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Case Report

Surgery Section

Inguinal Canal Metastasis in a Case of Cholangiocarcinoma: A Case Report

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ABSTRACT

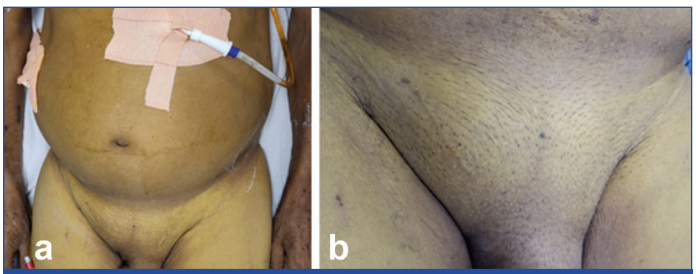
In adults, inguinal hernias are commonly encountered, and in rare instances, metastatic masses may develop within the hernia sac. Here, the authors report the case of a 75-year-old male who presented with a two-month history of jaundice, pruritus, and dark urine, along with a one-month history of right inguinal swelling. He had a prior history of bilateral inguinal hernioplasty performed 15 years earlier. On examination, the patient had abdominal distension with ascites and a 3×3 cm non-reducible right inguinal swelling without a cough impulse. Contrast-Enhanced Computed Tomography (CECT) of the abdomen revealed ill-defined, minimally enhancing lesions involving the Common Bile Duct (CBD) and Common Hepatic Duct (CHD), resulting in Intrahepatic Biliary Radical Dilatation (IHBRD) and metastatic lymphadenopathy, suggestive of Type IV cholangiocarcinoma. Additionally, an irregular, thick-walled, heterogeneously enhancing lesion measuring 3×3 cm was noted within the hernia sac, suggestive of a metastatic deposit. Imaging and histopathological evaluation of the hernia sac lesion were performed to establish the diagnosis and guide management. The patient was subsequently managed with palliative chemotherapy; however, the prognosis remained poor due to advanced metastatic cholangiocarcinoma. The present case is noteworthy as it represents a rare presentation of cholangiocarcinoma metastasising to the inguinal canal through a hernia sac-a phenomenon scarcely documented in medical literature. It highlights the importance of maintaining a high index of suspicion and performing histopathological evaluation of atypical hernia sac contents, particularly in patients with underlying malignancy.

Keywords: Hernial sac deposits, Hepatobiliary malignancy, Metastatic hernia sac tumour, Histopathological examination of hernia sac

CASE REPORT

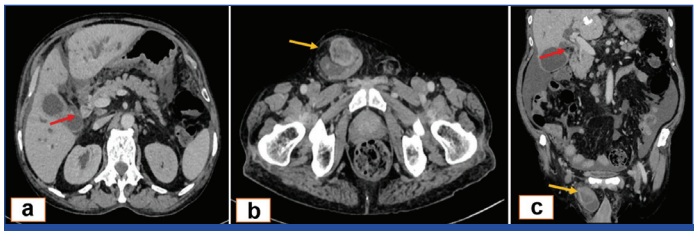
A 75-year-old male presented with yellowish discolouration of the eyes, skin, and urine, associated with pruritus and passage of clay-colored stools for the past two months. He also complained of swelling in the right inguinal region for one month. The patient had undergone bilateral inguinal hernioplasty 15 years earlier.

On examination, the patient was vitally stable, deeply icteric, and had a normal sensorium. Abdominal examination revealed distension due to ascites, with a positive fluid thrill. A 3×3 cm non-reducible swelling was noted in the right inguinal region, with no associated cough impulse [Table/Fig-1].



[Table/Fig-1]: a) Clinical photograph showing yellowish discolouration of entire body surface, abdominal distention due to gross ascites with pigtail catheter for percutaneous biliary drainage; b) Visible swelling in right inguinal region.

Laboratory investigations revealed deranged liver function tests, coagulopathy, and hypoalbuminaemia. The patient was initially managed with intravenous antibiotics and hepatoprotective measures. The CECT of the abdomen demonstrated ill-defined, minimally enhancing lesions involving the CBD, CHD, the confluence of the right and left hepatic ducts, the origins of the right and left hepatic ducts, and the cystic duct. These findings resulted in IHBRD and metastatic lymphadenopathy, consistent with Type IV cholangiocarcinoma according to the Bismuth-Corlette classification [1]. Additionally, an irregular, thick-walled, heterogeneously enhancing lesion measuring 3×3 cm was identified within the hernia sac, suggestive of a metastatic deposit [Table/Fig-2].

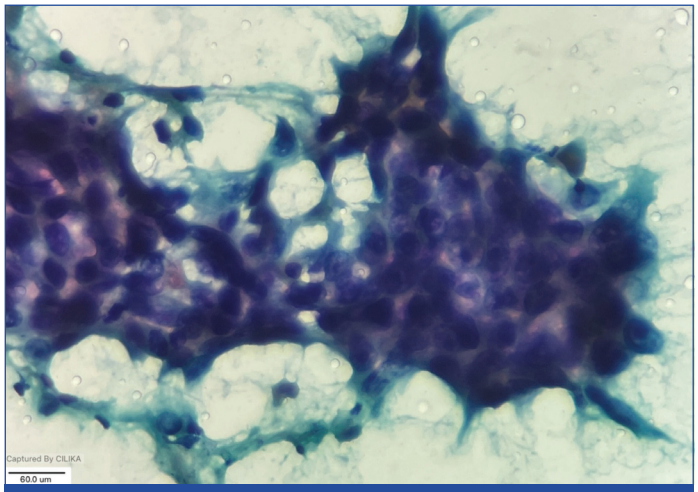


[Table/Fig-2]: Contrast-enhanced CT abdomen and Pelvis (A): Axial View: Red arrow shows ill-defined minimally enhancing lesions along the biliary tree, along the well-distended gall bladder with heterogeneously enhancing wall thickening. (B): Axial View: Arrow shows an Irregular, thick-walled, heterogeneously enhancing lesion within the hernial sac in the right inguinal region. (C): Coronal Section: Red arrow showing cholangiocarcinoma and yellow arrow showing Right inguinal hernia sac metastasis.

Diagnostic and therapeutic ascitic tapping was performed due to dyspnoea; however, cytological examination of the ascitic fluid did not reveal malignant cells. To relieve jaundice, Percutaneous Transhepatic Biliary Drainage (PTBD) was performed after correction of coagulopathy. Following the procedure, a marked improvement in liver function was observed.

One week after PTBD, total and direct bilirubin levels decreased from 10 mg/dL and 8 mg/dL to 3 mg/dL and 2 mg/dL, respectively. Liver enzymes also showed significant improvement, with AST decreasing from 740 U/L to 89 U/L, ALT from 436 U/L to 90 U/L, and ALP from 484 U/L to 124 U/L. Ultrasound-guided Fine-Needle Aspiration Cytology (FNAC) of the right inguinal swelling revealed a metastatic deposit from an epithelial malignancy [Table/Fig-3]. The episode of cholangitis was managed with PTBD and intravenous antibiotics. Given the presence of metastatic disease, the patient was initiated on palliative chemotherapy with gemcitabine (1000 mg/m^2) and cisplatin (25 mg/m^2), administered intravenously in a biweekly regimen.

The patient is currently receiving the third cycle of chemotherapy and is scheduled for repeat CECT of the abdomen and pelvis, along with Positron Emission Tomography-Computed Tomography (PET-CT), to assess treatment response.



[Table/Fig-3]: FNAC showing moderately cellular smears, with cells arranged in loose groups and clusters-round to oval, with scant to moderate cytoplasm. The nucleus shows overlapping and overcrowding and is vesicular with prominent nucleoli. Cytological features suggest a Metastatic deposit from an Epithelial malignancy.

pancreas, ovaries, prostate, appendix, peritoneum, endometrium, and stomach have been documented [7]. In rare instances, a hernia sac mass may be the initial manifestation of an undiagnosed primary malignancy [6,7].

Hernia sac tumours are classified into three types: extra-saccular tumours, which lie outside the sac but extend through the hernia defect; saccular tumours, which involve the sac or associated spermatic cord structures; and intrasaccular tumours, which consist of an organ located within the sac [7]. The tumour observed in the present case corresponds to the saccular type. These tumours are most often attributed to gravity-assisted spread from intra-abdominal malignancies [7].

Metastasis to the hernia sac from extrahepatic cholangiocarcinoma is particularly rare, with only a limited number of cases reported in the literature [Table/Fig-4] [6,8-11]. Cases of Squamous Cell Carcinoma (SCC) in which the urinary bladder herniated into the inguinal canal have been reported by Katsourakis A et al., [12] and Qaiyumi Z et al., [13]. Metastatic squamous cell carcinoma originating from the bladder and spreading to the hernia sac was documented by Best IM et al., [14].

To avoid missing occult metastatic disease, microscopic examination of hernia sac specimens is recommended [5]. The College of American Pathologists (CAP) advises microscopic examination of all abdominal hernias and pathological evaluation of all resected hernia sacs. However, the decision to perform microscopic examination of macroscopically normal inguinal hernia sacs may be left to the discretion of the pathologist or institution [6].

Article	Hernia count	Malignant diagnosis in hernia sacs n (%)	F/M	Median age	Known cancer history	Primary tumour site
Seçinti İE et al., [6]	455	10 (2.20)	6/4	60.7	70%	Ovary 50%, vulva 10%, appendix 10%, mesothelium 30%
Wang T et al., [8]	1,426	10 (0.7)	5/5	76.5	70%	Cholangiocarcinoma 10%, CLL 20%, prostate 10%, peritoneum 10%, ovary 20%, endometrium 10%, pleomorphic sarcoma 10%, pancreas 10%
Val-Bernal JF et al., [9]	8,435	12 (0.14)	4/8	67	50%	GIS 50%, gynecological 25%, lung 8.3%, peritoneum 8.3%, unknown 8.3%
Zhang D et al., [10]	4,301	21 (0.49)	7/14	65	66.7%	GIS 52%, pancreatobiliary 24%, gynecological 24%
Topal U et al., [11]	556	9 (0.61)	7/2	60	66.7%	GIS 55.5%, ovary 22.2%, epididymis 11.1%, breast 11.1%

[Table/Fig-4]: Literature review of studies involving hernia sac malignancies [6,8-11].

DISCUSSION

Cholangiocarcinoma is the second most common primary hepatic malignancy after hepatocellular carcinoma and accounts for approximately 20% of mortality related to hepatobiliary malignancies in India [2]. Intrahepatic Cholangiocarcinoma (ICC) arises from the epithelial cells of the intrahepatic bile ducts.

The anatomical site of origin distinguishes ICC from gallbladder carcinoma and Extrahepatic Cholangiocarcinoma (ECC), which includes perihilar and distal types. Prognosis, histopathological characteristics, and associated risk factors differ significantly between ICC and ECC [3].

Cholangiocarcinoma spreads to the liver, lungs, bones, and peritoneum via the haematogenous route and to regional lymph nodes through the lymphatic system. Typically, intrahepatic metastasis and advanced distant dissemination of ICC occur through direct invasion, with common metastatic sites including the lungs, bones, brain, breast, colon, skin, and blood vessels [4].

Although inguinal hernias are frequently encountered in middle-aged and elderly individuals, metastatic deposits within the inguinal hernia sac are rare [5]. Most intrasaccular metastatic masses are secondary to colonic malignancies and may be misdiagnosed as incarcerated inguinal hernias [5].

Primary malignancies arising within the hernia sac include umbilical cord liposarcoma, urachal carcinoma, and malignant mesothelioma [6]. A malignant tumour identified within a hernia sac may also represent metastatic disease. Metastatic involvement of the hernia sac most commonly originates from colorectal carcinoma, with malignant epithelial tumours comprising the majority of reported cases [7]. Additionally, metastases from malignancies of the

CONCLUSION(S)

Cholangiocarcinoma with metastasis to the inguinal hernia sac is an extremely rare entity. In cases presenting with irreducible inguinal swelling, the possibility of hernia sac tumours should be considered. Imaging and microscopic examination of grossly abnormal hernia sac specimens are strongly recommended to ensure accurate diagnosis and appropriate management.

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