

Letter to the Editor

## Primary hepatic squamous cell carcinoma with abdominal incision metastasis after hepatectomy

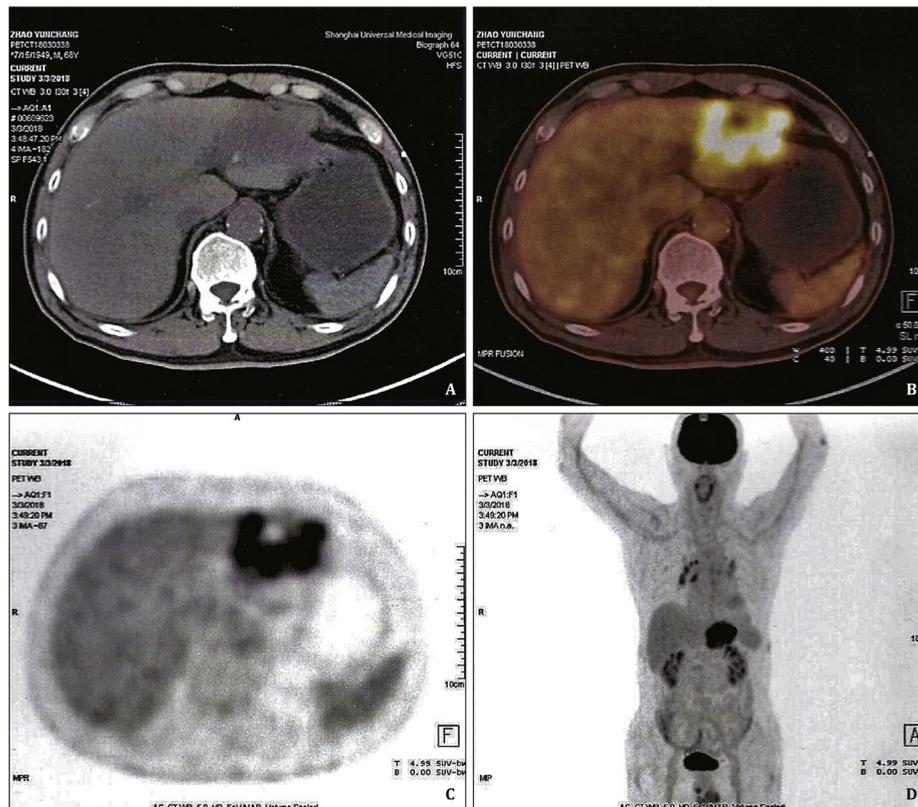
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To the Editor:

Primary hepatic squamous cell carcinoma (PHSCC) is a rare and easily misdiagnosed disease. We reported a PHSCC case with

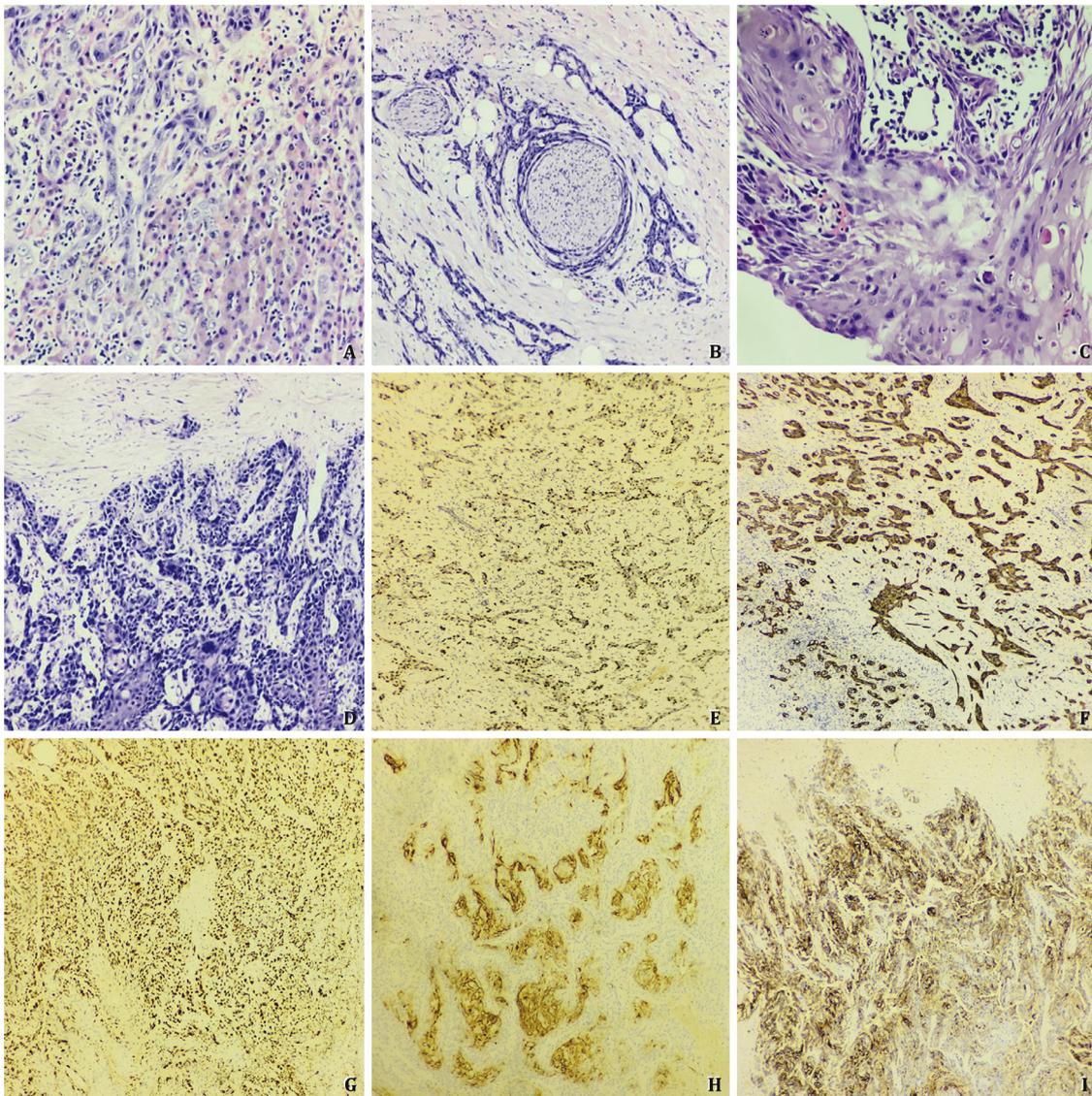
abdominal incision metastasis after hepatectomy, and reviewed the clinical course, imaging, pathology and immunohistochemical findings. Our case may provide a better understanding of PHSCC.



**Fig. 1.** Preoperative PET-CT revealed an irregular low-density lesion (about 7.0 × 4.7 cm) in the left lateral lobe of the liver. A strip-shaped area with high fluorodeoxyglucose uptake was observed, with a maximum standardized uptake value of 11.6.

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**Fig. 2.** Postoperative pathological examination identified the liver mass as squamous cell carcinoma, (A) locally close to the liver capsule (original magnification  $\times 20$ ), with (B) visible perineural invasion (original magnification  $\times 10$ ) and (C) keratin pearls (original magnification  $\times 20$ ). (D) The peritoneal nodule was considered as metastatic cancer (original magnification  $\times 10$ ). Immunohistochemical staining revealed 60% positivity for (G) Ki67 (original magnification  $\times 10$ ) and positivity for (E) p40 (original magnification  $\times 10$ ), (F) CK5/6 (original magnification  $\times 10$ ), (H) pCEA (original magnification  $\times 10$ ), and (I) MUC-1 (original magnification  $\times 10$ ).

A 69-year-old man presented with a 7-day history of upper abdominal pain and asthenia. He had a history of alcohol consumption for 10 years, and preoperative tests for hepatitis B and C viruses were negative. The patient underwent enhanced-computed tomography (CT) of the upper abdomen and positron emission tomography-CT (PET-CT), both of which indicated a malignant tumor in the left lateral lobe of the liver (Fig. 1). Enhanced-CT also revealed hepatolithiasis accompanied by mild dilatation of the intrahepatic bile ducts, mainly located in the left lobe of the liver. The tumor marker CA19-9 was slightly elevated (43.93 U/mL, normal:  $< 39$  U/mL), but other tumor markers (AFP, CEA, CA125) were all within normal ranges. We performed surgery on the third day, after excluding any contraindications. Intraoperative exploration revealed a hard mass with unclear boundaries in segments 2 and 3, protruding from the liver surface, with adhesion to the omentum and diaphragm. No enlarged lymph nodes were detected within the area of the porta hepatis. Multiple hard peritoneal nodules (maximum diameter 1.5 cm) were found during intraoperative exploration, which were unexpected based on the preoperative enhanced-CT and PET-CT results. We performed hepatectomy

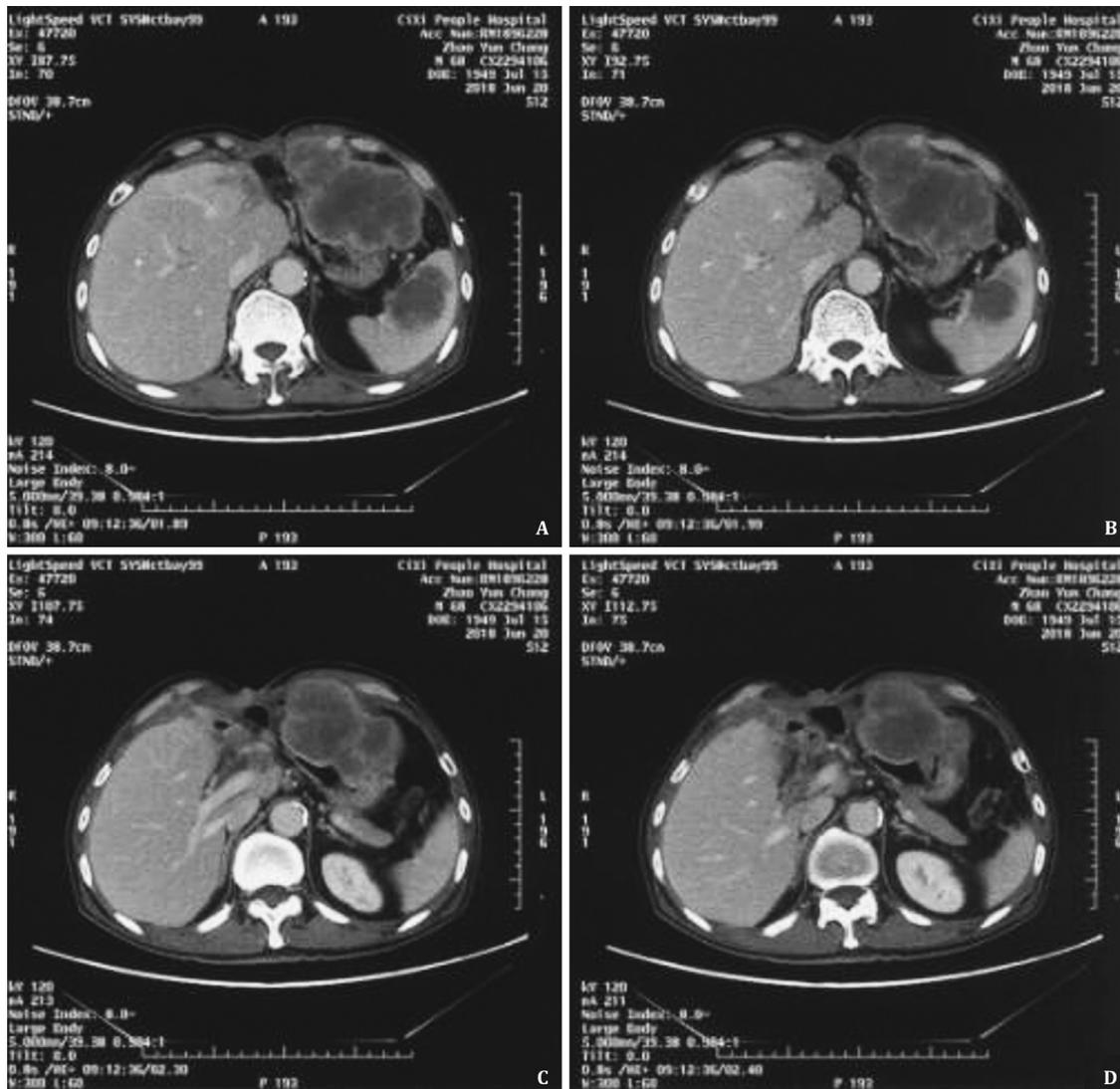
of the left lateral lobe and removed the peritoneal nodules completely. Postoperative pathological examination showed the liver mass to be a moderately differentiated PHSCC, locally close to the liver capsule (Fig. 2(A)), with massive necrosis, visible perineural invasion (Fig. 2(B)), and keratin pearls (Fig. 2(C)). The tumor was identified as M0 according to microvascular invasion grading, and had a negative resection margin without satellite lesions. The liver tissues had chronic alcoholic steatohepatitis, consistent with the patient's history of long-term alcohol consumption, but there were no signs of obvious fibrosis or cirrhosis. Hepatolithiasis with bile duct dilatation was observed. The peritoneal nodules were proved as metastatic cancer (Fig. 2(D)). Immunohistochemical results were as follows: GPC-3 (–), p40 (+), CK5/6 (+), CK44 (+), Ki67 (60% positive), Hep-1 (–), CK18 (positive in some cells), CK7 (positive in some cells), CD34 (+), pCEA (+), CK19 (positive in some cells), MUC-1 (+), and GS (+) (Fig. 2(E)–(I)). After consultation with two oncologists, the patient received postoperative systemic chemotherapy with oxaliplatin 200 mg on the 1st day and gemcitabine 1.6 g on the 1st and 8th days in every 3-week-round, for six to eight rounds.



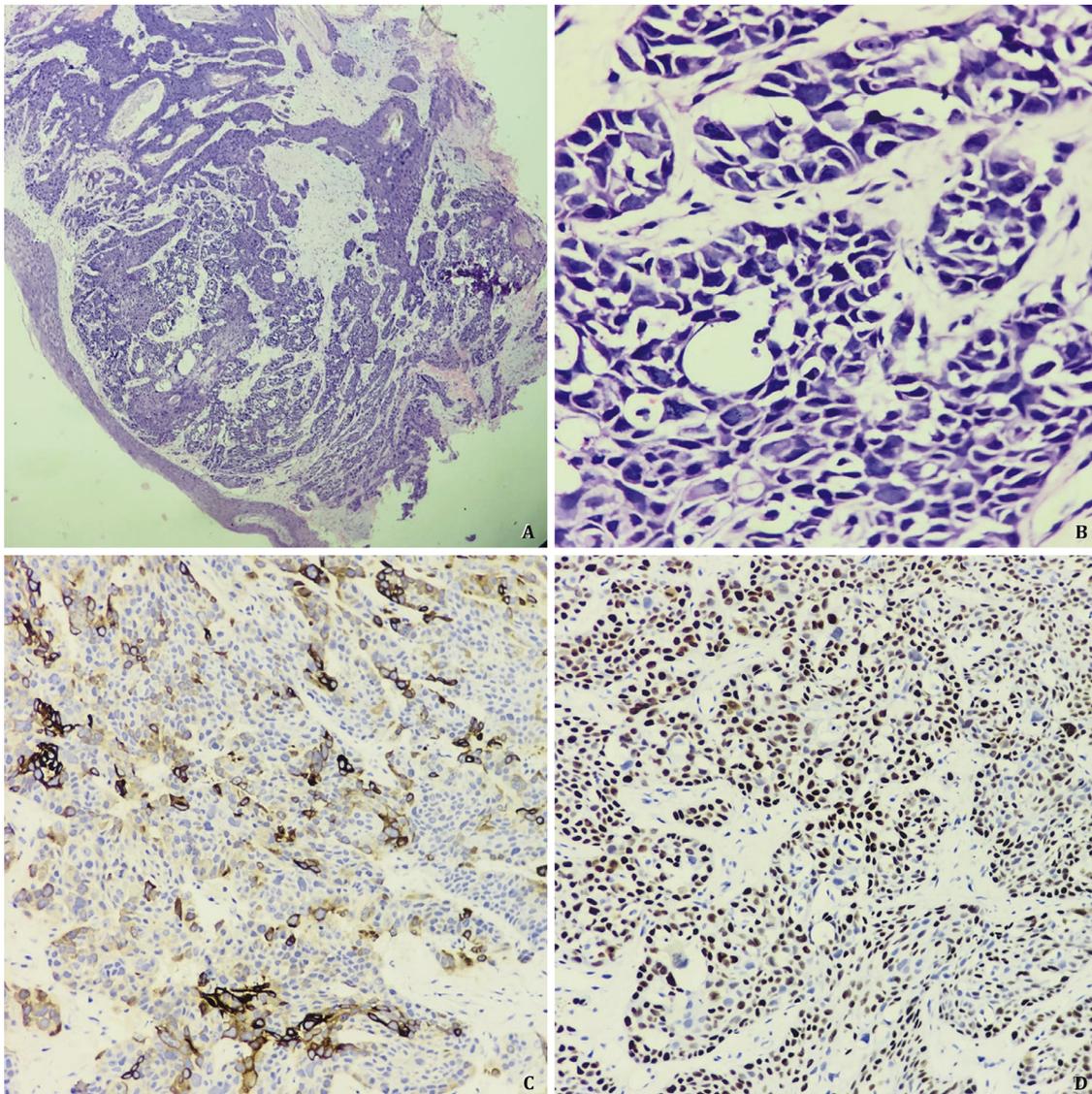
**Fig. 3.** A granuloma-like mass (2 × 2 cm) was found protruding through the upper part of the abdominal incision 3 months after surgery.

A granuloma-like mass measuring about 2 × 2 cm was detected protruding through the upper part of the abdominal incision 3 months after surgery (Fig. 3). Enhanced-CT revealed that the mass outside the incision was part of a large recurrent liver tumor with a total size of about 8 × 7 cm. Enhanced-CT also revealed multiple metastases in the hepatic hilar region, spleen, and abdominal cavity (Fig. 4). Biopsy of the abdominal incision lesion revealed metastatic squamous cell carcinoma (Fig. 5(A) and (B)). The immunohistochemical results were as follows: CK20 (–), CK7 (partially positive), villin (–), CK19 (–), Ki67 (70% positive), GPC-3 (–), CK5/6 (+), and p63 (+) (Fig. 5(C) and (D)). The patient died 4 months after surgery due to deterioration in his general condition.

The liver has no squamous epithelium, and PHSC is thus a rare and easily misdiagnosed disease, with only a few dozen reported cases [1–3]. PHSC occurs more frequently in men and has no specific clinical manifestations. However, PHSC is often associated with hepatolithiasis, hepatic cysts or abscesses, and intra-hepatic parasites [4], suggesting that these may be risk factors for PHSC as a result of chronic inflammation under constant stimulation. The results of laboratory tests, including serum tumor markers, are usually normal, but CT and magnetic resonance imaging may reveal a solid cystic mass, with enhancement in the solid



**Fig. 4.** Enhanced-CT scan of the upper abdomen 3 months after surgery revealed multiple malignant tumors in the hepatic hilar region, spleen, and abdominal cavity.



**Fig. 5.** Pathological examination of the biopsy from the abdominal incision lesion. Hematoxylin and eosin staining revealed metastatic squamous cell carcinoma ((A) original magnification  $\times 4$ ; (B) original magnification  $\times 40$ ). Immunohistochemical staining revealed partial positivity for (C) CK7 (original magnification  $\times 10$ ) and (D) positivity for p63 (original magnification  $\times 10$ ).

portion on contrast scan. PHSCC is easily misdiagnosed and should be distinguished from other conditions such as secondary hepatic squamous cell carcinoma [5], cholangiocarcinoma, primary hepatocellular carcinoma, liver abscess, and liver parasitic disease, with a definite diagnosis of PHSCC relying on pathological examination. Surgical resection is the first choice of treatment for PHSCC. Reports of adjuvant treatment are very limited, though a few reports [1,2] have suggested that systemic chemotherapy with oxaliplatin or 5-fluorouracil might be used as adjuvant treatment before and after surgery. However, the prognosis of PHSCC remains very poor and most patients die within 1 year after diagnosis as a result of the high incidence of distant metastasis [4].

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#### Contributors

MJX and TF proposed the study. YH and LC performed the research and wrote the first draft. FH, SKY and DGS collected and analyzed the data. All authors contributed to the design and interpretation of the study and to further drafts. MJX and TF contributed equally to this article. GWY is the guarantor.

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#### Ethical approval

The patient has given verbal consent to publication of his case.

### Competing interest

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

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