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Hepatocellular Carcinoma Presenting as Testicular Mass ： A Case Report

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Abstract

An 84-year-old man presented with an enlarged scrotum. He had no gastrointestinal complaints. Scrotal ultrasonography showed a 2-cm left testicular mass and a 1-cm mass on the right. The serum PSA and β-HCG were in the normal range, but his AFP level was very high. Abdominal ultrasonography revealed a huge tumor in the left lobe of liver. A bilateral orchiectomy was performed, and pathology examination demonstrated hepatocellular carcinoma metastatic to the left testis. Adenocarcinoma from any source very rarely metastasizes to the testis. We found only two reports of hepatocellular carcinoma with testicular metastases in the English literature. (J Intern Med Taiwan 2005; 16: 274-278)

Key Words ： Metastatic hepatocellular carcinoma, Testicular tumor

Introduction

A scrotal mass is a fairly commonly encountered clinical problem. The differential diagnosis includes such entities as testicular torsion, epididymitis, acute orchitis, strangulated hernia, and testicular cancer. Other benign causes of scrotal mass include hydrocele, varicocele, and spermatocele[1]. Rarely, non-testicular malignancy may be found in the testis, such as primary lymphoma or metastases from other cancers. These malignancies behave very differently from primary testicular tumors, so an accurate diagnosis is essential.

Case Report

An 84-year-old man was admitted because of progressive scrotal enlargement for six months. The patient was otherwise well except for peptic ulcer disease diagnosed 7 years prior to admission. At the same time, he had noted a small caliber urinary stream, but

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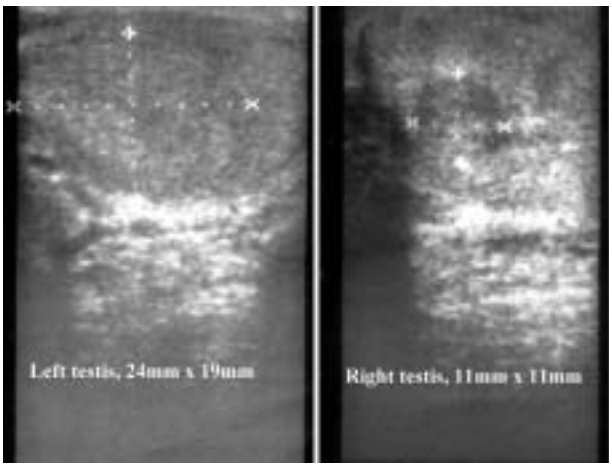

Fig.1.Scrotal ultrasonography showing a 2.4 cm x 1.9 cm mosaic mass in the left testis (left panel) and a 1.1 cm x 1.1 cm hypoechoic mass in the right testis (right panel).

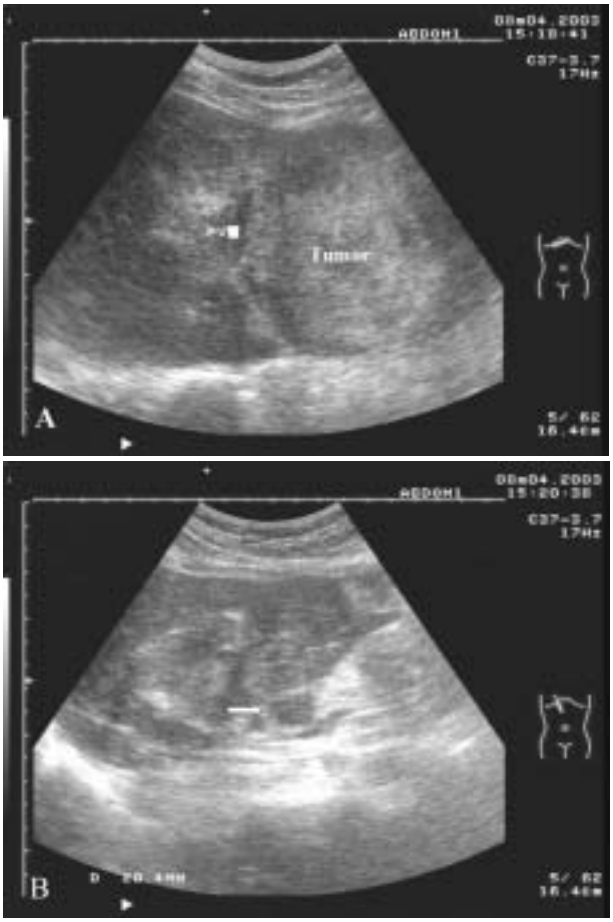

Fig.2.(A) Abdominal ultrasonography showing an ill-defined mosaic tumor, 10 cm in greatest diameter, in the left lobe of the liver. There is thrombosis in the left umbilical vein and the transverse portion of the portal vein. (B) A 2-cm hypoechoic lesion (arrow) in the left subphrenic area, thought to be lymphadenopathy.

a prostate ultrasound was normal. The patient had no history of viral hepatitis, and his family history was not contributory.

Two weeks before admission, the patient was seen in the urology clinic for evaluation of his scrotal enlargement, which was more pronounced on the left than on the right. Scrotal ultrasound revealed a 2.4 x 1.9-cm mass in the left testis and a 1.1-cm mass in the right testis. (Fig. 1) The PSA (0.07 ng/mL) and β-HCG (<5 mIU/mL) levels were within the normal range, but the AFP level was markedly elevated at 19617 ng/mL. A scrotal scan performed one week prior to admission demonstrated a highly vascular left testicular mass that was thought to be due to left epididymo-orchitis or, less likely, a vascular testicular tumor. Abdominal ultrasonography revealed a huge mosaic mass in the left lobe of liver. Subphrenic lymphadenopathy and left portal vein invasion were also suspected on that exam. (Fig. 2) The most likely diagnosis was hepatocellular carcinoma or possible liver metastases from another primary.

On physical examination, the patient's left testis was enlarged. There was a 5-cm palpable mass in the epigastric area, but the rest of the examination was unremarkable.

The patient underwent bilateral orchiectomy. In the left testis, there were multiple well-defined, rubbery-firm, tan tumors with purple, gray, or yellow tinges, measuring up to 1.4 cm in left testis. These tumors were all confined within the tunica albicans. Histologically, the tumor cells had vesicular nuclei with prominent nucleoli arranged in a solid pattern or in cords. There was marked necrosis. (Fig. 3) The left testicular tumor cells had focal immunoreactivity for AFP and strong immunoreactivity for cytokeratin and EMA but none for CD30 or placenta-like alkaline phosphatase. (Fig. 4) The results of immunostaining were thus consistent with a diagnosis of metastatic hepatocellular carcinoma. The epididymis and spermatic cord were free of tumor involvement. The right testicular mass was fibrotic with no evidence of tumor.

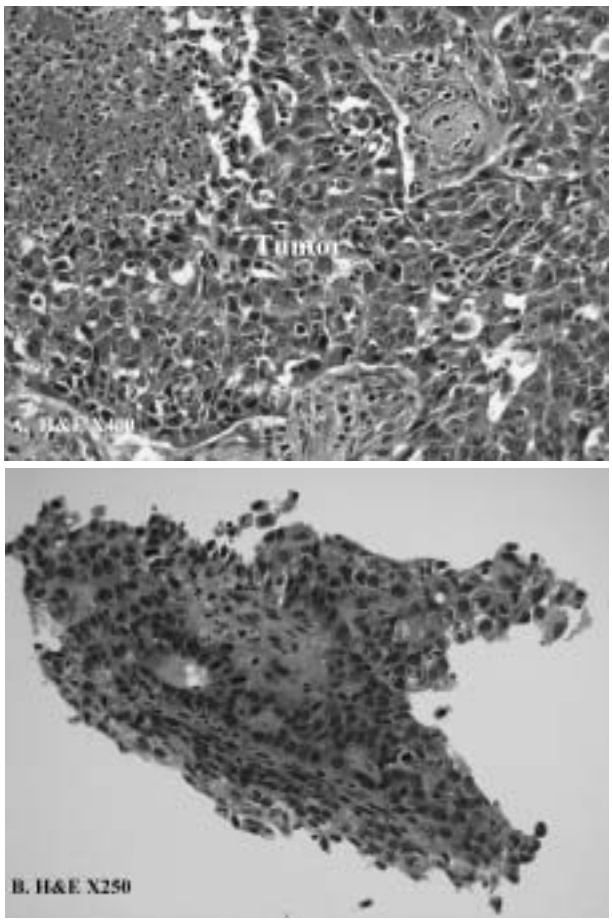

Fig.3.Tumor cells from the left testis having vesicular nuclei with prominent nucleoli arranged in a solid or cord pattern (A. H&E x400). Similar histologic features are seen in the liver biopsy specimen (B. H&E x250).

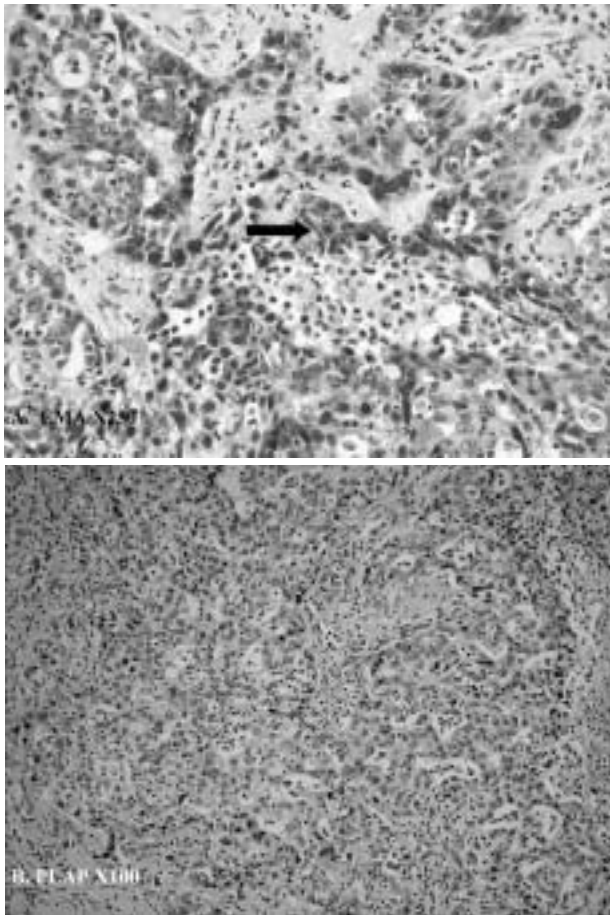

Fig.4.The testicular tumor is positive for endomysial antibody (A. EMA x250, arrow) and negative for placenta-like alkaline phosphatase (PLAP) (B. x100).

A needle biopsy on the hepatic tumor was performed. The microscopic findings were consistent with hepatocellular carcinoma with features similar to those of the testicular tumor. (Fig. 3) The HBSAg and anti-HCV were negative.

The patient was treated with trans-arterial embolization of the left hepatic artery accompanied by oral thalidomide (100 mg twice per day). However, his response to the treatment was poor, and he died of massive variceal bleeding about 3 months after diagnosis.

Discussion

Malignancies metastasizing to the testis are rare, particularly with the testicular mass as the presenting sign of the disease [2]. Such metastases are usually incidental findings at autopsy or following orchiectomy for prostate carcinoma. The incidence of testicular metastasis is reportedly 0.02% to 0.06% [3]. There are only a few case reports of testicular metastases being the first clue to a previously undiagnosed primary cancer [4]. Haupt et al [2]. reported that the commonest primary malignancies that metastasiae to the testis are prostate, followed by lung, gastrointestinal tract, melanoma, and kidney cancer. We found only two case reports in the English literature of hepatocellular carcinoma metastatic to the testis [5]. It's surprising this has not previously been reported in Taiwan, given the high incidence of liver cancer here.

The other main diagnostic consideration in our patient's case was a primary testicular tumor metastatic to the liver, particularly as he had no viral hepati-

tis and so no obvious risk factors for a hepatoma. The possibility that merited the most serious consideration was embryonal carcinoma. The immunohistochemical staining was helpful in distinguishing between these diagnoses. The fact that it was negative for CD30 and placenta-like alkaline phosphatase excluded the diagnosis of embryonal carcinoma. Another possibility was a hepatoid yolk sac tumor. This has been described arising in the ovary[6]. In addition, 19% of mixed germ cell tumors of the testis reportedly have hepatic-type cells within or adjacent to foci of yolk sac neoplasia[7]. However, a true hepatoid yolk sac tumor has never been reported in the testis, and a germ cell tumor would be a very unlikely finding in an 84-year-old man[8]. Further histologic features that argue against this diagnosis were the multifocality of the tumor, the fact that all the lesions were confined within the tunica albicans, and the lack of involvement of the epididymis or spermatic cord. By contrast, 80% of germ cell tumors invade beyond the tunica albicans[9]. Finally, the hepatic biopsy specimen had features typical of primary hepatocellular carcinoma, which effectively excludes the possibility of a primary testicular tumor metastatic to the liver. Given the huge, solitary large hepatic tumor, the patient's age, the histologic findings, and the immunohistochemical results (Table 1), we are confident that the correct diagnosis in this case is hepatocellular carcinoma with testicular metastases.

Extrahepatic metastases reportedly occur in 14.0% to 36.7% of cases of hepatocellular carcinoma[10,11], including to the lung in 18% to 55% of patients, lymph nodes in 26.7% to 53%, bone in 5.8% to 38 %, and the adrenal gland in 8.4% to 15.4%[12-14]. We think the route of metastasis in our patient was most likely lymphatic spread. Natsuizaka et al. reported that the median survival in patients with metastatic hepatoma was 7 months (range: 1 to 59 months) and the 1-year survival a dismal 24.9%[15]. Our patient's death within three months of diagnosis is consistent with the very poor prognosis in such cases.

Table 1.

	Patient	HCC	Embryonal Carcinoma	Hepatoid Yolk Sac Tumor
AFP	+	+	+	+
Cytokeratin	+	+	+	+
α-1 antitrypsin	+	+	+	+
PLAP	−	−	+	±
CD30	−	−	+	−
EMA	+	+	−	−

*PLAP: placenta-like alkaline phosphatase; EMA: endomysial antibody

In conclusion, patients with testicular mass may be primary testicular tumor or, in rare circumstance, metastasized from elsewhere. In this case, testicular mass and liver tumor were found concurrently which made the differentiation between primary and secondary tumor difficult. We suggested that biopsy of the tumors with immunostaining in histological study is vital to the diagnosis. On the other hand, this patient had high AFP level with testicular tumor which may mislead the diagnosis to germ-cell tumor once the liver tumor is not found. We cannot overemphasize the possibility of liver tumor in patients with high AFP whether he has testicular tumor or not.

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肝細胞癌合併睪丸轉移以睪丸腫瘤表現：一病例報告

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摘 要

一位84歲男性病人以陰囊腫大合併血清胎兒蛋白升高爲表現且無胃腸不適症狀，其P-SA及β-HCG皆正常且無病毒性肝炎病史；陰囊超音波發現一個左側睪丸約2公分大小的腫瘤及右側睪丸約1公分大小的腫瘤，腹部超音波發現一個大型的左肝腫瘤。患者接受了雙側睪丸切除手術，組織病理檢查發現左側睪丸腫瘤是由肝癌轉移而來。腺癌轉移至睪丸相當的罕見，就我們所知，肝細胞癌轉移至睪丸在文獻上僅有二例報告，本文報告此病例的臨床及病理特徵並作一簡短之文獻回顧。