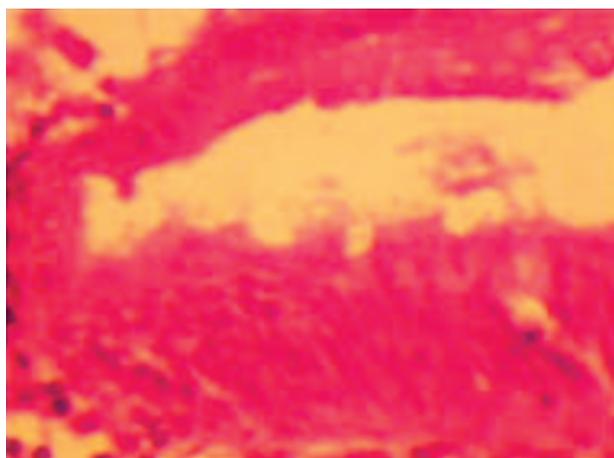


**Figure 1** Magnetic resonance cholangiopancreatography showing a choledochal cyst with a large, well-defined, oval filling defect suggestive of calculus in the middle of the common bile duct (CBD) and a fuzzy looking mass/sludge in the lower CBD.



**Figure 2** High-power view of the adenoma showing a focus of mild dysplasia (HE  $\times 20$ ).

Choledochal cysts are associated with abnormal pancreatobiliary ductal union (APBDU) in about 90% of cases.<sup>9</sup> We could not demonstrate whether the present case was associated with APBDU or not. We did not perform an endoscopic retrograde cholangiopancreatography because the diagnosis had been made on MRCP, and demonstration of APBDU could not have changed the management decision and could have introduced infection into an obstructed biliary system. The MRCP films did not provide information about APBDU, although it has been shown recently that MRCP can diagnose APBDU.<sup>10</sup>

In summary, extrahepatic BDA is a rare neoplasm. Although radiological investigations can be suggestive of BDA, it is difficult to diagnose this condition preoperatively. Like cystadenomas, this tumor should be considered premalignant. Its association with a choledochal

cyst in the present case could be further evidence of the existence of an adenoma-carcinoma sequence in the biliary tree.

Sandeep Aggarwal,\*  
Subodh Kumar,\*  
Arvind Kumar,\*  
Rakesh Bhasin,\*  
Pramod Kumar Garg,<sup>†</sup>  
Suman Bandhu,<sup>‡</sup>

Departments of \*Surgical Disciplines, <sup>†</sup>Gastroenterology  
and <sup>‡</sup>Radiodiagnosis, All India Institute of Medical  
Sciences, Ansari Nagar, New Delhi, India

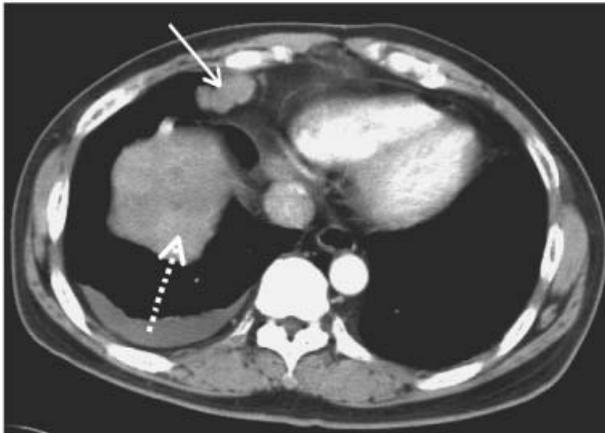
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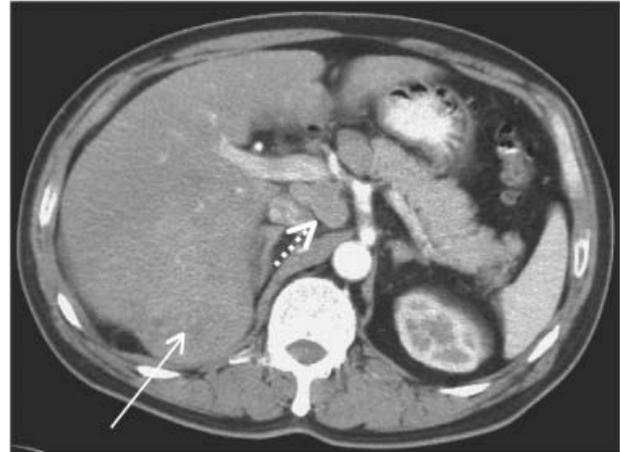
## SUPERIOR DIAPHRAGMATIC ADENOPATHY FROM PRIMARY HEPATOCELLULAR CARCINOMA

To the Editor,

Surgical resection remains the only modality of treatment for hepatocellular carcinoma (HCC) with proven survival benefits.<sup>1</sup> Hepatic resection for HCC is, however, a major undertaking, with a mortality of about 5% in established centers.<sup>2</sup> Accurate assessment of local



**Figure 1** Hepatic arterial phase of dynamic spiral computed tomography of the liver. Note the enlarged anterior superior diaphragmatic nodes in the para-cardiac fat (→). A small right pleural effusion is noted. The liver shows multiple nodules demonstrating hepatic arterial enhancement (dotted arrow).



**Figure 2** Hepatic arterial phase of dynamic spiral computed tomography of the liver. The liver shows hepatic arterial enhancement (→). Note the enlarged portal caval nodes in the vicinity of the hepatoduodenal ligament and the enlarged periceliac nodes (dotted arrow).

tumor extent and distant metastasis is therefore vital for appropriate patient selection for surgery.

There have been few reports in the literature concerning lymph nodes metastasis in HCC. The presence of abdominal (or regional) lymphadenopathy does not constitute contraindication to hepatic resection in many centers.<sup>2-4</sup> Understanding the implication of lymph node metastasis on disease dissemination in HCC and its impact on patient survival is thus conceivably important in patient selection for surgery and improving patient outcome.

A 48-year-old man presented to us complaining of right hypochondrial (RHC) pain radiating to his right shoulder. He was a hepatitis B carrier. Physical examination revealed a hard, enlarged liver. His liver function test showed mild transaminitis (total protein 92 g/L, serum albumin 29 g/L, total bilirubin 28  $\mu$ mol/L, alkaline phosphatase 242  $\mu$ L, alanine transaminase 64  $\mu$ L, aspartate transaminase 101  $\mu$ L). Alpha fetoprotein was elevated at 612  $\mu$ g/L and carcinoembryonic antigen and other tumor markers were normal.

Triphasic computed tomography (CT) scan of the abdomen showed an 11  $\times$  11 cm tumor involving segments VI, VII and VIII of the liver, consistent with HCC (Figs 1,2). There was thrombosis of the right portal vein. Celiac, periportal, retrocaval, aortocaval and para-aortic lymph nodes were enlarged (Fig. 2). A 4.1  $\times$  1.7 cm enlarged right superior diaphragmatic node was noted with associated small right pleural effusion (Fig. 1). No pulmonary nodules were detected on a CT thorax examination.

In view of the findings of supradiaphragmatic lymphadenopathy, video-assisted thoracoscopy was carried out for further assessment and biopsy. Intraoperatively, enlarged supradiaphragmatic lymph nodes corresponding to the adenopathy seen on the CT thorax were seen. The frozen section of the lymph nodes was positive for metastatic carcinoma. The diaphragm itself was noted

to be intact with no evidence of a direct invasion. Talc pleurodesis was performed. Final histology from the lymph-nodes biopsy confirmed the diagnosis of metastatic HCC. Pleural fluid, which was sent off for cytology, was positive for malignant cells. On follow up, the patient developed multiple lung metastases visible on chest X-ray within a month and shortly after that developed enlarged supraclavicular lymph nodes.

Lymphatics on the diaphragmatic surface of the liver drain directly into the anterior and middle groups of superior diaphragmatic lymph nodes in the thorax (these lymph nodes are also known as cardiophrenic angle lymph nodes). Our patient presented with RHC pain radiating to the tip of the right shoulder. The superior diaphragmatic lymph nodes are situated near the area where the phrenic nerves enter the diaphragm. Adenopathy here impinges the phrenic nerves, producing radiculopathy to the tip of the right shoulder, as seen in our patient.

Metastasis to the superior diaphragmatic lymph nodes has rarely been reported in the literature. Enlarged lymph nodes in this area imply malignancy and the commonest site of the primary tumor is usually a bronchogenic lung carcinoma.<sup>5</sup>

With primary tumor in the abdomen, colorectal carcinoma is the most common malignancy to metastasize to this area. In such cases, metastases, mainly to segment VIII of the liver usually precede metastases to superior diaphragmatic lymph nodes.<sup>6</sup> Graham *et al.* reported that anterior diaphragmatic lymph nodes (ADLN) metastasis from the colon are probably not rare and recommended that ADLN be assessed as a prelude to hepatic resection of the colorectal metastasis, as involvement of ADLN constitutes a contraindication to resection as they represent tertiary metastases.<sup>6</sup>

Primary HCC metastasizing to the supradiaphragmatic lymph nodes in a patient has to our knowledge not been reported in the literature. Watanabe *et al.*

studied 660 consecutive autopsies of HCC patients and reported an incidence of lymph-nodes metastasis in 25.5% of these patients.<sup>7</sup> Lymph-nodes metastasis, both regional and distant, has been reportedly found in only 1.6% of operated cases.<sup>4</sup> The discrepancy in these values may be related to the fact that most extrahepatic HCC (including lymph-nodes metastasis) occur with advance intrahepatic tumors (stage IV tumors).<sup>8</sup> Most of these tumors are non-resectable by other criteria.

The presence of regional lymph-nodes metastasis in itself is not an absolute contraindication for resection with curative intent in HCC.<sup>1,3,4</sup> However, the prognosis in such patients who underwent hepatic resection with curative intent is generally poor, even if hepatic resection with regional lymph nodes dissection is performed.<sup>4</sup>

The commonest sites of extrahepatic metastases of HCC are the lungs, followed by the abdominal lymph nodes and bones.<sup>8</sup> Mediastinal and anterior diaphragmatic lymph nodes involvement may be a marker of lung involvement and hence imply inoperable HCC. Lymphatic drainage from the diaphragmatic surface of the liver may contribute to the frequency of lung metastasis. This may also account for rare instances of solitary lung metastatic recurrences after curative resection of primary HCC.<sup>9</sup>

Supradiaphragmatic lymph-nodes metastasis is a rare finding in HCC. Our case suggests that it may occur via direct lymphatic drainage from the diaphragmatic surface of the liver to the superior diaphragmatic lymph nodes. The site of the tumor (primary or secondary tumor) usually involves segment VIII.<sup>6</sup> We suggest that the superior diaphragmatic area be assessed prior to liver resection, as the presence of adenopathy here may be a marker of aggressive disease and may indicate lung metastasis. This is particularly so if the HCC extends into or involves segment VIII of the liver. Further investigations might thus be warranted as lung metastases imply an inoperable tumor with poor prognosis.<sup>10</sup>

In conclusion, the lymphatic drainage of the diaphragmatic surface of the liver may contribute to the frequency of lung metastasis in HCC.<sup>8</sup> Attention should be paid to enlarged superior diaphragmatic lymph nodes when considering resection in HCC. Most cases of HCC with lung metastasis do not have superior diaphragmatic adenopathy. While the absence of this is probably of no prognostic significance, its presence may be a marker of lung involvement. The purpose of this letter is to raise awareness of this possibility. When anterior diaphragmatic lymph nodes are seen on the lung bases cuts on a triphasic CT scan of the abdomen, the physician should be prompted to look for lung metastasis.

Chin-Ho Wong,\*  
Pierce KH Chow,\*  
Heng-Nung Koong,†  
Alexander Chung,\*  
Choon-Hua Thng,‡

\*Department of General Surgery, Singapore General Hospital and Departments of †Surgical Oncology and ‡Diagnostic Imaging, National Cancer Center, Singapore

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## SEVERE HEPATOTOXICITY ASSOCIATED WITH CHINESE DIET PRODUCT 'ONSHIDOU-GENBI-KOUNOU'

To the Editor,

The number of reports of severe hepatotoxicity from herbal products is increasing.<sup>1</sup> We have experienced severe hepatotoxicity associated with herbal products, marketed for weight loss, which we report here.

A 31-year-old woman obtained the Chinese drug product 'Onshidou-Genbi-Kounou' for weight loss by on-line shopping via the internet and took this drug for the month of September, 2000. She had no previous history of liver diseases and no liver dysfunction was detected at a medical check up 3 months after she began to take this drug. In December, 2001, she took four tablets/day of this drug for the third time for 4 weeks before presenting with a high-grade fever (40°C), malaise, and worsening epigastric pain, and she was immediately admitted to Yachiyo Chuo Hospital (Chiba, Japan) on