

PICTURES IN DIGESTIVE PATHOLOGY

Portal air embolism after endoscopic retrograde cholangiopancreatography

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CASE REPORT

A 72-year-old woman presented with jaundice. A contrast-enhanced tomography (CT) showed dilation of the biliary ducts with no obstructive cause. Endoscopic retrograde cholangiopancreatography (ERCP) with a pre-cut papillotomy was performed, allowing smooth guide wire progression through what looked like the biliary tract. On cholangiogram, the opacification of bile ducts was brief, followed by rapid contrast washout, raising the possibility of contrast injection into vascular branches (Figs. 1 and 2). The procedure was immediately suspended. The patient was asymptomatic and no bleeding was observed. A CT angiogram showed air in the small portal branches of both hepatic lobes and in the retroperitoneum (Fig. 3). The patient's general condition was stable and intravenous antibiotics was started. Blood samples revealed a 1.5 g/dl decrease in hemoglobin. A CT scan performed after 48h indicated significant improvement. The patient was discharged after eight days.



Fig. 2. ERCP radiological view showing contrast inside of the portal intrahepatic branches with a similar trajectory of the normal biliary tract. However, after injection the opacification was brief and followed by rapid contrast washout.

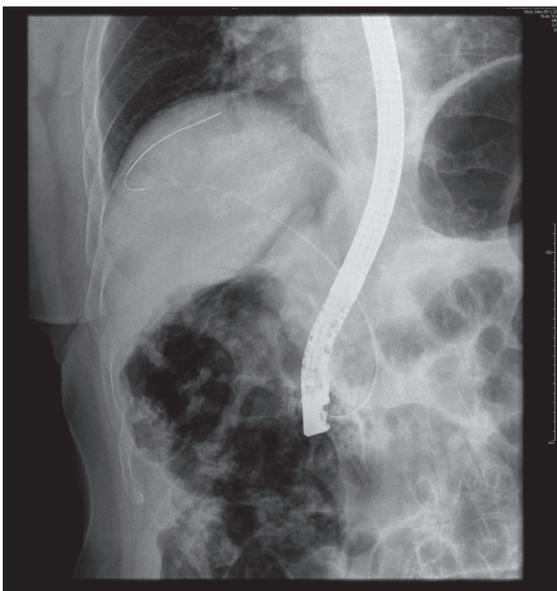


Fig. 1. ERCP radiological view showing cannulation of the portal vein with a guide wire with a similar trajectory of the normal biliary tract.

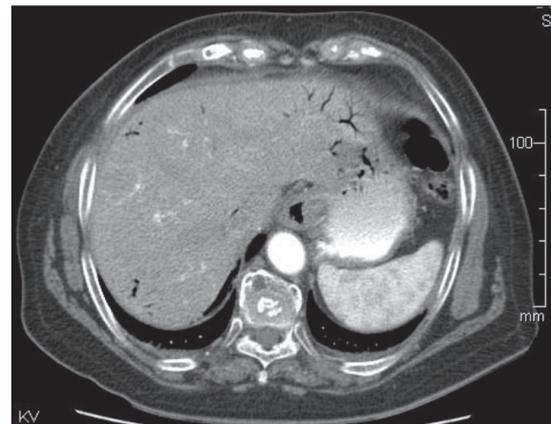


Fig. 3. Contrast-enhanced tomography angiogram obtained following ERCP showed air in the small portal branches in both hepatic lobes in the arterial phase. Main branches of the portal vein and hepatic artery were normal. Contrast inside the urinary tract confirmed a recent contrast injection in systemic circulation.

DISCUSSION

Portal venous gas and contrast opacification during ERCP is a rare complication, described in one of 6,000-8,000 procedures (1,2). Portal vein cannulation results from vascular laceration during pre-cut papillotomy/sphincterotomy or due to portobiliary fistulas associated with tumor infiltration or abscesses (1,2). Most cases reported had no serious morbidity or mortality although this complication carries potential life threatening consequences (1,3).

This report demonstrates that portal vein cannulation may be a source of confusion because the guided wire trajectory inside the portal vein may be similar to that of the biliary, and a contrast washout/opacified portal vein may be misinterpreted as an incompletely filled bile duct.

Vascular cannulation should be promptly recognized and the procedure must be immediately suspended.

REFERENCES

1. Espinel J, Pinedo ME, Calleja JL. Portal vein filling: An unusual complication of needle-knife sphincterotomy. *Endoscopy* 2007;39(Suppl 1):E245. DOI: 10.1055/s-2007-966156
2. Kalaitzakis E, Stern N, Sturgess R. Portal vein cannulation: An uncommon complication of endoscopic retrograde cholangiopancreatography. *World J Gastroenterol* 2011;17:5131-2. DOI: 10.3748/wjg.v17.i46.5131
3. Kawakami H, Kuwatani M, Kudo T, et al. Portobiliary fistula: Unusual complication of wire-guided cannulation during endoscopic retrograde cholangiopancreatography. *Endoscopy* 2011;43(Suppl 2). DOI: 10.1055/s-0030-1256150