

Two Cases of Adrenal Abscesses Following Histoacryl[®] (N-butyl-2-cyanocrylate) Injection

Bo Young Lee, Jae Young Jang, Soung Won Jeong, Gene Hyun Bok, Jeong Ho Ham, Joo Young Cho, Joon Seong Lee, and Chan Sup Shim

Institute for Digestive Research, Digestive Disease Center, Soonchunhyang University Hospital, Seoul, Korea

We report two cases of adrenal abscesses that occurred following a Histoacryl[®] (N-butyl-2-cyanocrylate) injection for variceal bleeding. Patients had been diagnosed with alcoholic liver cirrhosis and gastric varices bleeding and received a Histoacryl[®] injection for the variceal bleeding. Patients had fever and abdominal tenderness and were diagnosed with an adrenal abscess at 2 months following the Histoacryl[®] injection. One patient received open drainage and the other underwent percutaneous drainage. When a patient has previously been injected with Histoacryl[®] for the treatment of variceal bleeding and presents with fever, an evaluation for an unusual complication such as adrenal abscess is recommended. (**Gut Liver 2011;5:242-244**)

Key Words: Adrenal abscesses; Histoacryl; Variceal bleeding

INTRODUCTION

Histoacryl[®] (N-butyl-2-cyanocrylate) is the tissue-adhesive cyanoacrylate. It has been used world-wide to treat gastric varices bleeding since Sohendra *et al.* first reported its potential use

in 1986. Several complications such as embolism, infarction, septic shock, and rebleeding have been associated with Histoacryl[®] injection.

Adrenal abscess occurs mainly as a complication of a congenital anomaly in the neonate.^{1,2} But, in the adult, adrenal abscesses are associated with complications following urogenital and gynecological surgery,³ and they are rare in healthy individuals.^{4,5} We report two cases of adrenal abscesses that occurred after Histoacryl[®] injection for the treatment of variceal bleeding.

CASE REPORT

1. Case 1

A 54-year-old male was referred for fever and chills. He had been diagnosed with alcoholic liver cirrhosis and gastric varices and underwent Histoacryl[®] injection to treat variceal bleeding in December 2005. At admission (April 2006), his temperature was 38.5°C, and he had tenderness on the left costovertebral angle. The abdominal computed tomography (CT) scan showed a peripheral enhanced cystic lesion, approximately 6.2×3.2 cm, in the left adrenal gland and radio-opaque density in the adrenal

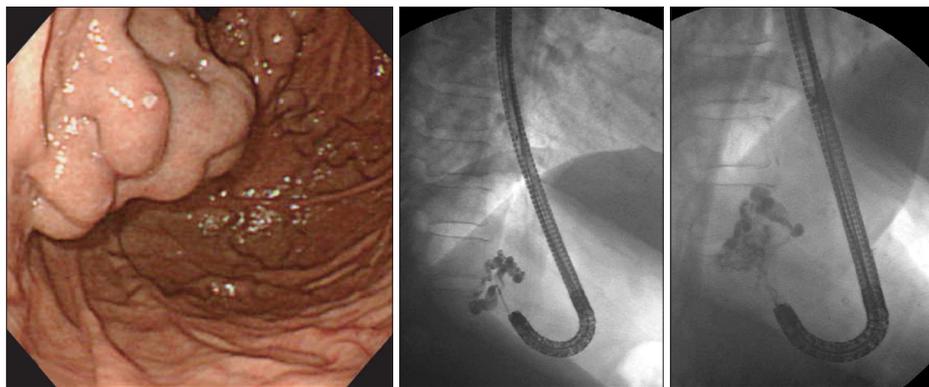


Fig. 1. Histoacryl injection. Endoscopic findings show venous engorgements in cardia and histoacryl material is seen in the X-ray.

Correspondence to: Jae Young Jang

Institute for Digestive Research, Digestive Disease Center, Soonchunhyang University Hospital, 22 Daesagwan-gil, Yongsan-gu, Seoul 140-887, Korea
Tel: +82-2-709-9863, Fax: +82-2-709-9696, E-mail: jyjang@hosp.sch.ac.kr

Received on February 16, 2009. Accepted on June 2, 2010.

pISSN 1976-2283 eISSN 2005-1212 DOI: 10.5009/gnl.2011.5.2.242

© This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

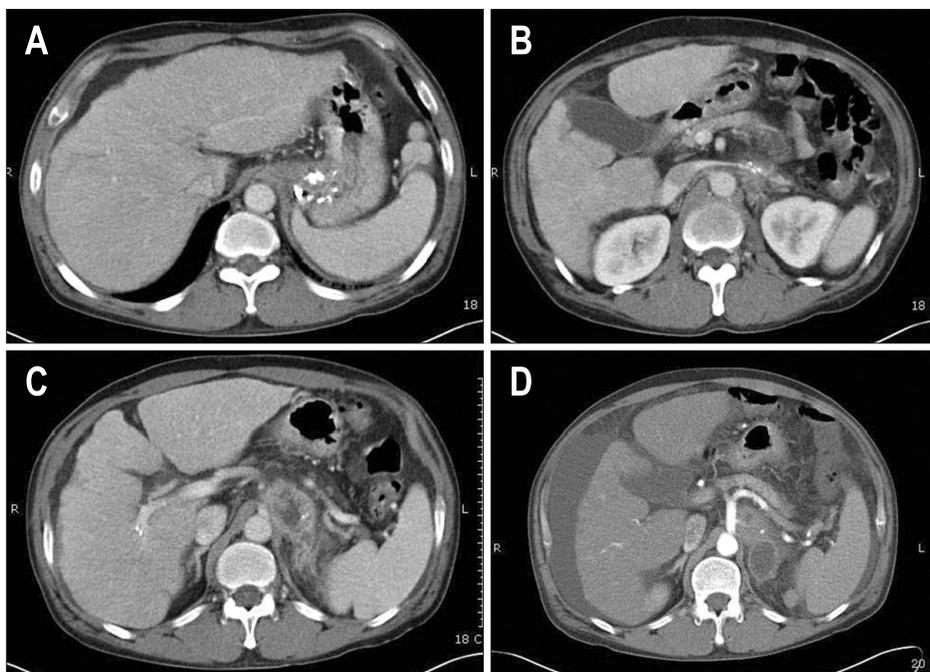


Fig. 2. Abdominal computed tomography scan showing a radio-opaque density in the adrenal vein thought to be Histoacryl material (A, B) and a peripheral enhanced cystic lesion approximately 6.2×3.2 cm in size in the left adrenal gland (C, D).



Fig. 3. Histoacryl injection. Venous engorgements are noted in fundus.

vein, which was thought to be glue formation induced by Histoacryl®. The cystic lesion was regarded as an adrenal abscess by CT. The patient underwent open drainage, because percutaneous drainage was failed at the time. The operative finding showed a well capsulated abscess pocket. Although the operation was well done, he developed acute respiratory distress syndrome after operation and expired on the sixth day after the operation (Figs. 1 and 2).

2. Case 2

A 71-year-old female was admitted for fever and chills. She visited our hospital for hematemesis in January 2006, and was diagnosed with hepatitis C-related liver cirrhosis and gastric variceal bleeding. She underwent endoscopic Histoacryl® injection to treat the gastric variceal bleeding. At admission (July 2006), temperature was 39.2°C. She had lower abdominal pain and tenderness on the left costovertebral angle. Total bilirubin

level was 2.6 g/dL, and an abdominal CT scan showed a 6.0×5.5 cm cystic lesion in the left adrenal gland, which was diagnosed as an adrenal abscess. Percutaneous drainage was performed, so that symptoms as well as radiologic findings improved after 2 weeks. She has been followed up regularly as an outpatient, and follow-up CT scans have shown no evidence of abscess recurrence (Figs. 3 and 4).

DISCUSSION

Gastric varices are seen in 18% to 78% of patients with portal hypertension. Although the incidence of bleeding from gastric varices is relatively low (10-36%), when it does occur it is massive and increases patient mortality. Treatment modalities of gastric varices are endoscopic treatment (sclerotherapy, band ligation, etc.), transjugular intrahepatic protosystemic shunt (TIPS) and balloon-occluded retrograde transvenous obliteration

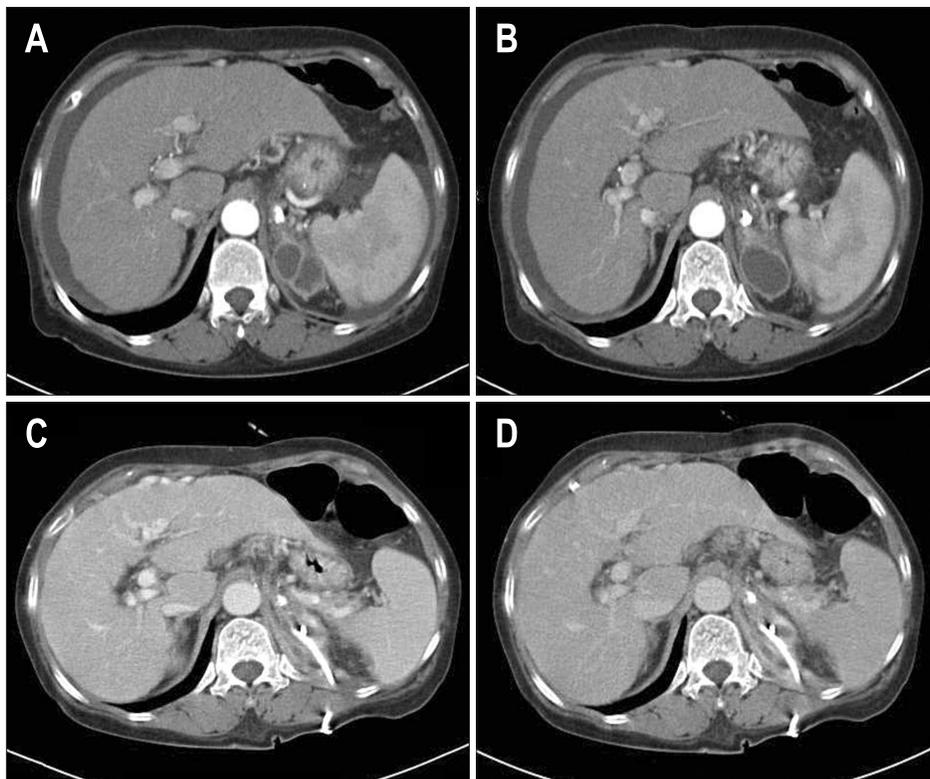


Fig. 4. Abdominal computed tomography scan showing a 6.0x5.5 cm sized cystic lesion in the left adrenal gland and radio-opaque density in the adrenal vein thought to be Histoacryl material (A, B). Improvement of the cystic lesion is seen after percutaneous drainage (C, D).

(B-RTO). Among these, endoscopic obliteration with Histoacryl® is the main treatment of gastric variceal bleeding. The success rate greater than 80% for initial hemostasis has been achieved with *N*-butyl-2-cyanoacrylate injection.⁶ The accompanying symptoms of Histoacryl® injection are fever, chest pain, ulcers, bleeding, and abdominal pain. Rarely, but fatal complications are embolism, infarction, septic shock, and rebleeding.^{6,7} To our knowledge, this is the first report of an adrenal abscess occurring after a Histoacryl® injection for variceal bleeding.

Abscesses in the adrenal gland are extremely rare in adults, and the majority are associated with postoperative complications following urogenital or obstetric surgery, or infection in the immuno-compromised host.^{4,5} Symptoms of adrenal abscess are fever, chills, and abdominal pain. The diagnosis of adrenal abscess is based mainly on imaging studies such as ultrasonography, CT, and magnetic resonance imaging,^{8,9} and treatment is based on surgical drainage or adrenalectomy.^{8,9} In these cases, the patient's symptoms were fever, chills, and costovertebral angle tenderness, and the diagnosis was made by abdominal CT imaging. Treatment for the patients was undertaken by drainage, surgery, or percutaneous methods.

The routes for gastric variceal drainage are a gastro-renal shunt or a gastro-caval shunt. In our cases, the adrenal abscesses developed 4–6 months after the Histoacryl® injection. The reason why adrenal abscesses after Histoacryl® injection was so delayed is that insufficient drainage and stasis of adrenal vein blood by the Histoacryl® material made a significant contribute to it.

When the patient who had been injected previous Histoacryl®

for the treatment of variceal bleeding has fever, the evaluations for an unusual complication such as adrenal abscess are recommended.

REFERENCES

1. Naga M, Foda A. An unusual complication of histoacryl injection. *Endoscopy* 1997;29:140.
2. Debnath PR, Tripathi RK, Gupta AK, Chadha R, Choudhury SR. Bilateral adrenal abscess in a neonate. *Indian J Pediatr* 2005;72:169-171.
3. Eitan R, Zuckerman B, Raveh D, Beller U. Puerperal adrenal abscess complicating chorioamnionitis. *Obstet Gynecol* 2002;99(5 Pt 2):909-911.
4. Kao PT, Liu CP, Lee CM, Hung YC. Non-typhi Salmonella adrenal abscess in an HIV-infected patient. *Scand J Infect Dis* 2005;37:370-372.
5. Chong YL, Green JA, Toh KL, Tan JK. Laparoscopic drainage of nocardial adrenal abscess in an HIV positive patient. *Int J Urol* 2004;11:547-549.
6. Seewald S, Sriram PV, Naga M, et al. Cyanoacrylate glue in gastric variceal bleeding. *Endoscopy* 2002;34:926-932.
7. Suri S, Agarwalla ML, Mitra SK, Bhagwat AG. Adrenal abscess in a neonate presenting as a renal neoplasm. *Br J Urol* 1982;54:565.
8. Midiri M, Finazzo M, Bartolotta TV, Maria MD. Nocardial adrenal abscess: CT and MR findings. *Eur Radiol* 1998;8:466-468.
9. Chong YL, Tan JK, Teo N. Clinics in diagnostic imaging (109). Nocardial adrenal abscess. *Singapore Med J* 2006;47:425-429.