Case Report

Journal Of Clinical & Medical Images Case Reports

Open Access, Volume - 1

Hepato-Cutaneous Fistula: A rare delayed complication after healed Pyogenic Liver Abscess

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Received Date : Oct 20, 2021
Accepted Date : Nov 24, 2021
Published Date : Dec 01, 2021
Archived : www.jcmimagescasereports.org

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Abstract

Hepato-cutaneous fistula is a rare clinical entity which develops commonly after a complication due to hydatid disease of the liver. Few cases of it have also been reported following percutaneous catheter drainage of liver abscess due to actinomyces, burkholderia pseudomallei and entamoeba histolytica. In case of hydatid cyst of liver, it develops following spontaneous rupture or some intervention. In rest other, it always follows the percutaneous catheter drainage as a part of active underlying diseases process. Here, we report a case of Hepato-cutaneous fistula which develops four weeks after successful treatment of pyogenic liver abscess with complete resolution of abscess cavity.

Keywords: Hepato-cutaneous fistula; liver abscess; cutaneous fistula; percutaneous catheter drainage.

Introduction

Liver abscess is one of the commonest causes of morbidity and mortality among people living in the tropical countries. However, its incidence in the developed world is also on the rise [1]. Liver abscess may be either pyogenic, amoebic, mixed and rarely due to fungal also. Percutaneous catheter drainage for pyogenic liver abscesses is now the standard of care for most of the symptomatic cases [1, 2]. The common complications of liver abscess described in standard literature are bacteraemia, sepsis, rupture into peritoneal and pleural cavity [3, 4]. Hepato-cutaneous (HC) fistula is one of the rare complications and most of the time reported in a cases of hydatid disease of liver. Few random cases of HC fistula in the patients with amoebic liver abscess and liver abscess due to actinomycosis has also been reported [5-8]. But in all these cases it presented as a persistent discharge after the treatment with percutaneous drainage [5-8]. Here we report a case of hepato-cutaneous fistula which developed in a pyogenic liver abscess one month after successful treatment with complete resolution of abscess cavity.

Case Report

A 40-year-old gentleman came in outpatient department with complaints of pus discharge for three days from the right subcostal area. Amount of pus was minimal but enough to soil his cloth. As per history and records provided by the patient, he was a follow-up case of pyogenic liver abscess and was discharged about one and half month back from our hospital after successful treatment. On Examination, patient's vital parameter was normal and there was sub centimetric sinus like opening with granulation tissue at the right subcostal area near anterior axillary line (**Figure-1a**, **1b**). As per history and documentary evidence this was probably the site from where percutaneous catheter drainage was done. Patient was admitted for further evaluation. His detailed previous record in the hospital suggests that he came in emergency department of our hospital more than one and half month back for chief complaints of pain in right upper abdomen and fever with chills and rigor for 7days.The patient was known chronic alcoholic for last fifteen years. On clinical examination his temperature was 101° F, pulse rate 110/min, blood pressure was 126/74 mmHg, respiratory rate was 28/min. Mild icterus

Citation: Abida Sabreen, Shardool Vikram Gupta, Rajeev Ranjan, Jitendra Kumar, Sidharth. Hepato-Cutaneous Fistula: A rare delayed complication after healed Pyogenic Liver Abscess. J Clin Med Img Case Rep. 2021; 1(1): 1030.

was present. On systemic examination he had tenderness in right hypochondrium with guarding. Liver was enlarged and palpable till 7cm below costal margin. At that time of admission his total leucocyte counts were raised i.e., 27,000/mm3, haemoglobin was 8.5 g/dL. Liver function tests showed raised serum bilirubin 3.7 mg/dL, raised alkaline phosphatase 436 IU/L, mildly raised liver enzymes (ALT 234 IU/L and AST 212 IU/L). On admission, he was diagnosed with Type2 Diabetes Mellitus and glycaemic control was achieved with insulin. Rest of the laboratory parameters were within normal limit.

Ultrasound abdomen revealed enlarged liver span (19 cm) with a round mix-echoic lesion of 11.9x11.3 cm in the right lobe of the liver (780 mL volume) suggestive of liver abscess. Under USG guidance percutaneous catheter drainage of liver abscess was done which drained about 500 ml of thick yellow colour pus. The pus culture report isolated the E. coli and antibiotics regime including metronidazole was started accordingly. The catheter was removed following six days of the treatment when it stopped draining the pus and ultrasound abdomen showed collapsed abscess cavity. At the time of discharge patient was advised a course of antibiotics for further ten days. His recovery during follow-up was uneventful.

On his current admission, the ultrasound abdomen was suggestive of healed abscess cavity in segments 4 and 8 with tubular tract up to skin surface (**Figure 2**). We obtained MR-Fistulogram which revealed a T2 hyperintense lesion with thick enhancing wall in segment 4 of the liver measuring about 16x10x14 mm with a tract arising from its anterior wall and extending up to skin surface in right hypochondrium. The length of the tract was about 55 mm and 5-6 mm in thickness (**Figure 3**).

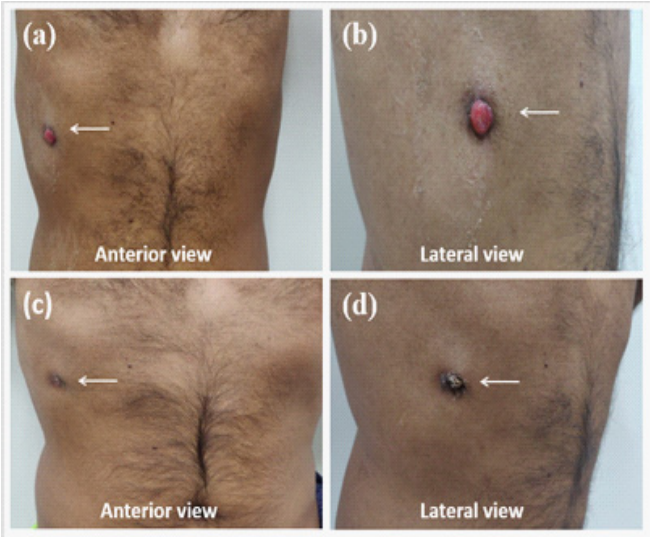

Figure 1: *Hepato-cutaneous fistula in various stages of healing (arrow); (a), (b): Granulation tissue; (c), (d): Healed scab.*

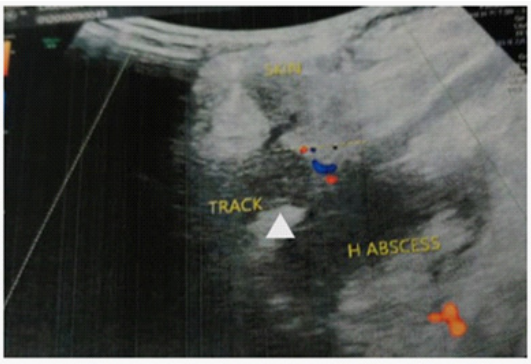

Figure 2: *Ultrasound of liver showing hepato-cutaneous fistula tract (arrow head).*

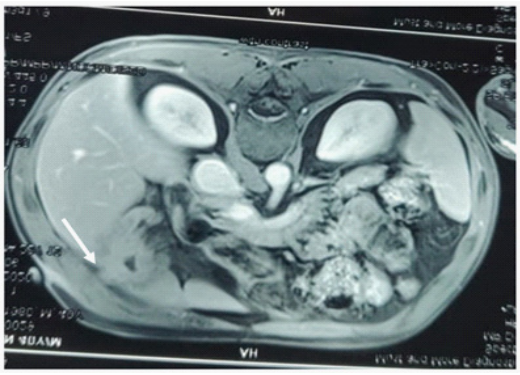

Figure 3: *MRI image of liver abscess cavity showing hepato-cutaneous fistula tract (arrow).*

His pus culture isolated mix organism mainly E. coli and streptococcus spp. He was managed conservatively by irrigation lavage of fistula track with normal saline thrice daily along with chosen parenteral antibiotic (Ceftriaxone 1 gm. twice daily). The patient had pus discharge for about seven days which then gradually resolved. No other symptoms or signs were present during this period. The fistulous tract healed spontaneously in 2 weeks (**Figure-1c**, **1d**).

Discussion

HC fistula is an abnormal communication between liver (usually a cyst or cavity) and abdominal wall without communication with the biliary tract [9]. It is not a common finding and reported most of the time as a complication of hydatid disease of the liver. HC fistula in hydatid cyst of liver may develop either spontaneously or post intervention like percutaneous aspiration or surgery [10, 11]. These fistulas are usually treated by non-operative management or surgical interventions like excision of the fistula tract along with pericystectomy [10-12].

Rare cases of HC fistula with pus discharge have also been reported in patients of liver abscess due to actinomyces of liver and Burkholderia pseudomallei [7, 8-13]. All these cases followed the percutaneous needle aspiration or catheter drainage and managed successfully with antibiotics and conservative approach [7, 8-13]. A case of HC fistula reported was a result of percutaneous aspiration of polycystic disease of

liver which was managed successfully with laparoscopic approach [9]. Few rare cases of HC fistula also reported which developed after the intervention done in the patient of malignancies like hepatocellular and ampullary carcinoma [14, 15].

Crane et. al. in year 1972 and Priyadarshi et. al. in the year 2018 published a large case series of patients with amoebic liver abscess and each of them reported two case of HC fistula following the percutaneous drainage of abscess cavity [5, 6]. These were managed by multiple session wide bore catheter drainage, aggressive saline irrigation, and broad-spectrum antibiotic [6]. In our case, HC fistula developed in pyogenic liver abscess and that's too after healing of the abscess cavity. We didn't find this kind of case so far, reported in available literature.

Conclusion

Hepato-cutaneous fistula is an uncommon complication after percutaneous pigtail drainage of liver abscess. Most of the cases can be managed conservatively, however some patients may require formal surgical excision of the tract.

Declaration of Competing Interest

The Authors declare no conflict of interest.

Financial disclosure

None to report.

Acknowledgements

None.

Conflict of Interest

None.

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