

## Use of Cyanoacrylate Glue for Sclerosis of a Recurrent Symptomatic Hepatic Cyst

From: Fei-Shih Yang, MD,  
She-Meng Cheng, MD,  
Yi-Yung Yu, MD,  
Jon-Kway Huang, MD

From the Department of Radiology, Mackay Memorial Hospital (F.S.Y., S.M.C., Y.Y.Y., J.K.H.), 92, Section 2, Chung San North Road, Taipei, Taiwan 10449, R.O.C; and from the Department of Radio-technology, Yuanpei Institute of Science and Technology College (F.S.Y.).

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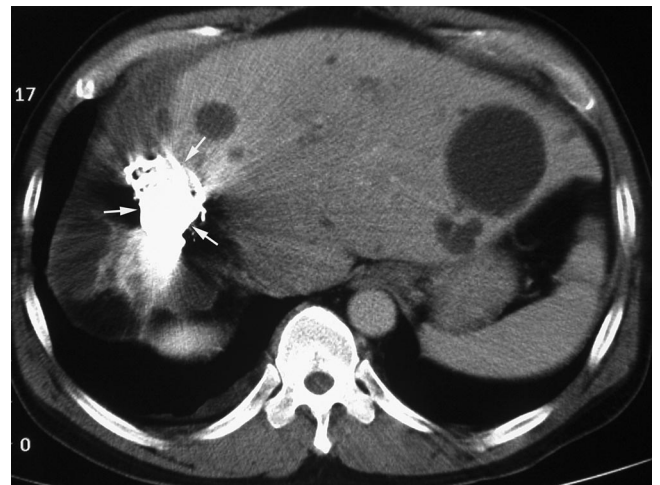
Large hepatic cysts may cause abdominal distension and tenderness, symptoms that can be relieved by reduction of the cyst volume. Sclerotherapy with absolute ethanol has been widely performed as a minimally invasive treatment for symptomatic hepatic cyst. We report a case of recurrent symptomatic hepatic cyst treated successfully with cyanoacrylate glue as a sclerosing agent.

A 59-year-old man presented with intermittent right upper quadrant pain for 1 year. Abdominal CT scan revealed multiple hepatic cysts in both lobes of the liver, the largest measuring 18 cm in diameter. Echo-guided aspiration yielded 1700 mL of chocolate-colored fluid. The fluid was negative for malignancy on cytologic examination, and serologic tests for parasites and bacterial culture of the fluid also yielded negative results. The diagnosis of hemorrhagic hepatic cyst was made. Aspiration relieved the symptoms for only a few months, after which the patient again developed intermittent right upper quadrant pain. A repeat CT again showed multiple hepatic cysts, with the largest measuring about 14 × 18 × 15 cm. The largest cyst was drained percutaneously, and 3 days later, after another 50 mL of fluid had been drained, 30 mL of 99% ethanol was injected over 20 minutes to sclerose the cyst. The patient was asked to rotate his trunk so that the alcohol could evenly coat the epithelial lining of the cyst. The same procedure was repeated again the next day to complete the sclerotherapy. However, 3 months later, intermittent abdominal pain and fullness again recurred. A recurrent 11-cm hepatic cyst was seen on CT (Fig 1). After conservative treatment failed to relieve the symptoms, a second attempt was made to ablate the cyst, this time using a solution of 0.5 mL of cyanoacrylate glue in 5 mL of lipiodol, followed by 5 mL of 20% glucose in water. On follow-up CT 3 and 9 months after cyanoacrylate glue ablation, the large hepatic cyst had almost completely collapsed (Fig 2).

Simple aspiration of hepatic cysts is often ineffective because the fluid usually reaccumulates (1). Destruction of the secretory epithelium of the cyst is necessary to prevent recurrence. Operative unroofing of the lining epithelium or sclerosing therapy is often performed to treat symptomatic hepatic cysts. Sclerotherapy is preferred because of its minimum invasiveness, low cost, and effectiveness. Sclerosing agents that have been used include iophendylate, absolute ethanol, ethanolamine oleate, povidone iodine, acetic acid, tetracycline, minocycline, glucose, phenol, and fibrin glue, with absolute ethanol being the most common. Ferris (2) suggested that the cyst fluid must be aspirated as fully as



**Figure 1.** CT scan obtained 3 months after the attempt at alcohol ablation shows a recurrent 9 × 11 × 10 cm cyst in the right lobe.



**Figure 2.** CT scan obtained 9 months after cyanoacrylate and lipiodol ablation shows retention of the high-density mixture (white arrow) and further shrinkage of the cyst.

possible before ablation. The volume of alcohol to be administered is 25% to 50% of the aspirated volume, instilled over 15 to 30 minutes. Any fluid remaining in the cyst may reduce the effectiveness of the sclerosing therapy by diluting the alcohol, which may be why our patient had a symptomatic recurrence after the attempt at alcohol ablation. *N*-butyl cyanoacrylate (Histoacryl-Blue; Braun, Melsungen, Germany) has been used for embolization of vascular lesions and occlusion of fistulas, as well as a sclerosing agent for ablation of renal cysts. Cyanoacrylate glue immediately polymerizes into an adhesive solid adherent to tissue, with eventual fibrosis of whatever it is in contact with.

In conclusion, our case demonstrates that cyanoacrylate may succeed in sclerosing a hepatic cyst after alcohol has failed. Cyanoacrylate may be a reasonable alternative to ethanol for the treatment of symptomatic hepatic cysts.

## References

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### Percutaneous Transtracheal Computed Tomography–guided Biopsy of Cervical Esophageal Carcinoma: An Alternative Approach

**From:** Mei-Han Wu, MD,  
Ming-Sheng Chern, MD,  
Yu-Chung Wu, MD,  
Ming-Huei Sheu, MD, and  
Cheng-Yen Chang, MD  
School of Medicine  
National Yang-Ming University;  
Department of Radiology (M.H.W., M.H.S., C.Y.C.) and  
Section of Thoracic Surgery, Department of Surgery  
(Y.C.W.)  
Taipei Veterans General Hospital; and  
Eonway Health Maintenance Center (M.S.C.)  
Taipei, Taiwan

Editor:

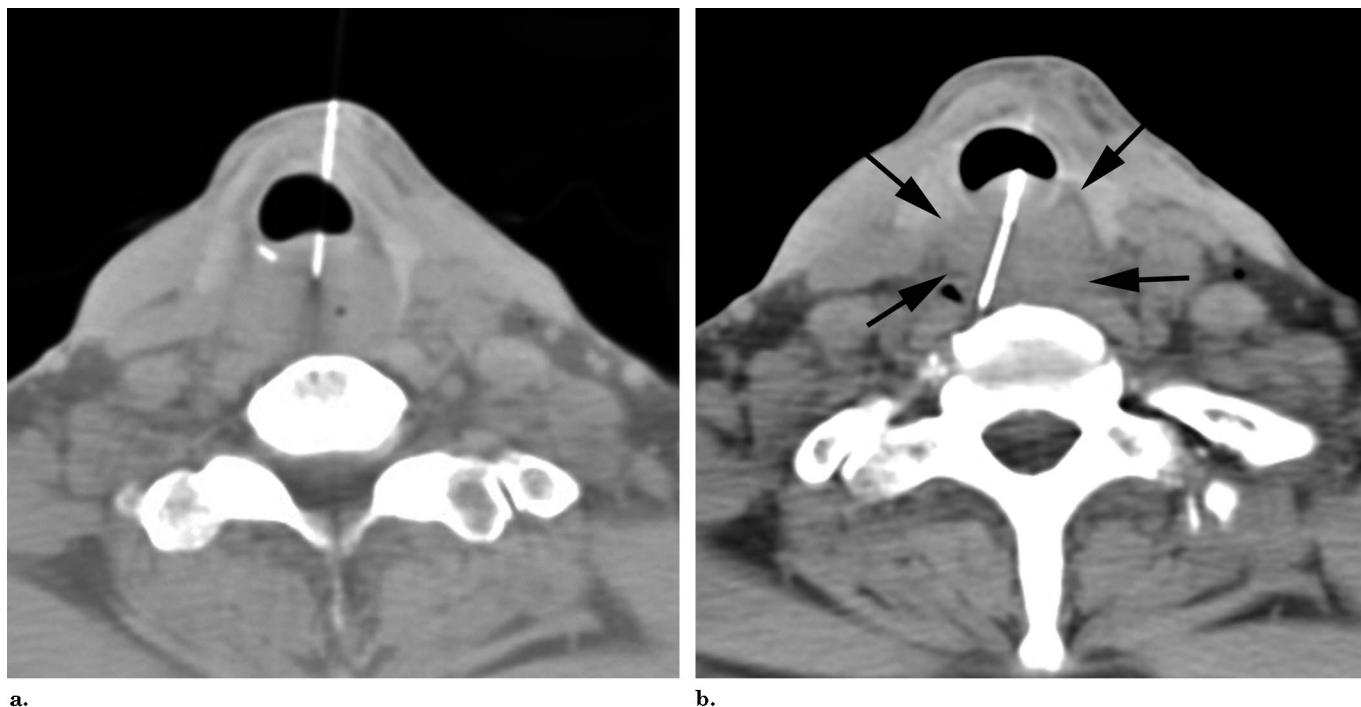
Endoscopic biopsy is a widely adopted procedure per-

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formed for obtaining specimens for histologic or cytologic examination of esophageal cancer. We report a patient who could not tolerate and refused the endoscopic procedure because his tooth broke on the first trial; a percutaneous computed tomography (CT)–guided biopsy was successfully performed and he was proven to have squamous-cell carcinoma of the esophagus.

A 63-year-old male patient was admitted to our institution with swallowing difficulty and weight loss of approximately 6 kg in the past 4 months. In the month before admission, his condition had deteriorated to the extent that he was able to tolerate only a liquid diet. He reported smoking one half pack of cigarettes and drinking 300 mL of red wine daily for 40 years and he had no history of esophageal disease. An upper gastrointestinal examination series suggested a cervical esophageal lesion, and he was referred to our hospital for further management.

A biopsy via rigid laryngoscopy was performed and revealed chronic inflammation. After obtaining clinical consultations and reviewing CT images, and considering the patient's refusal of further endoscopic procedures after a loose tooth broke on the first trial, a CT-guided percutaneous biopsy was arranged for tissue confirmation to facilitate further treatment planning. The patient received fluid via a venous route, supplemental oxygen via a nasal cannula, and pulse oximetry for monitoring blood oxygen saturation during the procedure. The biopsy was performed under CT guidance (Somatom Plus 4; Siemens, Erlangen, Germany) in supine position without moderate sedation. During CT scanning and needle advancement, the patient was instructed to hold his breath with persist inspiratory effort so the needle tip could approach the desired positions. Considering the



**Figure.** Images from a 63-year-old man with progressive swallowing difficulty and unexplained weight loss in the previous 4 months. (a) CT image with bone window shows a 19-gauge coaxial needle advanced through the trachea into the tumor. (b) CT image shows a 20-gauge automated biopsy gun placed coaxially into the tumor (arrowheads).