

Evaluation of Liver Space-occupying Lesion

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Abstract

Introduction: Space-occupying lesion (SOL) on the liver can be caused by various diseases that may or may not be manifested with symptoms. Mass lesions of the liver occur quite frequently; thus, clinicians interested in liver diseases should have a thorough understanding of their presentations, diagnosis, and treatment.

Aim: This study aims to evaluate the different causes of SOL of the liver and find out etiology of liver tumor among patients of SOL of the liver.

Materials and Methods: This observational study was conducted among the liver SOL patients who were above 20 years of age. The inclusion criteria were patients having clinically and radiologically confirmed hepatic SOL with consent.

Results: Maximum numbers of cases were seen in the 5–6th decade of life. The most common etiology for SOLs of the liver in this study was metastatic liver disease. The most common primary for secondary liver was from carcinoma stomach. The second most common etiology for SOLs of the liver observed in this study was amebic liver abscess.

Conclusion: Metastatic liver diseases were mostly managed conservatively. For 5 cases having single secondary lesion is treated with lobectomy which gives better prognosis than conservative management. 1-year survival rate is >50% for single metastatic lesion surgically treated compared to <30% for multiple secondaries conservatively managed.

Key words: Adenocarcinoma, Liver abscess, Liver, Space-occupying lesion

INTRODUCTION

Space-occupying lesion (SOL) on the liver can be caused by various diseases that may or may not be manifested with symptoms. Mass lesions of the liver occur quite frequently; thus, clinicians interested in liver diseases should have a thorough understanding of their presentations, diagnosis, and treatment. Hepatic mass lesions include tumors, tumor-like lesions, abscesses, cysts, hamartomas, and confluent granulomas. The frequency with which each is seen varies in different geographic regions and different populations. Focal nodular hyperplasia is more common than hepatocellular adenoma. Focal nodular hyperplasia occurs at all ages, but most patients present in the third and fourth decades of life.^[1] The cause of

focal nodular hyperplasia is unknown. Some evidence suggests that focal nodular hyperplasia may be hormone dependent.^[2,3] The liver is the most common destination of hydatid cyst (70%), followed by the lungs (20%), kidney, spleen, brain, and bone. The sensitivity and specificity of both ultrasonography and computed tomographic (CT) in confirming the diagnosis are high.^[4] In adults, in most part of the world, hepatic metastasis is more common than primary malignant tumors of the liver, whereas in children, primary tumors outnumber both metastases and benign tumors of the liver. Hepatic metastases occur in 40–50% of adult patients with extrahepatic primary malignancies.^[5] Most cases of pyogenic liver abscess are cryptogenic or occur in older men with underlying biliary tract disease.^[6] Different liver SOL has different etiology and risk factor, so it is important to find out etiology and risk factor in Indian subcontinent, which would help us to treat different kinds of SOL of the liver.

Aim

This study aims to evaluate the different causes of SOL of the liver and find out etiology of liver tumor among patients of SOL of the liver.

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MATERIALS AND METHODS

This observational study was conducted among the liver SOL patients who attended Government Head Quarters Hospital, Pudukkottai. The study participants were above 20 years of age. The study was conducted for about 1 year. The inclusion criteria were patients having clinically and radiologically confirmed hepatic SOL with consent. The sample size of 100 was included who were satisfying inclusion criteria. The data were collected to study demographic profile and assessment of comorbid condition and risk factors. All patients were undergone detailed clinical examination and routine as well as specific blood and imaging study. Ethical committee approval was obtained.

RESULTS

Mostly, the liver was enlarged to about 3 cm below the costal margin in the downward direction, and the upward enlargement was common in amebic liver abscess cases. The right lobe of the liver was commonly involved due to the portal vein mainly drain into the right lobe. 25 cases were detected only by ultrasonography abdomen and CT abdomen. They have clinically no liver enlargement by they have other symptoms such as right upper quadrant abdominal pain, fever (commonly in abscess), anorexia, and weight loss (commonly in malignancy). The males were predominantly affected in this study. The male:female is about 64:36. Maximum numbers of cases were seen in the 5th–6th decade of life. Alcoholics are affected twice than non-alcoholics.

Etiology	Number of cases
Secondaries liver	58
Amebic liver abscess	22
Pyogenic liver abscess	8
Hydatid cyst of liver	5
HCC	3
Hemangioma	3
Non-parasitic solitary cyst	1
Total	100

HCC: Hepatocellular carcinoma

The most common etiology for SOL of the liver in this study was metastatic liver disease. The most common primary for secondary liver was from carcinoma stomach. The second most common etiology for SOLs of the liver observed in this study was amebic liver abscess. 80% of the cases were resolved by conservative medical management alone. About 20% of the patients were required surgical management. Pyogenic liver abscess is less common cause of SOLs of the liver than amebic liver abscess. 70% of the patients responded with medical management. 30% of the patients were required surgical management like aspiration.

Only 5 cases of hydatid cyst of the liver were observed in this study. All the cases were required surgical management. In our study, we gave only conservative surgical management like partial cystoprostatectomy. Primary hepatocellular carcinoma was rarely encountered in this study. For all cases, we gave only systemic palliative chemotherapy. Benign tumors of the liver were usually incidental findings. All benign tumors observed in this study were asymptomatic and smaller in size so not required any intervention.

DISCUSSION

Space-occupying liver lesions usually present with abdominal pain or abnormal physical findings such as a palpable abdominal mass or distention. Liver lesions identified in children include benign and malignant neoplasms, inflammatory masses, cysts, and metastatic lesions. Two-thirds of liver lesions in children are malignant. Hepatoblastoma accounts for two-thirds of malignant liver tumors in children. Benign lesions of the liver in children include vascular lesions, hamartomas, adenomas, and focal nodular hyperplasia. Although benign and malignant liver masses share some clinical manifestations, treatment and prognosis differ. Evaluation involves physical examination, imaging evaluation, and laboratory investigations such as serological markers [alpha-fetoprotein (AFP)] for malignant liver lesions. Ultrasound is the initial imaging modality of choice because it can detect, characterize, and provide the extent of liver lesions. However, CT or magnetic resonance imaging (MRI) is often subsequently performed for further characterization, assessment of precise extent, and detection of associated metastatic disease in cases of malignant hepatic neoplasm. Serological markers (such as AFP) can be useful in narrowing the differential diagnosis when they are markedly elevated, but a substantial number of patients, unfortunately, do not have high levels of these markers at the time of presentation or cautious interpretation is warranted as AFP level is frequently elevated in infants up to 6 months of age and may be slightly elevated with benign tumors and with hepatic insult or regeneration. Therefore, a tissue diagnosis is often required to guide subsequent management. The histology and anatomy of a pediatric liver tumor guide the treatment and prognosis.^[7-9]

In a retrospective study of 84 patients who underwent MRI examination of the liver, the qualitative parameters margin, shape, internal structure, signal intensity, and the presence of a capsule were evaluated in 152 lesions comprising 48 hemangiomas, 54 secondary deposits, 23 hepatoma, 8 simple cysts, 17 hydatid cysts, 1 abscess, and 1 focal fatty infiltration. Our main objective was to differentiate hemangiomas from secondary deposits and hepatomas. In hemangiomas, the combination of smooth margin (98%), round or oval shape

(90%), homogeneity (96%), very high signal intensity on T2-weighted sequence (94%), and the complete absence of capsule helped to distinguish them from secondary deposits and hepatomas in the majority of cases. It is concluded that with MRI we can establish the diagnosis of focal lesions of the liver in about 95% of cases.^[10]

According to these two studies, the incidence of various SOLs in the liver is different for Pudukkottai, when compared to various parts of places in India like Delhi and Mumbai.

CONCLUSION

Metastatic liver disease was mostly managed conservatively. For 5 cases having secondary lesion is treated with lobectomy which gives better prognosis than conservative management. 1-year survival rate is >50% for single metastatic lesion surgically treated compared to <30% for multiple secondaries conservatively managed.

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