Cerebral air embolism during endoscopic retrograde cholangiopancreatography: treatment with therapeutic hypothermia

Cerebral air embolism (CAE) during endoscopic retrograde cholangiopancreatography (ERCP) is an uncommon complication, but of the nine previously reported cases, seven had fatal outcomes and one was left with severe hemiparesis [1–3].

A 36-year-old man who was admitted with gallstone pancreatitis underwent two unsuccessful ERCPs and a successful percutaneous transhepatic cholangiogram. At subsequent ERCP for stent removal 5 days later, he suddenly became unresponsive with left conjugate eye deviation. Computed tomography (CT) of the brain confirmed CAE (Fig. 1a, b, arrowheads), which had completely resolved on imaging 24 hours later (Fig. 1c). Due to a lack of facilities, hyperbaric oxygen (HBO) therapy was not administered and he underwent therapeutic hypothermia for 24 hours. Subsequent examination revealed quadraparesis, which was worse on the left side. CT chest and transthoracic echocardiography were normal. Magnetic resonance imaging of the brain confirmed areas of acute ischemia involving middle and posterior cerebral arteries bilaterally.

Fig. 1 Cerebral air embolism images in a patient who underwent endoscopic retrograde cholangiopancreatography. a, b Computed tomography (CT) of the brain 1 hour after symptom onset revealed multiple cerebral air emboli (arrowheads). c 24 hours later, CT brain showed complete resolution of the air bubbles and sulci effacement. d Diffusion weighted magnetic resonance imaging of the brain confirmed areas of acute ischemia involving middle and posterior cerebral arteries bilaterally.

Endoscopy_UCTN_Code_CPL_1AM_2AZ

Competing interests: None

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References

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Endoscopy 2014; 46: E151–E152
© Georg Thieme Verlag KG Stuttgart · New York
ISSN 0013-726X

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