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Case Report

Surgery Section

Pancreatic Malignancy Masquerading as a Splenic Lesion: A Case Report

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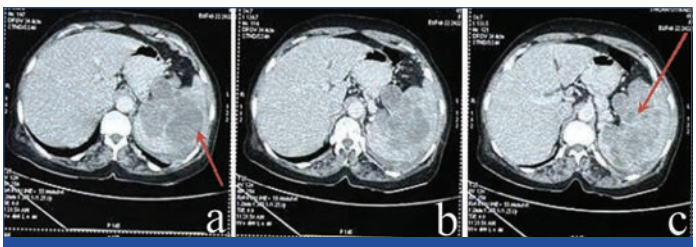
ABSTRACT

Splenic metastases are rarely encountered in routine clinical practice, and they may be due to various reasons, such as anatomical or immunological factors. Splenic metastasis is usually seen in the setting of disseminated disease. It is rare for pancreatic malignancy to present as a predominant splenic mass. Hereby, the authors present a case of 65-year-old female who presented with a painful lump in the left hypochondrium, along with loss of appetite and weight loss over the past two months. Preoperative Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) scans diagnosed patient with a primary splenic tumour. She underwent en-bloc resection of the spleen and adherent pancreatic tail, along with station 9d and 10 lymph nodes. Histopathological Examination (HPE) with Immunohistochemistry (IHC) revealed a small subcentimeter primary lesion in the pancreatic tail region with splenic extension and multiple metastases, including areas of central necrosis. Patient was then put on gemcitabine-based chemotherapy. Preoperative imaging modalities such as CT and MRI scans, as well as tumour markers, also failed to reveal the pancreatic lesion. The present case highlights a rare clinical scenario of a hidden pancreatic lesion with large and multiple splenic metastases. Splenic lesions can create diagnostic confusion between benign and malignant lesions on imaging, and it can be challenging to differentiate between primary or secondary lesions. When there is suspicion of splenic metastasis, particularly isolated secondaries, the pancreas should also be considered in the differentials, especially when no other primary is identified on routine imaging.

Keywords: Isolated splenic metastasis, Metastasis, Spleen, Splenectomy, Synchronous

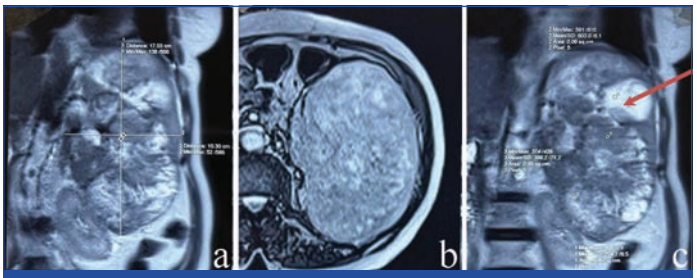
CASE REPORT

A 65-year-old female presented with left-sided, non radiating dull aching abdominal pain, loss of appetite, and significant weight loss (14 kg in two months) for two months. She had no bowel symptoms. Patient has had systemic hypertension for the past 10 years and has been on regular treatment. Three months ago, she was diagnosed with deep vein thrombosis of the bilateral lower limb and has been taking dabigatran tablets since then. On examination, the patient had stable vitals, and patient was moderately built and nourished. Abdominal examination revealed massive tender splenomegaly, extending up to the umbilicus. No other mass was palpable, and there were no perirectal deposits or melena on rectal examination. Patient's CT scan showed an enlarged spleen (15 cm) with multiple hypodense non enhancing lesions, the largest measuring 5×5 cm, pushing the left kidney anteriorly. A collapsed left lung with mediastinal shift to the left was also noted. Possibilities of a hydatid cyst or hypoenhancing mass were suggested [Table/Fig-1a-c].

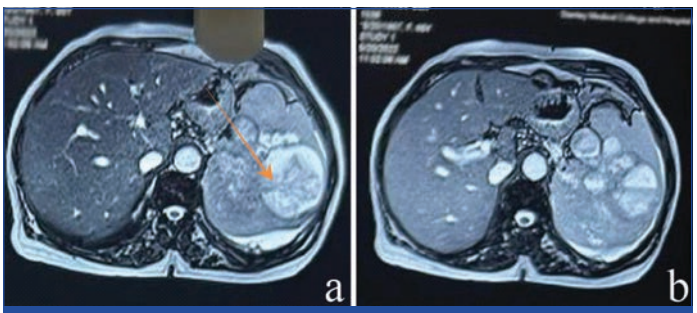


[Table/Fig-1a-c]: CT scan-portal phase showing multiloculated solid and cystic lesion in the spleen (red arrow).

On further evaluation with MRI, a well-delineated multiloculated cystic lesion measuring 5×5.5×6 cm in the upper pole of the spleen with hypointense linear structure (membranes) was observed. Splenomegaly with diffuse altered signals with a few cystic areas was seen, indicating a hydatid cyst or tumour [Table/Fig-2a-c, 3a,b]. Patient's upper Gastrointestinal (GI) endoscopy and colonoscopy were normal. Her hydatid serology and tumour markers (Cancer Antigen (CA) 19-9- 22.95 U/mL, Carcinoembryonic Antigen (CEA)-3.5 ng/mL) were normal. Follow-up venous doppler revealed partial recanalisation of the lower limb veins. Patients blood work-up for a possibility of lymphoma or leukemia was also negative.



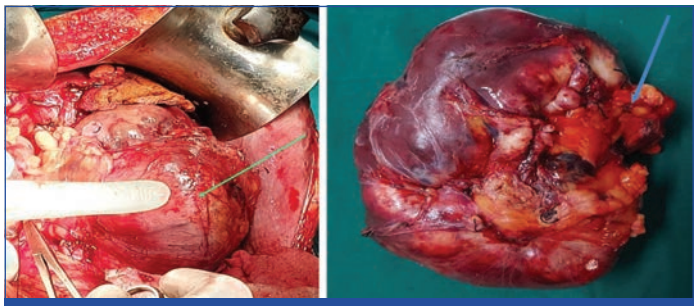
[Table/Fig-2a-c]: MRI showing splenomegaly with diffuse altered signals and cystic lesions (red arrow).



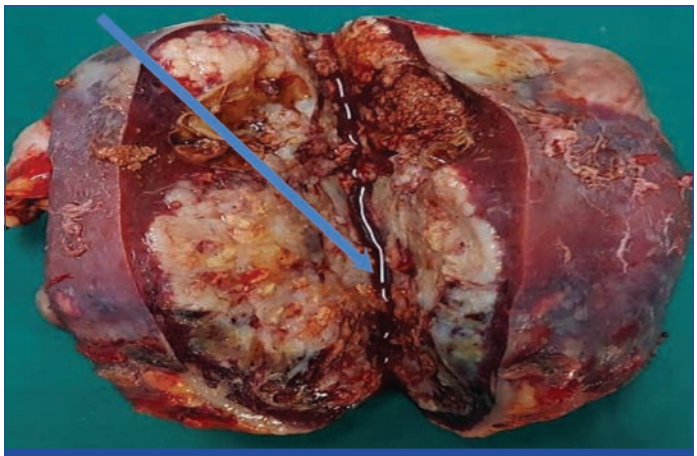
[Table/Fig-3a,b]: MRI- showing solid cystic areas in the spleen with altered signals and multiple T2 hypertense cystic areas (red arrow).

With suspicion of a primary splenic tumour she underwent surgery. Intraoperatively, the tail of the pancreas was found to be adherent to the splenic mass. Therefore, the tail of the pancreas was resected en-bloc with the spleen [Table/Fig-4-6]. Enlarged lymph nodes along the station 9d and station 10 were removed along with the specimen. However, a pancreatic tail lesion was not identified during surgery. The patient had an uneventful recovery after surgery. The HPE revealed a small infiltrating moderately differentiated (Grade-II) adenocarcinoma in the pancreatic tail region (1×0.5 cm) with splenic extension and lymph nodal metastasis (five out of seven lymph nodes) [Table/Fig-7]. Immunohistochemistry (IHC) showed positivity

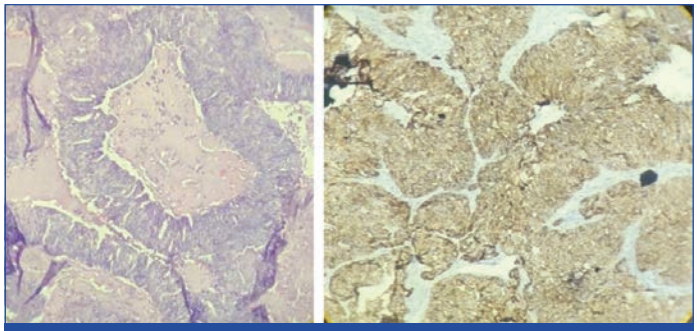
for Cytokeratin-7 (CK-7) [Table/Fig-8], CK-19 [Table/Fig-9], and Paired box 8 (PAX8) [Table/Fig-10]. Patient underwent gemcitabine-based chemotherapy for 12 cycles and is currently on follow-up. Patients recent Positron Emission Tomography (PET) scan revealed no evidence of residual lesions or metastasis [Table/Fig-11a,b]. Currently, patient is on follow-up and doing well after 15 months.



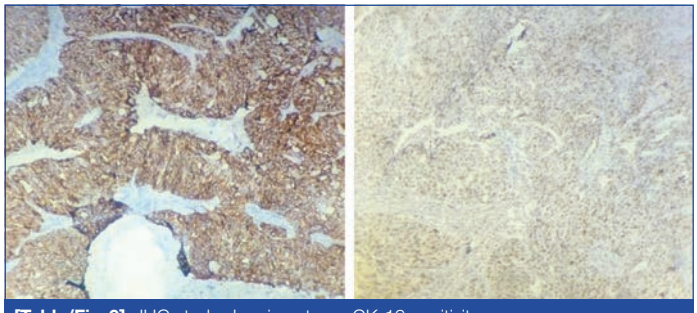
[Table/Fig-4]: Intraoperative photograph showing splenic tumour (green arrow).
[Table/Fig-5]: The en-bloc resection of splenic tumour with adherent pancreatic tail (blue arrow). (Images from left to right)



[Table/Fig-6]: Cut specimen showing solid tumour with necrotic areas (blue arrow).



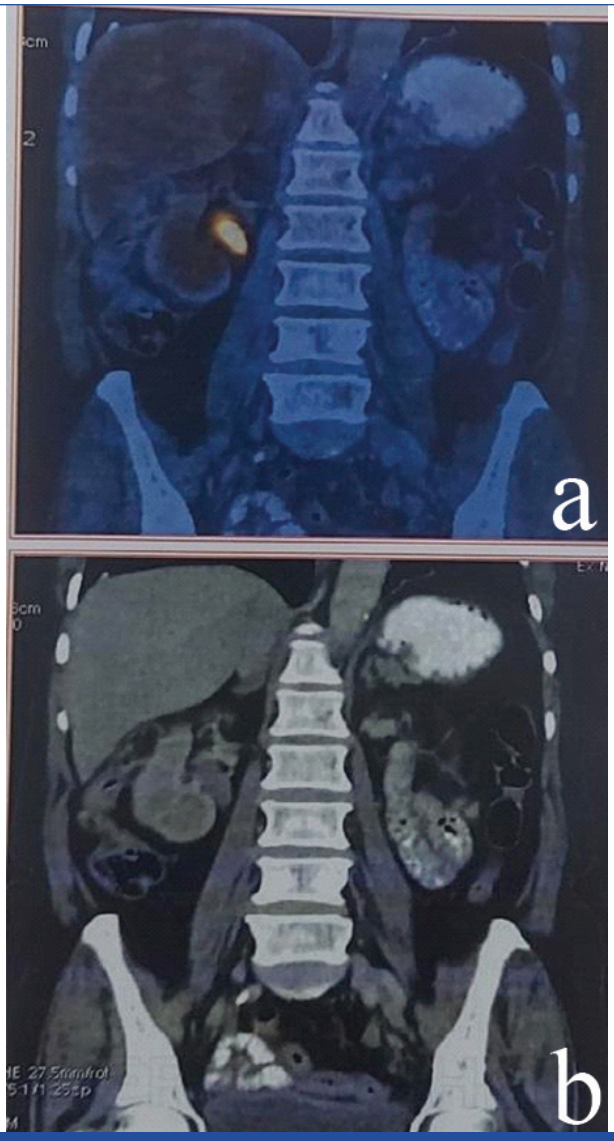
[Table/Fig-7]: Microscopy with 10X magnification showing neoplastic cells arranged in glandular pattern.
[Table/Fig-8]: IHC study showing diffuse CK-7 positivity. (Images from left to right)



[Table/Fig-9]: IHC study showing strong CK-19 positivity.
[Table/Fig-10]: IHC showing PAX 8 positivity. (Images from left to right)

DISCUSSION

Splenic enlargement as a part of systemic disease is a common scenario commonly associated with haematological illnesses or liver diseases [1]. Neoplastic splenic masses and focal lesions are rare in clinical practice [1]. Most of them are asymptomatic and present late.



[Table/Fig-11a,b]: Recent PET scan showing no metabolically active lesion anywhere in the abdomen.

Secondaries in the spleen are rare and are often incidentally detected during routine imaging for staging or follow-up [1]. The spleen is not a common site for metastasis [2]. The most common cancers that result in splenic metastasis are melanoma and cancers of the lung, breast, kidney, ovary, stomach, and prostate [3]. Even in conditions with diffuse abdominal metastatic lesions, the spleen is usually spared. Splenic metastasis is typically accompanied by multiple other metastases. The spleen is an unusual site for metastasis for various reasons, mainly the immunological environment inside the spleen and mechanical factors such as constant blood flow, lack of afferent lymphatics, and rhythmic contraction of the splenic capsule [1,4].

Pancreatic tail malignancy with direct spread to the splenic hilum is rare but has been reported. Splenic vascular involvement is more commonly observed than splenic parenchymal involvement. Splenic vascular involvement with splenic infarct and resulting rupture has also been reported [5]. Splenic vascular involvement is a poor prognostic factor in various studies [6,7]. Isolated splenic metastasis has been reported in colorectal malignancies, but a review of the literature shows no reports of isolated splenic metastasis in pancreatic cancers [8,9]. Studies have shown that spleen-preserving distal pancreatic resections are feasible in tumours not involving the pancreatic tail. Spleen preservation may even be attempted in cases of splenic vascular involvement [10]. However, direct splenic parenchymal involvement necessitates splenectomy.

A pancreatic malignancy presenting as a splenic mass is even rarer. In present case, the patient presented with a painful left hypochondrial lump and weight loss. Imaging investigations, mainly

CT scan and MRI, failed to reveal evidence of any pancreatic malignancy, and the tumour markers, namely CA19-9 and CEA, were normal. Patient underwent en-bloc resection, and histopathology revealed subcentimeter pancreatic adenocarcinoma with splenic extension. In the literature search, there are no reports of such a small primary lesion giving rise to large secondaries in the spleen. There are also no reports of pancreatic malignancy presenting as a splenic mass.

CONCLUSION(S)

Secondary lesions can arise in the spleen from a variety of malignancies, although they are rare. A diagnostic dilemma may occur when distinguishing between primary and secondary lesions. It is important to consider pancreatic malignancy when evaluating a splenic mass, especially for secondary lesions in the spleen. In cases of distal pancreatic malignancy with splenic metastasis, en-bloc resection can be performed, providing complete oncological clearance.

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