



Original Article

Complex Enteric Fistulae: A Case Series from a Tertiary Care Centre

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ABSTRACT

Background: Enteric fistulae represent a challenging clinical entity due to their varied etiology, complex anatomy, and high morbidity, particularly when associated with chronic infection or delayed diagnosis.

Objective: To describe the clinical presentation, radiological findings, microbiological profile, management strategies, and outcomes of patients with complex enteric fistulae treated at a tertiary care centre.

Case Series: We report two cases of complex enteric fistulae with distinct etiologies. The first case involved an elderly female with a residual hepatic abscess complicated by hepato-colic fistula and multidrug-resistant *Klebsiella pneumoniae* infection, resulting in poor outcome. The second case was a pediatric patient with a congenital colo-cutaneous fistula presenting with chronic abdominal wall discharge and favorable clinical course. Diagnosis in both cases was established using contrast-enhanced computed tomography, which played a pivotal role in anatomical delineation and management planning.

Conclusion: Complex enteric fistulae demonstrate heterogeneous clinical behavior influenced by patient age, etiology, infection status, and nutritional reserve. Early radiological diagnosis and multidisciplinary management are crucial to improving outcomes.

Keywords: Enteric fistula; Colo-cutaneous fistula; Hepato-colic fistula; Computed tomography.

INTRODUCTION

Enteric fistulae are pathological communications between the gastrointestinal tract and another epithelialized surface, posing major clinical challenges due to prolonged sepsis, electrolyte loss, and malnutrition. Most fistulae are postoperative, but spontaneous or congenital variants are rare and often associated with higher morbidity and mortality.¹ Complex fistulae are defined by high output, sepsis, multiple organ involvement, or malnutrition, and require coordinated multidisciplinary management.² While most adult cases are acquired from infection, malignancy, or inflammatory bowel disease, congenital enteric fistulae occur infrequently in children.³ Cross-sectional imaging, particularly contrast-enhanced multidetector CT (MDCT), plays a pivotal role in defining tract anatomy, source, and associated abscesses.⁴ Early diagnosis and multidisciplinary coordination are essential for favorable outcomes. This case series presents two distinct and complex enteric fistulae managed in a tertiary care setting—one hepato-colic fistula secondary to chronic hepatic abscess in an elderly patient and one congenital colo-cutaneous fistula in a child—highlighting the diversity in etiology, radiological appearance, and clinical course.

MATERIALS AND METHODS

This case series was conducted at a tertiary care teaching hospital after obtaining approval from the institutional ethics committee. Informed consent was obtained from the patients or their guardians. Two patients with complex enteric fistulae were evaluated through clinical assessment, laboratory investigations, microbiological analysis, and contrast-enhanced computed tomography (CECT) imaging. CECT abdomen and pelvis were performed using a multidetector CT scanner

with axial, coronal, and sagittal reconstructions to define the tract anatomy, site of origin, organ involvement, and associated abscesses. Laboratory tests included complete blood count, liver and renal function tests, electrolytes, and culture studies. Findings, management, and outcomes were documented systematically.

CASE PRESENTATION

Case 1: A 79-year-old female presented with abdominal pain, generalized weakness, and recurrent infections over several months. Laboratory tests showed anemia, hypoalbuminemia, and mild leukocytosis, while culture of drainage fluid grew multidrug-resistant *Klebsiella pneumoniae*. CECT abdomen and pelvis demonstrated a residual hepatic abscess in the right lobe with a fistulous tract (8.2 mm) communicating with the ascending colon, consistent with a hepato-colic fistula. Despite antibiotics, nutritional support, and endoscopic clipping, the patient deteriorated and succumbed to sepsis.

Case 2: A 13-year-old female presented with a chronic discharging sinus on the left abdominal wall since birth, associated with mild pain and irritation. There was no history of prior surgery or trauma. Routine investigations were normal, with no signs of systemic infection. CECT abdomen and pelvis revealed a 4 mm × 5 cm contrast-filled tract extending from the skin to the posterolateral wall of the descending colon, with minimal surrounding inflammation — suggestive of a congenital colo-cutaneous fistula. The patient was clinically stable, optimized nutritionally, and planned for definitive surgical repair following multidisciplinary evaluation.

Parameter	Case 1	Case 2
Age	79 years	13 years
Sex	Female	Female
Etiology	Acquired (hepatic abscess related)	Congenital
Type of fistula	Hepato-colic	Colo-cutaneous
Imaging modality	CECT abdomen & pelvis	CECT abdomen & pelvis
Outcome	Mortality	Planned surgical correction

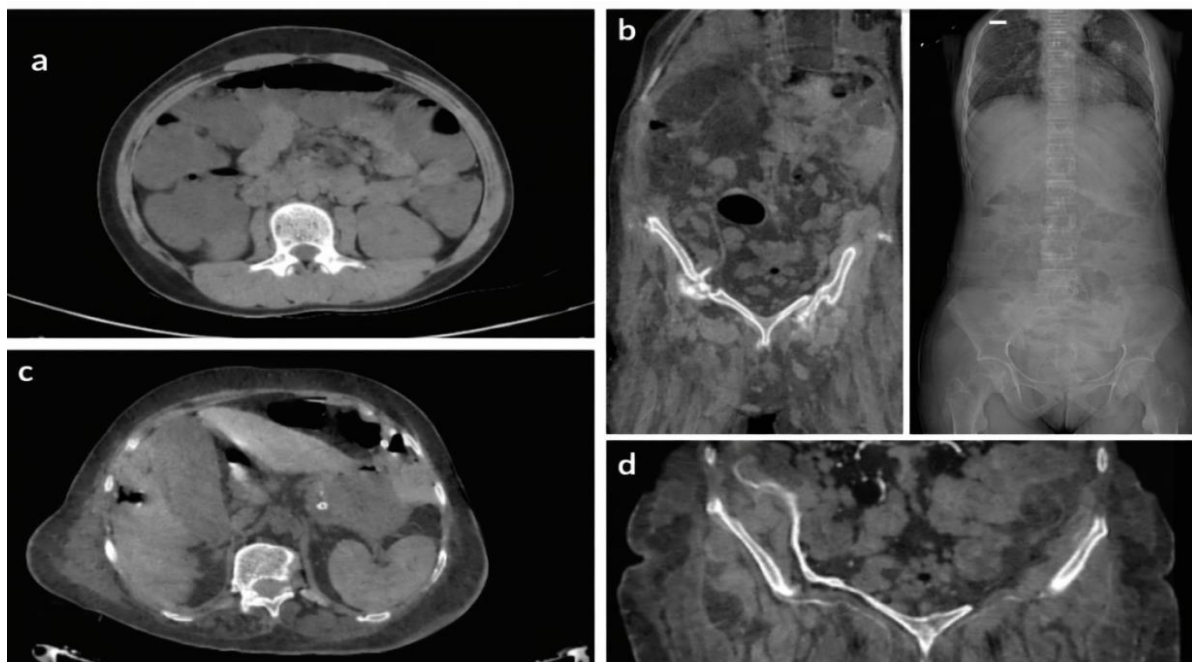


Figure 1. Contrast-enhanced CT images showing hepato-colic fistula, with (a) axial image demonstrating residual air-filled hepatic abscess, (b) coronal image showing a thick-walled fistulous tract extending inferiorly, (c) axial image depicting communication with adjacent bowel loops, and (d) coronal magnified image confirming fistula opening into the ascending colon.

DISCUSSION

Our study demonstrates the wide clinical spectrum of enteric fistulae—ranging from acquired infectious hepato-colic communication to congenital colo-cutaneous presentation—and reinforces the critical importance of imaging and multidisciplinary care in optimizing outcomes.

The first case, a 79-year-old woman with a residual hepatic abscess complicated by a hepato-colic fistula, illustrates a rare acquired variant. Chronic hepatic inflammation and pressure necrosis likely caused fistulous erosion into the colon, a mechanism consistent with previous reports of biliary-enteric or hepatic-enteric communications.⁵ Similar acquired cases

often occur in immunocompromised or elderly patients with delayed abscess drainage.⁶ In contrast, the second case—a 13-year-old girl with a congenital colo-cutaneous fistula—represents a developmental anomaly presenting with localized discharge and minimal systemic illness. Such congenital fistulae may remain unnoticed for years due to low output and lack of infection.⁷ Contrast-enhanced CT was pivotal in both our cases. It delineated the hepatic-colonic communication in the first patient and identified the congenital colo-cutaneous tract in the second. Similar findings have been emphasized in studies where MDCT and MRI provided superior fistula characterization and guided therapy.⁸ CT angiography also helps exclude vascular-enteric variants such as aorto-enteric fistulae.⁹ In our study, both cases required multidisciplinary management integrating radiology, surgery, and infection control. The elderly patient's outcome was poor due to malnutrition and multidrug-resistant *Klebsiella pneumoniae*, aligning with prior evidence linking sepsis and hypoalbuminemia with mortality.¹⁰ Conversely, the pediatric patient had a favorable prognosis after nutritional optimization and planned surgical correction, consistent with reported outcomes in congenital fistulae managed electively.¹¹ Conservative therapy, including nutritional support, drainage, and infection control, remains the first line, with spontaneous closure achieved in 40–60% of low-output fistulae.¹² Surgical repair is indicated for persistent or high-output cases after stabilization.¹³ Advanced adjuncts such as negative pressure wound therapy (NPWT) further enhance healing and reduce mortality.¹² As highlighted by multiple reports, optimal outcomes depend on the synergy of radiologists, surgeons, and nutritionists in a tertiary setting.¹⁴ Our study reinforces that early radiological diagnosis, aggressive infection control, and nutritional rehabilitation form the triad for successful management.

CONCLUSION

This case series highlights the heterogeneous nature of complex enteric fistulae, demonstrating that clinical outcomes are largely influenced by etiology, patient age, infection status, and nutritional reserve. Acquired fistulae associated with chronic infection and sepsis, as seen in the elderly patient, are linked with poor prognosis and higher mortality, whereas congenital fistulae in younger patients tend to have a more favorable outcome when appropriately managed.

Contrast-enhanced computed tomography plays a pivotal role in accurate diagnosis, anatomical delineation, and treatment planning. Early recognition, prompt infection control, and adequate nutritional support, combined with a multidisciplinary approach, are essential to improving patient outcomes.

Overall, timely radiological evaluation and coordinated care remain the cornerstone in the management of complex enteric fistulae.

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