rare to see as a case of large wound presented over the abdomen due to appendico-cutaneous fistula which was confirmed on Contrast enhanced computed tomography (CECT).

Acute appendicitis such as those forming extensive abscesses may sometimes become complicated and require a prolonged treatment period. These complications should be kept in mind in order to avoid further sequelae.<sup>4</sup> A search for the presence of intra-abdominal pathology by a thorough clinical and radiological evaluation should be made in all patients with unexplained groin and thigh symptoms with fever and leukocytosis.

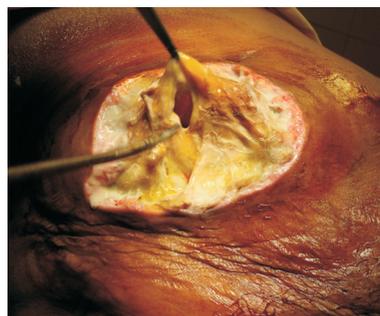
Clinicians should be aware that an abscess may be the manifestation of an intestinal disorder despite minimal abdominal signs and to improve the survival rate, the clinical diagnosis must be pursued aggressively. A review of the literature suggests certain intra-abdominal inflammatory pathologies in the etiology of painful, swollen groin and thigh, such as diverticulitis, acute appendicitis, Crohn's disease, colorectal carcinoma, rectal trauma and primary staphylococcal abscess.<sup>4</sup> Surgery is usually not the first line of management except to deal with the complications. Resection of bowel containing the fistulous tract with end-to-end anastomosis is the procedure of choice when surgical intervention is required.

## CASE ILLUSTRATION

A 60 year old female was admitted with complaints of pain, swelling and a large wound

over the right iliac region. There was history of swelling, present on right side of the abdomen 11/2year back. Pain was first noted 1 month back and was severe in nature. Patient was diagnosed as a case of appendicitis by a private practitioner and was treated conservatively with antibiotics. However, the swelling gradually increased in size and led to formation of a fistula in the form of the large wound. There was persistent foul smelling discharge from the abdominal wound area. Patient was having constipation and there was no fever or vomiting. There was no history of diabetes mellitus, tuberculosis and hypertension.

Vitals were stable. On examination, a discharging sinus was found on the abdominal wall at the right iliac fossa. There was discharge of thin yellowish glistening pus from the sinus with presence of small granules and slough (**Figure 1**). There was no underlying mass. The wound was of 10 x 12 cm in size with overlying slough (**Figure 2**). Rest of the abdomen was normal. Bowel sounds were present.



**Figure 1.** A large wound over the right side of the abdomen with slough



**Figure 2.** There was discharge of thin yellowish glistening pus over the wound with presence of small granules

All investigations were within normal limits except for raised total leukocyte counts. Chest

X-ray was normal. Ultrasonography (USG) revealed a large collection of size 8.3 x 7 cm in the right iliac fossa with internal echoes. CECT scan of the abdomen confirmed a large collection of size 9.2 x 8 cm in the right iliac region with inflammation of the bowel at the ileo-caecal region and of the surrounding tissue with evidence of fistula formation communicating with the abdominal wall (**Figure 3**).



**Figure 3.** Contrast enhanced computed tomography revealed a large collection of size 9.2x8 cm in the right iliac region with evidence of fistula formation communicating with the abdominal wall.

Debridement was done under local anaesthesia and under USG guidance drain was kept in ileo-caecal space. She was put on third generation antibiotic and kept nil orally. Patient was treated conservatively with the help of the percutaneous drainage and antibiotics. She was allowed to take meals orally after three days when she passed stools. Patient responded very well to treatment with complete resolution of the lesion.

## DISCUSSION

Acute appendicitis and its subsequent complications continue to pose a surgical challenge. An intestinal fistula is an abnormal tract that communicates between the intestinal mucosa and another epithelial surface. In enterocutaneous fistula, the other epithelial surface is the skin and intestinal contents are discharged externally on to the skin. An appendiceal fistula is formed by the spontaneous perforation of appendix to adjacent hollow viscera such as the urinary bladder or bowel or to the abdominal wall or skin. Various types of fistulous communication involving the appendix are appendicovesical, appendicointestinal, appendicouterine and appendicocutaneous fistulas. Although appendicovesical and appendicointestinal fistula are rare, appendicocutaneous fistula is even more infrequent and offers diagnostic challenge as the cause of fistula.<sup>5,6</sup>

According to Kjellman, the main mechanism of formation of the fistula is the spontaneous rupture of inflamed appendix into the adjacent bowel or the skin and persistence of fistula is due to the presence of appendiceal calculus or carcinoid tumor or tuberculosis.<sup>6</sup> The common acquired causes of enterocutaneous fistula include strangulated groin hernia especially femoral hernia, tuberculosis and other granulomatous infections, diverticular disease of the bowel, Crohn's disease, carcinoid tumour and carcinoma of the caecum and appendix.<sup>7-9</sup>

Most of the fistulas appeared as subcutaneous abscess which when ruptured or drained persisted as nonhealing sinus. The fistula tends to heal with slight pus or mucinous discharge, which may explain the absence of communication with bowel on sonogram or barium enema. Rarely the tract is large and persists and these patients present with fecal fistula and typical communicating track from skin to caecum can be seen in sonograms.<sup>6</sup> In our case, appendix was not visible on CECT scan probably due to the large collection with inflammatory stranding of the surrounding tissue and bowel; however, a tract was seen communicating with the abdominal wall as fistula.

Most enterocutaneous fistulas in this setting have been complications of surgery for peritonitis due to typhoid ileitis, perforated appendicitis, perforated duodenal ulcer, and penetrating

injuries of the abdomen, septic criminal abortion and intestinal amoebiasis.<sup>10-12</sup> It has also followed incomplete appendicectomy.

In most reported cases, CT has been used as the primary modality for definite diagnosis. Abdominal CT scan helps not only establish the diagnosis but also evaluate the extension of involvement.<sup>13</sup> The drainage of abscess can be achieved by percutaneous approach or by laparotomy based on US and CT findings. There are several reports demonstrating substantial results by percutaneous drainage of the abscess with surgery reserved for those cases wherein percutaneous drainage fails.<sup>14,15</sup>

## CONCLUSION

Fistula formation between the appendix and adjacent organs is a rare condition. Cutaneous fistulas occur even more seldom. Uncomplicated enterocutaneous fistulas usually close spontaneously with conservative management. Surgery is usually not the first line of management except to deal with the complications. USG and CECT with fistulogram plays an important role in diagnose and treatment of the disease.

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