University Journal of Surgery and Surgical Specialties

ISSN 2455-2860 Volume 2 Issue 4 2016

Isolated caudate lobe resection for solitary fibrous tumour of caudate lobe of liver - A rare combination

SASTHA AHANATHAPILLAI
Department of Surgical Gastroenterology and Proctology,
STANLEY MEDICAL COLLEGE AND HOSPITAL

Abstract :
We present a 42 year old female with a solitary fibrous tumour in the caudate lobe. Solitary fibrous tumour is a rare tumour of the liver originating from the mesenchyme. The malignant potential of the tumour has not been well defined. Pre-operative diagnosis is not always possible as reported imaging features of the tumour are also largely non-specific and the diagnosis is usually by histopathological findings. The patient was treated with an isolated caudate lobe resection, which is a rare and technically demanding procedure by itself. The patient was free from any symptoms and recurrence one year after surgery.

Keyword : Solitary fibrous tumour of liver, Caudate lobe tumour, Isolated caudate lobe resection, Liver resection.

Background:
Solitary fibrous tumor (SFT) is a rare spindle-cell neoplasm of mesenchymal origin, first described by Klemperer and Robin in the visceral pleura in 1931[1]. It has also been described in other sites including the liver, orbits, upper respiratory tract, abdomen, breast and soft tissue[2]. SFT of the liver is extremely rare with less than 40 cases reported in English literature so far[3-7]. The symptoms are usually due to the mass effect of a large tumour. Pre-operative diagnosis of SFT based on imaging findings is difficult as there are no radiological findings described as specific for SFT[8-10]. Preoperative cytology may also be inconclusive or misleading. These lesions are commonly operated with other diagnosis in mind. The diagnosis of SFT is usually confirmed by histopathological studies of the resected lesion. The recommended treatment is surgical resection because of the malignant potential of these lesions[11].
Isolated caudate lobectomy was first described by Lerut et al in 1990[12]. Caudate lobe resection is one of the most demanding procedures among hepatic resection, owing to its deep and complex

location and its proximity to major vessels. Isolated caudate lobe resections can help avoid major hepatic resections for tumours confined to the caudate lobe[13]. Isolated caudate lobe resection for SFT has not been reported in literature, so far.

Case report A 42 year old woman presented to our department in November 2011 with vague upper abdominal pain for 6 months duration. She had no history of jaundice, fever, loss of appetite or weight, haematemesis or oral contraceptive intake. She had no co-morbidities. There was no abdominal mass, hepatomegaly or ascites. Her laboratory parameters including liver function test, renal function test, viral markers and alpha fetoprotein were unremarkable. Upper gastrointestinal endoscopy showed normal study. Ultrasonogram (USG) of the abdomen revealed a 4.7 × 4.4 cm hypoechoic soft tissue lesion with flow in the caudate lobe of liver. Contrast enhanced computed tomography (CECT) of the abdomen demonstrated a 6.7 × 6.3 × 4.8 cm heterogenous mass lesion in the caudate lobe **(Fig. 1 & 2)**.By the image findings, it was not possible to exclude the possibility of a hepatocellular carcinoma (HCC). As the tumor was confined to the caudate lobe, it was decided to do an isolated caudate lobe resection. This would help to maximally preserve functioning liver parenchyma. The caudate lobe with the tumour was resected by a left sided approach **(Fig. 3 & 4)**. Grossly, the tumour was a grayish white, lobulated, well circumscribed mass measuring about 6 × 6 × 4 cm **(Fig. 5)**. Histologically, the tumour was composed of fascicles of spindle shaped cells having round to oval vesicular nuclei, interspersed with blood vessels **(Fig. 6)**. It also contained focal areas of perivesicular and interstitial hyalinization with occasional cystic spaces. Immunohistochemical studies showed the tumour to be positive for CD34 and epithelial membrane antigen (EMA) **(Fig. 7 & 8)**. It was negative for CD31 and reticulin. Post operative period was uneventful and the patient made a full and complete recovery. Patient remains asymptomatic with no recurrence at follow-up one year after surgery.

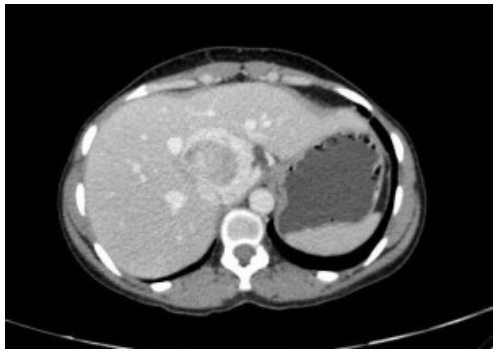


Fig. 1: CECT abdomen – axial section.

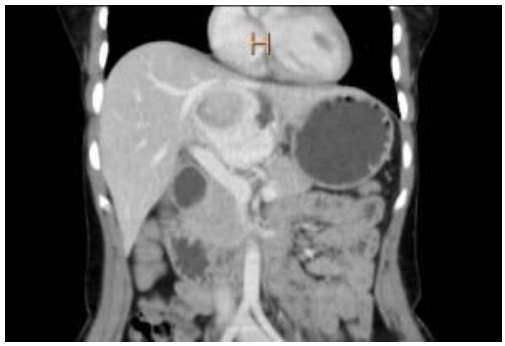
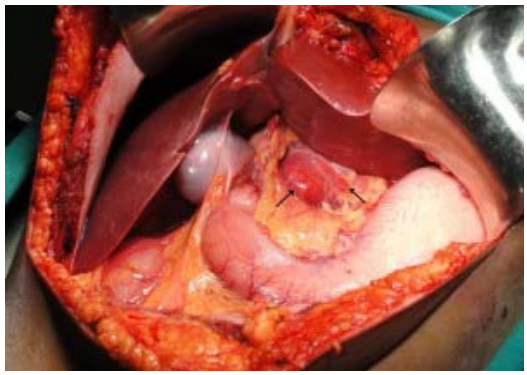


Fig. 2: CECT abdomen – coronal section. Fig. 3: Intra-operative picture.



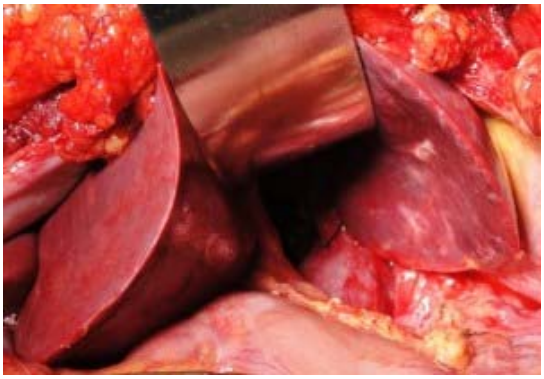
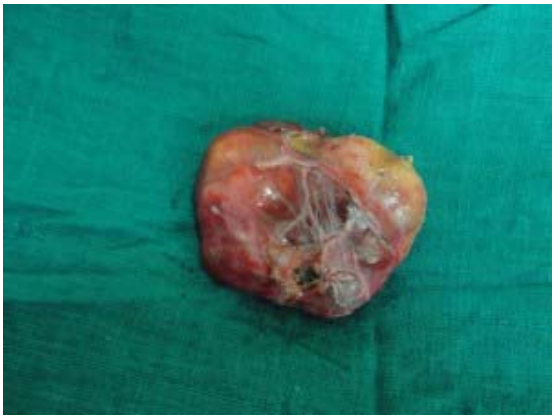


Fig. 4: Post-resection picture.



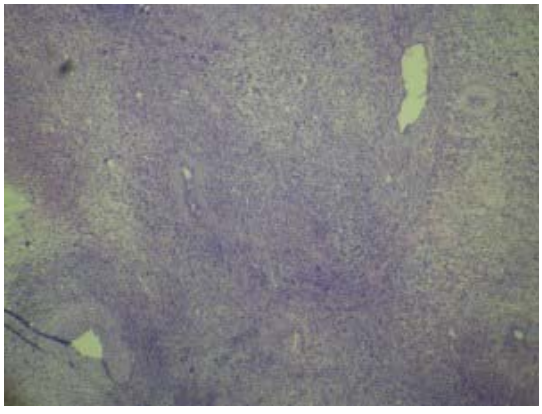


Fig. 5: Resected specimen.
Fig. 6: Histopathology of tumour.

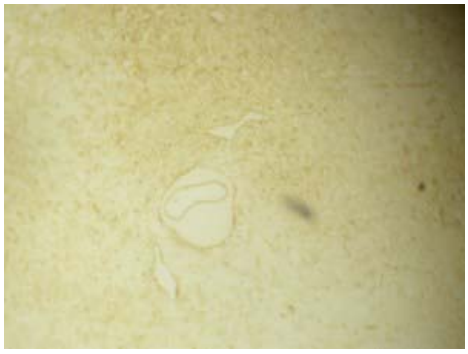


Fig. 7: CD 34 positive staining.
Fig. 8: EMA positive staining.

Discussion

Solitary fibrous tumour of the liver is extremely rare and typically presents in the middle age[14] . A strong female predilection is noted[15]. Most patients are asymptomatic and when symptomatic, they may present with vague abdominal pain, distension and discomfort, abdominal mass, weight loss or fatigue[16]. Less common symptoms are jaundice, deranged liver function test and hypoglycaemia[17]. The lesion is usually a solitary, large and well defined mass lesion on cross sectional imaging. It is hyperechoic or hypoechoic on USG[14]. It is usually hypodense with or without irregular minim al enhancement on CECT[14]. These radiological findings are

nonspecific and it may be difficult to differentiate benign from a malignant tumour. It is important to rule out other tumours like HCC, sarcoma, leiomyoma, and inflammatory pseudotumour. Histopathological and immunohistochemical studies are ultimately required to make a final diagnosis. The CD34 antibody is a marker for SFT, though it is not specific[18]. They may be variably positive for CD99 and Bcl-2, and lack cytokeratin or other mesothelial markers. Typical SFTs show a pattern less architecture characterised by a combination of alternating hypocellular and hypercellular areas separated from each other by thick bands of hyalinised, somewhat keloidal collagen and branching haemangiopericytoma -like vessels[19]. These lesions are mostly benign, but may rarely undergo malignant transformation with features of local recurrence and distant metastasis. The diagnosis of malignancy is made on the criteria of hypercellularity, nuclear atypia, necrosis and high mitotic activity. So, a complete surgical resection is the preferred treatment option and is curative in most occasions. Because of the rarity of these tumours, their prognosis has not been well defined. Hence, follow-up surveillance to look for recurrence is necessary and recommended. SFT confined to the caudate lobe has not been reported before. Treatment options for such tumour are either hemihepatectomy including the caudate lobe or isolated caudate lobectomy. Isolated caudate lobe resections have been considered technically challenging. Even in high volume centres, caudate lobe excision comprises only 0.5% to 4% of the total number of hepatic resections and isolated resection of the caudate lobe is even rare[20]. Its close proximity to the portal triad, hepatic veins, and IVC are the reasons for the complexity of the procedure. But the advantage of the procedure is that it avoids major liver resection and reduces the chance of post-hepatectomy liver failure by maximally preserving functional liver parenchyma and hence should be considered whenever technically feasible.

Conclusion:

Solitary fibrous tumours of liver are rare neoplasms. We present a case of SFT confined to the caudate lobe successfully treated by isolated caudate lobe resection, which is a rare combination, and probably the first of its kind reported in literature. Radiological features of SFT are grossly nonspecific and it is difficult to make a preoperative diagnosis. Complete surgical resection is the treatment of choice and is curative in most cases. Due to the rarity of these tumors, their exact malignant potential and prognosis are yet to be defined.

Reference:

1 Klemperer P, Coleman BR: Primary neoplasms of the pleura. A report of five cases. Am J Ind Med 1992, 22:1-31.

2 Neeff H, Obermaier R, Technau-Ihling K, et al. Solitary fibrous tumour of the liver: case report and revi ew of the literature. Langenbecks Arch Surg 2004; 389: 293-298.

3Changku J, Shaohua S, Zhicheng Z, Shusen Z. Solitary fibrous tumor of the liver: retrospective study of reported cases. Cancer Invest 2006;24:132–5.

4 Nath DS, Rutzick AD, Sielaff TD. Solitary fibrous tumor of the liver. AJR Am J Roentgenol 2006;187:W187–90.

5Obuz F, Secil M, Sagol O, Karademir S, Topalak O. Ultrasonography and magnetic resonance imaging findings of solitary fibroustumor of the liver. Tumori 2007;93:100–2.

6 Ji Y, Fan J, Xu Y, Zhou J, Zeng HY, Tan YS. Solitary fibrous tumor of the liver. Hepatobiliary Pancrea t Dis Int 2006;5:151–3.

7Moser T, Nogueira TS, Neuville A, Riehm S, Averous G, Weber JC, et al. Delayed enhancement pattern in a l o c a l i z e d f i - brous tumor of the liver. AJR Am J Ro entgenol 2005;184:1578–80.

8 Fuksbrumer MS, Klimstra D, Panicek DM. Solitary fibrous tumor of the liver: imaging findings. AJR Am J Roentgenol 2000;175:1683–7.

9 Vaswani K, Guttikonda S, Vitellas KM. Localized fibrous tumor of the liver. AJR Am J Roentgenol 2000;175:875–6.

10Lcesne R , Drouillard J, Le Bail B, S aric J, Balabaud C, Laurent F. Localized fibrous tumor of the liver: imaging findings. Eur Radiol 1998;8:36–8.

11 Moran CA, Ishak KG, Goodman ZD. Solitary fibrous tumor of the liver: a clinicopathologic and immunohistochemical study of nine cases. Ann Diagn Pathol 1998; 2: 19-24.

12 Lerut J, Gruwez JA, Blumgart LH. Resection of the caudate lobe of the liver. Surg Gynecol Obstet 1990;171:160-162.

13 A, Jeswanth S, Senthilkumar P, Srinivasan U P, et al. Isolated caudate lobe resection: technical challenges. Annals of Gastroenterology (2013) 26, 1-6.

14 H Kandpal, R Sharma, S D Gupta and A Kumar. Solitary fibrous tumour of the liver: a rare imaging diagnosis using MRI and diffusion-weighted imaging. The British Journal of Radiology, 81 (2008), e282–e286.

15. Ke Sun, Jian-Ju Lu, Xiao-Dong Teng, Li-Xiong Ying and Jian-Feng Wei. Solitary fibrous tumor ofthe liver: a case report. World Journal of Surgical Oncology 2011, 9:37.

16 Paula Novais, Carlos Robles-Medranda, Vera Lucia Pannain, Daniel Barbosa, Beatriz Biccas, Homero Fogaça. Solitary Fibrous Liver Tumor: Is Surgical Approach the Best Option? J Gastrointestin Liver Dis. March 2010 Vol.19 No 1, 81-84.

17 Khalifa MA, Montgomery EA, Azumi N, et al. Solitary fibrous tumors: a series of lesions, some in unusual sites. South Med J 1997; 90: 793-799.

18 Westra WH, Gerald WL, Rosai J. Solitary fibrous tumor. Consistent CD34 immunoreactivity and occurrence in the orbit. Am J Surg Pathol 1994; 18: 992-998.

19 Vallat-Decouvelaere AV, Dry SM, Fletcher CD: Atypical and malignant solitary fibrous tumors in extrathoracic locations: evidence of their comparability to intra-thoracic tumors. Am J Surg Pathol 1998, 22:1501-1511.

20 Nagasue N, Kohno H, Yamanoi A. Resection of the caudate lobe of the liver for primary and recurrent hepato-cellular carcinomas. J Am Coll Surg 1997;184:1-8.