IMAGING IN INTENSIVE CARE MEDICINE

Paradoxical carbon dioxide embolism during laparoscopic nephrectomy



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A 64-year-old female underwent laparoscopic nephrectomy for a kidney carcinoma. Amid the operation, the end-tidal carbon dioxide dropped from 39 to 22 mmHg. The expected wake at the end of the procedure did not achieve. The magnetic resonance imaging demonstrated diffuse lesions with restricted diffusion localized in the intracerebral parenchyma (Fig. 1). Paradoxical carbon dioxide embolism was diagnosed. No signs of right-toleft shunting were detected by transesophageal echocardiography. The patient was given Rivaroxaban for anticoagulant therapy. The patient remained in a coma 20 days before she recovered. During the hospitalization, the patient developed acute appendicitis and lung infection. After 60 days, the patient was discharged from the hospital, but there were some abnormalities in cognitive function, balance dysfunction, swallowing dysfunction, speech disorder, normal muscle strength of the limbs, and grade 4 muscle strength of the right lower limb.

Cerebral infarction resulting from paradoxical carbon dioxide embolism is a rare complication of laparoscopic surgery. In this case, the possible pathophysiology may be that the potential right-to-left shunt opened during the operation.

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Fig. 1 T2-weighted imaging shows diffuse lesions in the bilateral cerebral and cerebellar hemispheres, basal ganglia, thalamus, and brain stem with the right-side predilection (**A**, **C**) and diffusion-weighted imaging demonstrates the diffuse-restricted lesions (**B**, **D**)

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Declarations

Conflict of interests

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DX wrote the article. CM reviewed the article and made the figures. All the authors contributed equally.

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Consent for publication

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