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A rare case of cystic hepatic metastasis from early endometrial carcinoma a case report

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Abstract

Cystic hepatic lesions are one of the most commonly encountered lesions in daily practice. The diagnosis ranges from benign lesions of no clinical significance to malignant and potentially lethal conditions. The prevalence of hepatic cyst has been reported to be as high as 15-18% in the United States. Imaging with conventional ultrasound, computed tomography, magnetic resonance imaging, or contrast-enhanced ultrasound be used to characterize further and diagnose these lesions. Cystic liver metastasis the most important diagnosis to exclude when multiple cystic lesions are identified in the liver. The common primary sources for cystic hepatic metastasis are colon, kidney, prostate, ovary/testis, squamous cell lung cancer, GIST, sarcomas and neuroendocrine tumors and about 50% of all cystic hepatic metastases arise from primary colon cancer. Liver abscesses an important differential diagnosis for cystic hepatic metastases. The cystic nature of these hepatic metastasis may be due to development of central necrosis due to more rapid growth of the tumor compared to its arterial supply. The radiological appearance of the metastases varies depending on the primary. Clinical history of primary and multiplicity of the lesions are classic features of hepatic metastases. Ultrasound and CT may provide limited information for differentiation, we here report a case cystic hepatic metastasis from an early endometrial cancer that recurred in liver after 8 years following surgery and brachytherapy.

Keywords: Cystic hepatic metastasis, endometrial carcinoma, recurrence

Introduction

Cystic hepatic lesions are a group of heterogeneous lesions encountered in day to day clinical practice. These lesion vary in pathogenesis, clinical presentation, and radiological findings. The diagnosis may range from benign cystic lesions to malignant and potentially lethal conditions^[1]. Cystic lesions of the liver are broadly classified as infectious and noninfectious lesions. The main parasitic lesion of the liver is the hydatid cyst, and the non-parasitic lesions are again classified into benign, pre-malignant and malignant and traumatic lesions (Fig. 1)^[2]. The most commonly encountered lesion is a simple hepatic cyst, but in addition to its morphology and number, determination of a solid component in the lesion through radiological imaging helps in the diagnostic approach. Except for simple cyst and polycystic liver that can be confidently diagnosed by ultrasound, the use of contrast-enhanced computed tomography (CT) or magnetic resonance imaging (MRI) is essential for a definitive or a reasonable differential diagnosis^[1]. Though modalities such as CT, MRI, and ultrasonography (USG) provide ambiguous results, the utilization of other diagnostic procedures like serodiagnostic tests and micro bubble contrast-enhanced ultrasound (CEUS) are invaluable in differentiating complex cysts, echinococcosis, and cystadenoma/cystadenocarcinoma^[2]. These diagnostic techniques also reduce the need for an invasive procedure.

Before the use of diagnostic imaging, hepatic cysts (HCs) were discovered surgically. A study conducted between 1954 and 1971 found the incidence of HCs to be 17 in 10,000 cases^[3]. The prevalence of hepatic cyst has been reported to be as high as 15-18% in the United States. Simple hepatic cysts are one of the most common, found in about 2.5-18% of the population. Congenital hepatic cysts are found more commonly in females of age 40-70 years, whereas acquired cysts (including hydatid, traumatic and inflammatory cysts) are more common in males of age group 30-50 years^[4]. About 10-15% of patients have symptoms that bring the cyst to clinical attention.

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Mild elevation of liver enzymes like alkaline phosphatase and γ -glutamyltransferase is commonly seen. Evidence suggests that elevated levels of cancer antigen 19-9 (CA 19-9) in the cystic fluid does not correlate with malignant lesions. A study done by Wang *et al.* evaluated 21 cases of mucinous cysts, of which 57% were CA 19-9-positive. Interestingly, there was not much

significant difference found in CA 19-9 between the benign biliary cystadenomas (BCAs) and the malignant biliary cystadenocarcinomas (BCACs) [5]. A larger sample size is necessary to characterize the relationship between CA 19-9 and malignancy in HCs.

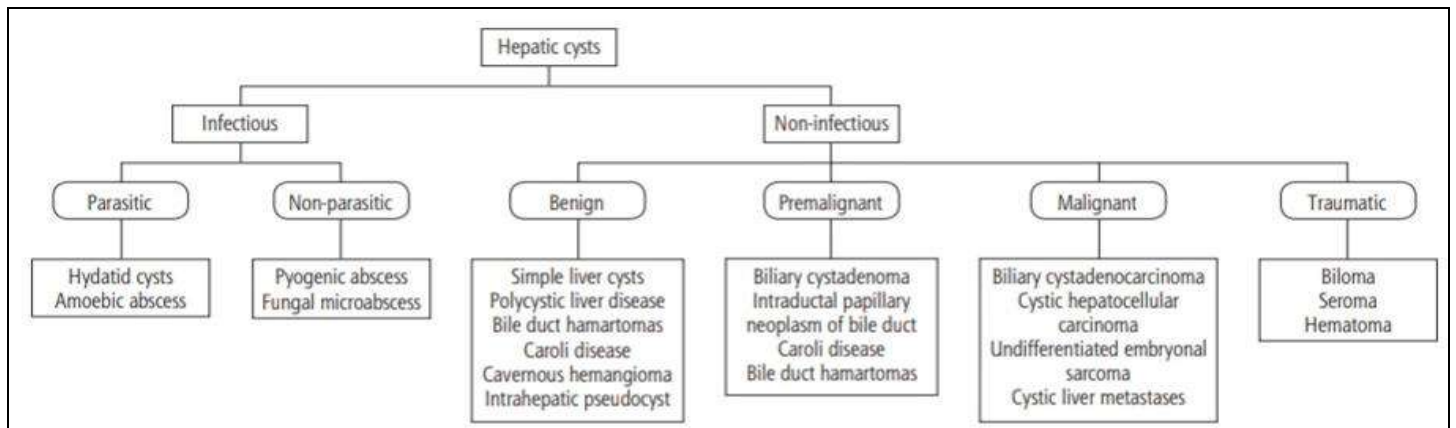


Fig 1: Classification of cystic hepatic lesions

Here, we report a case cystic hepatic metastasis from an early endometrial cancer that recurred in liver after 8 years following surgery and brachytherapy.

Case report

In April 2020, a 65 year old female who is a housewife by occupation presented at our emergency room with chief complains of lumps in right hypochondrium since last 8 month which initially presented as a small swelling that progressively increased to its present size. The swelling was also associated with pain and heaviness in the right hypochondrium. There was no history of fever, jaundice, malena, weight loss, haematuria, and bleeding per rectum and vaginum. Patient gave history of total abdominal hysterectomy with bilateral salpingo-oophorectomy for endometrial carcinoma for which she was operated in 2012. The patient was then treated with adjuvant brachytherapy for two years. After treatment serum CA-125 had returned to normal range. The patient remained under close follow up every six month (CA-125 and pelvic examination) and was without any evidence of recurrent disease until April 2020. Patient was stable clinically. Abdominal examination on

inspection showed a intra-abdominal lump with well-defined margins in the right upper quadrant that was moving with respiration.

Blood Investigation showed elevated ser CA-125. Ultrasonography revealed hypoechoic lesion measuring 17 x 12.5 cm with internal septations in right lobe of liver. Spleen size was about 15 cm with normal echotexture showing 3x4.6cm hyperechoic lesion at lower pole suggestive of neoplastic etiology.

Contrast enhanced computed tomography (CECT Abd.) fig 2. revealed large cystic lesion with solid component showing enhancement on contrast images noted in right upper quadrant extending upto right lumbar region. The lesion measured 21.5(cc)x15(T)x14.6(AP) cm abutting the liver and scalloping the liver margins with multiple septae within suggestive of neoplastic etiology. Anteriorly the lesion reached up to the anterior abdominal wall and posteriorly up to right kidney.

Fine needle aspiration cytology (FNAC) from fluid aspirated from abdominal wall lump showed atypical cells against haemorrhagic background with cytological appearance suggestive of adenocarcinoma.

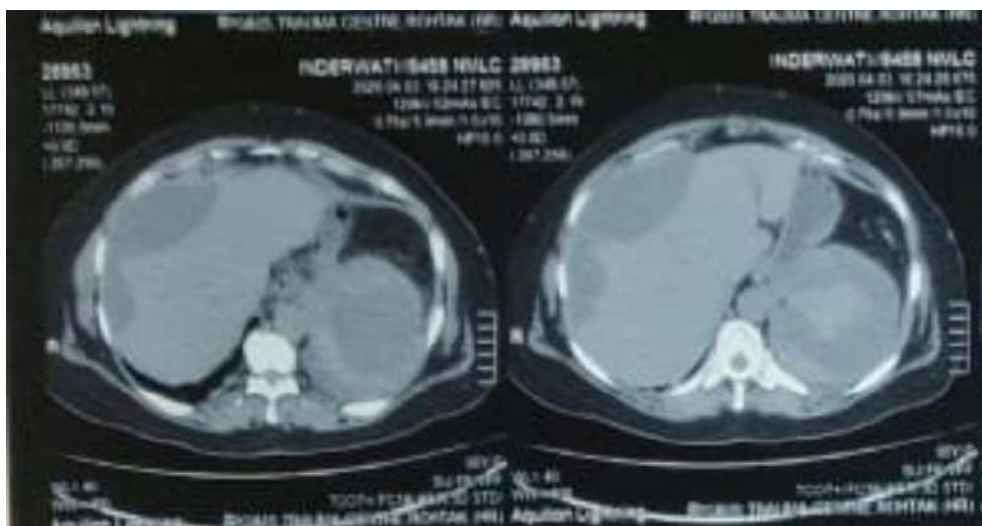


Fig 2: CECT Abd. Scan showing large cystic lesion with solid component

The patient was referred to dept. of oncology for further management where patient is under hospice care and is being treated as terminal cancer patient.

Discussion

Cystic lesions of liver occur in up to 5% of population in clinical routine practice, covering a wide variety of pathologic entities, including benign lesions (eg, common simple cyst, parasitic cyst, Caroli disease, pyogenic abscess, echinococcal cyst), rare malignant tumors (biliary cystadenoma and cystadenocarcinoma) and malignant metastatic disease [6, 7]. In fact, each disease has characteristic appearance on imaging, the ultrasonography, CT, and MRI are useful tools to make differential diagnosis. But it is always difficult to make a definitive diagnosis depending on imaging method. Clinical history and laboratory data are also helpful. It is usually easy to make the differential diagnosis between cystic liver metastases from benign hepatic cystic lesions based on imaging. Single cysts manifest as a well-defined homogeneous and hypodense mass, with thin wall and an absence of internal structures, when an intravenous contrast material is administered, there is no enhancement of the wall and contents on CT imaging. Single cysts are usually asymptomatic, unless the lesions are big enough to produce pressure effect. Generally, pyogenic abscess exhibits a low-density mass and may have variable appearance on CT scans, "double target sign" which shows a central hypoattenuating lesion is surrounded by a ring of enhancing tissue and encircled by an outer rim of hypoattenuation, which is a characteristic of abscess cavity. In clinical practice, patients with liver abscess may present with sepsis and space-occupying-related symptom. Most liver metastases are solid, and a small part of it is cystic. Cystic liver metastases usually come from colorectal cancer, ovarian cancer, pancreatic cancer, gastrointestinal stromal tumor, melanoma, sarcoma, neuroendocrine tumors, and so on. [8] The cystic nature of metastases is due to the rapid growth beyond hepatic arterial blood supply of the lesion, leading to central necrosis. Cystic liver metastases may have heterogeneous and ill-defined borders, irregular and incomplete septa, and the inner surfaces are typically ragged with mural nodules. In addition, cystic metastases present unenhanced rim on the arterial phase of CT and MRI. 18F-FDG positron emission tomography-CT (PET-CT) is much more sensitive and accurate than CT and MRI. It is recommended as the preferred modality to identify malignant tumor. However, in our case patient denied the PET-CT check because of the high costs.

Because primary squamous liver carcinoma and secondary squamous hepatic metastases are similar in morphologic and immunophenotypical characters by histology, and primary squamous liver carcinoma may also reveal cystic mass on imaging, in fact, to make the diagnosis of liver metastases from endometrial carcinoma of our case, another possibility as primary squamous liver carcinoma should be ruled out, although only 30 or so cases have been reported in the literature. Primary squamous liver carcinoma has been reported to originate from pre-exist liver cysts or be associated with teratomas or liver cirrhosis [9].

In relation to our case Endometrial cancer is the most common gynaecologic malignancy in the United States [10], and the incidence of the disease is increasing rapidly in Korea, where it is the third most common malignancy in women, affecting approximately 862 patients per year [11]. The number of patients with recurrent endometrial cancer is also increasing, and currently 10% to 15% of patients with early stage endometrial cancer experience recurrence [12]. In India, the incidence rates are

low. Most of these cancers present at an early stage and are usually associated with good prognosis. The treatment comprises surgical staging and adjuvant radiotherapy and/or chemotherapy depending on final surgico-pathological stage. Endometrial cancer spreads by direct extension, trans tubal dissemination, lymphatic dissemination, and hematogenous spread, the latter of which most commonly results in lung metastasis, but liver, brain, and bone are also less commonly involved.

The presented case represents the unusual recurrence of endometrioid carcinoma in the liver. The most common site of endometrioid carcinoma recurrence is the vaginal cuff, and approximately 75% of recurrences occur at this site without adjuvant therapy. However, although adjuvant radiotherapy reduces locoregional recurrence, the vaginal cuff still remains the most common site of relapse within the pelvis [12,13]. Sohaib *et al.* [14] reported that the most frequent sites of relapse by cross-sectional imaging are in lymph nodes, the vaginal vault, peritoneum, and the lungs. Hydronephrosis secondary to disease within the pelvis is also a frequent finding. Less frequent sites of distant hematogenous spread include liver, spleen, pancreas, bone, brain, abdominal wall, and skeletal muscle [14].

The etiology of recurrence in our case may have been due to tumor cells left behind after initial surgery that survived adjuvant radiation therapy. Another possibility to consider is the malignant transformation of endometriosis [15]. The de novo development of endometrioid carcinoma from ectopic endometriosis is also a possibility [16], although carcinogenesis from endometriosis is rare [17]. Our patient had no known history of endometriosis and no evidence of ectopic uterine tissue by original pathology following hysterectomy, and thus, this scenario seems less than likely.

Patients with stage 1A and grade 1 to 2 tumors are considered low risk, with at most a 5% chance of locoregional recurrence [18]. Isolated vaginal recurrence is the most common type of treatment failure after surgery in patients with early stage endometrial cancer, but our patient unusually experienced liver recurrence. Unfortunately, no consensus exists on the management of this patient population. Current guidelines are broad and include tumor-directed radiotherapy, and/or chemotherapy, and/or surgical resection. Risk factors regarding the original diagnosis and disease recurrence (e.g., location of recurrence, prior therapy) are evaluated on an individual basis to tailor treatment plans. For example, patients treated with radiation initially would routinely be offered chemotherapy as a component of the treatment for recurrent disease.

The likelihood of liver recurrence in low risk patients with stage 1A endometrial cancer is quite low. Further stratification of patients that experience recurrence according to site of recurrence, prior radiation therapy, and initial disease characteristics may help focus treatment guidelines for these patients.

Conclusions

Cystic liver lesions usually involve a spectrum ranging from benign to premalignant to frankly malignant lesions. Most hepatic cystic lesions are benign and asymptomatic lesions that are diagnosed incidentally and require no intervention. Large, symptomatic or malignant cysts need further evaluation and treatment. Accurate preoperative diagnosis is essential to select appropriate treatment. Premalignant cystic diseases of the liver are rare but pose diagnostic and therapeutic challenges. Although some of the manifestations of recurrent endometrial carcinoma such as pelvic (vaginal), nodal, peritoneal and lung metastasis are

well known, other manifestations involving sites such as liver, spleen, adrenals, brain are less well known. Aggressive histopathological types such as clear cells and papillary serous types are more prone to relapse in atypical sites compared with endometrioid type. Advances in treatment options such as radiation therapy and chemotherapy are being made as patients with recurrent endometrial carcinoma are being imaged with greater frequency and, the unusual and atypical sites of recurrent disease may be encountered more often.

Conflict of interest

No potential conflict of interest relevant to this article was reported.

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