Fatal complication after endoscopic ultrasound-guided celiac plexus neurolysis

A 57-year-old woman with a diagnosis of idiopathic recurrent pancreatitis and progressive epigastric pain radiating to her back was admitted to the hospital. Abdominal computed tomography (CT) showed a suspicious 3-cm pancreatic head mass involving the superior mesenteric artery (SMA) and vein. Endoscopic ultrasound (EUS) showed the suspicious pancreatic head mass with bile duct and main pancreatic duct dilatation and changes compatible with chronic pancreatitis. However, EUS-guided fine needle aspiration cytology was negative on three occasions.

EUS-guided celiac plexus neurolysis (EUS-CPN) was carried out using a 19-gauge needle. Absolute alcohol (10cc) and bupivacaine 0.5% (5cc) were injected on each side of the celiac takeoff. Color Doppler imaging after the procedure revealed the permeability of the SMA and celiac takeoff.

After the procedure, the patient experienced stabbing pain radiating to the back, with nausea, hypotension, and fever. CT demonstrated complete thrombosis of the celiac takeoff, as well as wall thickening and bubble-like pneumatosis of the stomach, duodenum, jejunum, ileum loops, and ascending colon. Signs of hepatic infarction of segments I and III, and near-total right-kidney and splenic infarction were discovered. Conservative management was carried out and the patient died 8 days later.

Major complications have rarely been reported using EUS-CPN or EUS-guided celiac plexus block (● Tab.1) [1–7]. The present case is the first to document a fatal outcome. The sclerosing effect of ab-

solute ethanol, arterial embolisms after injection, and vasospasm could explain the necrosis of organs distant to the celiac takeoff [8]. All cases of major complications due to CPN, except one, were reported in the setting of chronic pancreatitis (● Tab.1). The issue of using CPN in patients with chronic pancreatitis is still a matter of debate [9].

In conclusion, major complications of CPN can include death. It may be preferable to limit EUS-guided CPN to patients with histologically proven cancers.

Endoscopy_UCTN_Code_CPL_1AL_2AG

Competing interests: None

A. Z. Gimeno-García¹, A. Elwassief², S. C. Paquin³, A. V. Sahai³

¹ Gastroenterology Department, University Hospital of Canary Islands, La Laguna, Tenerife, Spain

² Internal Medicine Department, Gastroenterology Unit, Alhossien Hospital, Alazhar University, Cairo, Egypt

³ Gastroenterology Department, Saint Luc Hospital, Centre Hospitalier de l'université de Montréal, Montreal, Canada

References

- O'Toole TM, Schmulewitz N. Complication rates of EUS-guided celiac plexus blockade and neurolysis: results of a large case series. *Endoscopy* 2009; 41: 593–597
- Sahai AV, Lemelin V, Lam E et al. Central vs. bilateral endoscopic ultrasound-guided celiac plexus block or neurolysis: a comparative study of short-term effectiveness. *Am J Gastroenterol* 2009; 104: 326–329

- Muscatiello N, Panella C, Pietrini L et al. Complication of endoscopic ultrasound-guided celiac plexus neurolysis. *Endoscopy* 2006; 38: 858
- Mahajan R, Nowell W, Theerathorn P et al. Empyema after endoscopic ultrasound-guided celiac plexus pain block (EUS-CBP) in chronic pancreatitis: Experience at an Academic Center. *Gastrointest Endosc* 2002; 55: AB101
- Lalueza A, Lopez-Medrano F, del Palacio A et al. Cladosporium macrocarpum brain abscess after endoscopic ultrasound-guided celiac plexus block. *Endoscopy* 2011; 43: E9–E10
- Gress F, Ciaccia D, Kiel S et al. Endoscopic ultrasound (EUS) guided celiac plexus block (CB) for management of pain due to chronic pancreatitis (CP) a large single center experience. *Gastrointest Endosc* 1997; 45: AB173
- Ahmed HM, Friedman SE, Henriques HF et al. End-organ ischemia as an unforeseen complication of endoscopic-ultrasound-guided celiac plexus neurolysis. *Endoscopy* 2009; 41: E218–E219
- Yang ZW, Wang J, Zheng T et al. Ethanol-induced contractions in cerebral arteries: role of tyrosine and mitogen-activated protein kinases. *Stroke* 2001; 32: 249–257
- Kaufman M, Singh G, Das S et al. Efficacy of endoscopic ultrasound-guided celiac plexus block and celiac plexus neurolysis for managing abdominal pain associated with chronic pancreatitis and pancreatic cancer. *J Clin Gastroenterol* 2010; 44: 127–134

Bibliography

DOI <http://dx.doi.org/10.1055/s-0032-1309709>
Endoscopy 2012; 44: E267
 © Georg Thieme Verlag KG
 Stuttgart · New York
 ISSN 0013-726X

Corresponding author

A. V. Sahai, MD
 Division of Gastroenterology
 CHUM
 L'Hôpital Saint Luc
 1058 Rue Saint Denis
 Montreal
 Quebec H2X3J4
 Canada
anandsahai@gmail.com

Table 1 Reported complications secondary to the endoscopic ultrasound (EUS)-guided celiac plexus neurolysis (CPN) or celiac plexus block technique.

Author	Procedures	Complication	Indication	Technique	Substance
Gress et al. [6]	80	1 Retroperitoneal bleeding 1 Retroperitoneal abscess	CP	Bilateral	Alcohol + bupivacaine Triamcinolone + bupivacaine
Mahajan et al. [4]	167	3 Empyema	CP	Unstated	Triamcinolone + bupivacaine
Muscatiello et al. [3]	1	1 Retroperitoneal abscess	PC	Unstated	Alcohol + bupivacaine
Sahai et al. [2]	160	1 Retroperitoneal bleed	CP	Bilateral	Triamcinolone + bupivacaine
O'Toole et al. [1]	220	1 Retroperitoneal abscess	CP	Unstated	Triamcinolone + bupivacaine
Ahmed et al. [7]	1	1 Ischemia	CP	Unstated	Alcohol + bupivacaine
Lalueza et al. [5]	1	1 Brain abscess	CP	Unstated	Alcohol + bupivacaine
Current study	1	Ischemia/dead	PC?, CP	Bilateral	Alcohol + bupivacaine

CP, chronic pancreatitis; PC, pancreatic cancer.