Hepatectomy Cures a Cough: Giant Cavernous Hemangioma in a Patient With Persistent Cough

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Cavernous hemangiomas are the most common type of benign liver tumor. Although these tumors are often asymptomatic, they can occur with an array of symptoms. The authors describe a case of a 51-year-old man who presented to the emergency department with a relentless cough, nausea, and abdominal pain. Results of a computed tomography scan suggested the patient had a giant cavernous hemangioma on his liver; microscopic evaluation confirmed this diagnosis. The hemangioma was initially deemed unresectable and the patient was treated with one session of hepatic artery embolization. The embolization was unsuccessful at easing the patient’s symptoms, however, and a hepatic lobectomy and resection was performed. After surgical intervention, the patient’s symptoms resolved. The present case illustrates an unusual instance in which chronic cough was cured through hepatectomy for giant cavernous hemangioma. To our knowledge, no reports of coughing as a primary symptom of giant cavernous hemangioma have been previously reported in the literature.

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cancer of the jaw, ear, and parotid gland. The patient was taking colesevelam hydrochloride for his hyperlipidemia. Despite the use of acid suppression, the patient’s pain did not improve. In addition, he could not elicit reflux during positional therapy.

The patient’s physical examination revealed an enlarged liver and marked tenderness in the right-upper quadrant and epigastrium regions of his abdomen. The examination did not show evidence of scleral icterus, splenomegaly, ascites, spider angioma, or palmar erythema. Results of the patient’s ear, nose, and throat and lung examinations were normal. Laboratory findings (reference range) were as follows: hemoglobin level, 9.2 g/dL (13.5–16.7 g/dL); blood platelet count, 472 × 10^9/µL (150–400 × 10^9/µL); prothrombin time, 16.4 seconds (11.5–14.3 seconds); albumin, 3 g/dL (3.9–4.8 g/dL); and alkaline phosphatase, 214 U/L (39–117 U/L) with normal transaminase levels. Viral serologies, autoimmune markers, iron levels, and alpha fetoprotein levels were unremarkable. Genetic testing was negative for von Hippel-Lindau disease. A computed tomography (CT) scan of the chest, abdomen, and pelvis was completed with intravenous and oral contrast. The results of the CT scan revealed several small masses in the right lobe of the liver and complete replacement of the left lobe of the liver by a mass that was approximately 16 × 11 × 12 cm³ (Figure 1 and Figure 2). Results of a tagged red blood cell scan confirmed uptake in three homogenous areas of the right lobe of the liver, peripheral uptake in a large region of the left lobe of the liver, and a decreased central uptake consistent with CH. The presence of CH was confirmed with a microscopic evaluation.

After an exploratory laparotomy, the CH in the patient’s liver was initially deemed unresectable and the patient was treated with one session of left-sided hepatic artery chemoeMBOLization. While the patient’s symptoms initially improved, they gradually returned over the next 6 months. At a follow-up examination 6 months after the hepatic artery embolization, a CT scan revealed no change in the size of the GCH. Results of the follow-up examination also showed new findings including a small cervical CH at the C7 vertebrae, an 8 × 6 × 8 mm³ intracanalicular acoustic neuroma, a bony tumor of the left-sided zygomatic bone, and a 5 × 5 × 9 mm³ prolactinoma.

Nine months after embolization, the patient underwent excision and reconstruction of the vascular lesion on his left-sided zygomatic bone because of progressive pain in the area. Three months after the zygomatic bone resection, serial imaging showed little change in the acoustic neuroma, C7 hemangioma, and prolactinoma. The patient’s symptoms of cough with insomnia and abdominal pain continued to persist.

Based on these findings, the liver transplant team reconsidered the patient for surgery. A left-sided hepatic lobectomy and resection of a 20 × 10 × 12 cm³ GCH was performed. The smaller CHs in the remainder of the patient’s liver were not resected. The patient’s postoperative course was uncomplicated, and he was discharged after a 3-day hospital stay. After the surgery, the patient’s cough resolved within 1 week and the rest of his symptoms resolved within 2 weeks. He has remained asymptomatic for more than 1 year.

**Comment**

The present case is notable because the patient with GCH presented with persistent cough as a primary symptom. Giant cavernous hemangiomas have been known to cause an array of symptoms, but, to our knowledge, no reports of coughing as a primary symptom of GCH have been previously reported in the literature.

Cavernous hemangiomas are typically diagnosed by identifying classic patterns on imaging studies. For example, ultrasonography will show an isoechogenic lesion with a hyper-echoic rim in the abdomen of a patient with CH. However, ultrasonography is limiting when used as the single tool for diagnosis because, with this method, images of malignant tumors can often have appearances similar to CHs. Technetium 99m-labeled red blood cell imaging has an 89% sensitivity and almost 100% specificity for CHs larger than 2 cm. However, rare false-positive results from hypervascular malignancies have been reported. A CT scan with intravenous contrast will often show a peripheral ring of enhancement, with central filling on delayed images. Magnetic resonance imaging of the abdomen shows similar peripheral enhancement followed by central enhancement of the CH. T2-weighted imaging has a 100% sensitivity and a 92% specificity when used to differentiate CH from malignant hepatic tumors.

In asymptomatic patients with CHs smaller than 10 cm, observation is recommended. Intervention is recommended for CHs that occur with symptoms. If embolization fails, as in our case, surgery is considered a viable treatment option. Current surgical options for the treatment of patients with CH include: liver resection, enucleation, hepatic artery ligation, and liver transplantation. Of these, enucleation is the preferred treatment option because it is associated with the lowest risk for complications. Complication rates for enucleation range from 11% to 16%; mortality rates range from 0% to 2.5%. By comparison, complication rates for hepatectomy have been reported to be as high as 44%. In our patient, enucleation was not possible without lobectomy because the entire left lobe was replaced with GCH.

**Conclusion**

Considering chronic cough is a common symptom accounting for 30 million primary care physician visits per year, it is important for physicians to consider atypical diagnoses. In the present case, we believe the GCH irritated the patient’s diaphragm, causing the persistent cough. The patient’s cough
went away after the removal of the GCH, leading us to believe the hepatic lobectomy and resection was responsible for resolution of his symptoms. More than 1 year after the surgery, the patient’s symptoms of cough, fevers, anemia, and abdominal pain had not returned.

References


