Primary Squamous Cell Carcinoma of the Liver

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Abstract

Primary squamous cell carcinoma (SCC) of the liver is rare. Totally twenty-two such cases have been reported in the literature. Primary SCC of the liver has been reported to be associated with hepatic teratoma, hepatic cyst, or hepatolithiasis. We present the first case of SCC of the liver with no history of prior liver insult, a parasitic infection or pre-existing hepatic cysts. In general, the prognosis of primary SCC of the liver is dismal with overall survival less than one year, but our patient who was treated initially with radiation and later by surgical resection has no evidence of disease recurrence over 6 years.

Key words


Introduction

Primary squamous cell carcinoma (SCC) of the liver is rare and reported sporadically. In total twenty-two such cases have been reported in the literature. Primary SCC of the liver has been reported to be associated with hepatic teratoma, hepatic cyst, or hepatolithiasis [1-3,21]. Boscolo showed that a case of complete remission of poorly differentiated SCC of the liver could be achieved by systemic chemotherapy followed by surgery [4]. Kaji demonstrated that a case of primary SCC of the liver could respond remarkably to a hepatic arterial injection of low dose chemotherapeutic drugs [5]. To our knowledge, a total of nine cases of primary SCC of the liver have been reported and here we report a case presenting as a solid tumor and receiving successful hepatic resection with disease free survival for 9 months [1-9]. We present a unique case, unlike most of the other reported cases, which did not have a history of prior liver insult, a parasitic infection or pre-existing hepatic cysts and achieved long-term survival beyond 5 years.

Case report

A 56-year-old Hispanic male presented in September 2001 with anorexia, nausea, right upper quadrant abdominal pain and a 20-pound weight loss over the past 2-3 months. He had a past medical history of atrial fibrillation and hypertension, and a past surgical history of cholecystectomy. The patient was an ex-smoker with a 30-pack-year smoking history and was a non-drinker. Physical examination revealed a palpable edge of the liver with overlying tenderness. Laboratory work-up showed an elevated alkaline phosphatase of 365 U/l, elevated ALT and AST and an elevated total bilirubin of 10.5 mg/dl. A computed tomography (CT) scan of the abdomen and pelvis with contrast (Fig. 1) revealed a 3 cm hypodense mass in the left hepatic lobe near the porta hepatis with some peripheral enhancement on delayed imaging, however the mass did not meet criteria for a benign hemangioma.
A CT guided fine needle aspiration biopsy of the mass returned positive for squamous cell carcinoma (Figs. 2, 3, 4) composed of squamous cells with keratinization. The positive staining of an acidic CK 14 indicated basal cells of keratinized squamous epithelium origin of the cancer cell. The strong, diffuse expression of biliary CK 19 confirmed the bile ductular ontogeny of the neoplastic cells. Thus tumor transformation from chronic inflammation of the biliary epithelium might explain its origin. Since TTF-I, an indicator of lung or thyroid was negative, metastatic lung or thyroid cancer to the liver was ruled out. Clinical, panendoscopy, chest CT, and ENT examination evidenced negative findings in the case. Taken together, the final diagnosis of primary SCC of the liver was made.

The patient underwent an extensive workup to search for a primary squamous carcinoma, including a CT scan of the chest, colonoscopy, upper gastroesophageal endoscopy and a triple endoscopy of the head and neck, all of which were negative. The patient was started on radiation therapy to the liver mass and para-aortic lymph nodes for local control and palliation, considering that the primary tumor would declare itself. A total of 6,000 Gy was given with excellent improvement in his overall well-being. However, 3 months after finishing radiation therapy, the patient again started developing nausea and worsening jaundice, and three new focal hepatic masses of approximately 3-4 cm diameter were noted on the CT imaging. He eventually underwent an extended left lobectomy. Post-operative pathology showed squamous cell carcinoma present in all three nodules extending up to but not through the thickened hepatic capsule, with a 1 cm negative margin. The first nodule that was treated with radiation showed a necrotic center.

The patient’s post-operative recovery was good. A diagnosis of primary squamous cell carcinoma of the liver was made at this time and no further adjuvant treatment was given. Routine observation was continued in the oncology clinic with periodic CT scans of the abdomen and pelvis. No further evidence of disease or recurrence of the tumor has been noted to date, and his last CT scan from November 2007 over 6 years after his initial diagnosis showed no recurrence of disease.

**Discussion**

Primary SCC of the liver are very rare. A literature search reveals only approximately 20 cases, the first dating back to 1934 [10]. In a majority of these case reports, a pre-existence of chronic hepatic cysts, either congenital hepatic-foregut cysts, or other benign non-parasitic cysts were noted [1-14]. Other reports note the presence of primary squamous liver carcinomas in association with teratomas [10], intrahepatic cholesterol gall stones [15], liver cirrhosis [16] or epidermoid cysts [17, 18]. Despite such variations in its presentation, the precise steps leading up to the development of the carcinomas are not exactly clear. It is proposed that since these cysts are lined by a squamous epithelium, over the years, this epithelium may undergo dysplasia, metaplasia and ultimately, malignant transformation [1-3, 8]. Our case is unique in the sense that, unlike most of the other reported cases, our patient did not have a history of prior liver insult, a parasitic infection or pre-existing hepatic cysts.

Clinically, patients may present with abdominal pain and/or jaundice, with associated weight loss, loss of appetite and nausea or vomiting. On examination, hepatomegaly with tenderness on palpation may be found.

Laboratory data usually reveals abnormal liver functions tests. A good quality CT imaging of the liver helps to evaluate the primary tumor, and also gives useful information regarding the number of lesions, their location, extent, degree of invasion into the surrounding structures, whether any intrahepatic biliary dilation is present and whether the lesion is surgically resectable. Diagnosis must be proved by biopsy [20, 21].

Surgical resectability plays an important role in the prognosis of this malignancy, as patients who have had a complete resection with a good post-surgical outcome seem to do better [11], as is also evident in our case. Complete remission of SCC after systemic chemotherapy consisting of cisplatin (CDDP) and 5-fluorouracil (5-FU) and surgery...
has been reported (4). Hepatic arterial injection of low dose anti-cancer drugs (CDDP and 5-FU) can achieve remarkably good response [5]. As shown in the case, the postoperative course was smooth with disease free survival for 9 months. Aggressive and meticulous follow up is required. If tumor recurrence is detected, re-hepatectomy, systemic chemotherapy (CDDP + 5-FU), or hepatic arterial infusion of low dose chemotherapy can be considered [4, 5].

The prognosis of primary SCC of the liver is dismal with an overall survival of less than one year [7-9], because the tumor is usually diagnosed late. The prognosis of this tumor appears to become unfavorable once the malignancy spreads beyond the cystic wall from where it has originated and into the hepatic parenchyma [21]. In a review of the literature on squamous cell liver carcinomas, Weimann et al give the survival of cases reported from 1958 to 1994, the longest of which was 6 months [19]. Our patient is currently disease free 6 years into his diagnosis.

At present, there are no guidelines for adjuvant and palliative chemotherapy for this neoplasm. However, since most patients have presented at an advanced stage, the prognosis is usually poor. Palliation may also be done with radiation, but the response may be short, as seen in our case. With advances in the surgical techniques of hepatic lobectomy, an improvement in the survival rates of this case. With advances in the surgical techniques of hepatic lobectomy, an improvement in the survival rates of this case. With advances in the surgical techniques of hepatic lobectomy, an improvement in the survival rates of this case. With advances in the surgical techniques of hepatic lobectomy, an improvement in the survival rates of this case. With advances in the surgical techniques of hepatic lobectomy, an improvement in the survival rates of this case. With advances in the surgical techniques of hepatic lobectomy, an improvement in the survival rates of this case. With advances in the surgical techniques of hepatic lobectomy, an improvement in the survival rates of this case. With advances in the surgical techniques of hepatic lobectomy, an improvement in the survival rates of this case. With advances in the surgical techniques of hepatic lobectomy, an improvement in the survival rates of this case. With advances in the surgical techniques of hepatic lobectomy, an improvement in the survival rates of this case. With advances in the surgical techniques of hepatic lobectomy, an improvement in the survival rates of this case.

To conclude, we describe the first case of a primary SCC of the liver without history of prior liver insult, successfully treated by radiation and surgical resection. Postoperative course was uneventful and the patient is still alive at 6 years from the initial diagnosis. Aggressive and meticulous follow-up is necessary. Moreover, future attempts need to be made to evaluate the efficacy of agents inhibiting the epidermal growth factor receptor (EGFR) pathway, such as cetuximab and erlotinib.

References