

A 23-Year-Old Woman with Sudden-Onset Blindness of the Right Eye

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A 23-year-old woman was presented for sudden-onset monocular blindness. Branch retinal artery occlusion in the right eye and multiple brain embolism were detected. Trousseau syndrome due to bilateral ovarian cancer was diagnosed; no embolic events were observed after anticoagulant therapy and surgical resection.

Key Words: Cerebral infarction—young adult—Trousseau syndrome—ovarian cancer

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A 23-year-old woman presented with sudden-onset blindness of the right eye. She was referred to an ophthalmologist, and central scotoma of the right eye and relative afferent pupillary defect was found, which reflected optic nerve dysfunction. Static visual field evaluation also revealed central scotoma of the right eye. Critical flicker frequency of the right eye was too low to measure. Fundus examination revealed branch retinal artery occlusion, including stenosis of the retinal arterioles and swelling of the retina (Fig 1, A). Diffusion-weighted magnetic resonance imaging disclosed multiple hyperintense lesions in the cerebral subcortex and basal ganglia bilaterally (Fig 1, B and C). Whole-body computed tomography demonstrated

mass lesions in bilateral ovaries. On gadolinium-enhanced pelvic magnetic resonance imaging, the right ovarian mass lesion was presented with heterogeneous enhancement and partition walls inside, and the contralateral ovary also showed abnormal gadolinium enhancement. Laboratory tests revealed an elevated serum D-dimer concentration (27.3 $\mu\text{g/mL}$), markedly high levels of carbohydrate antigen 19-9 (33,620 U/mL), and carbohydrate antigen 125 (46,495 U/mL). Intravenous unfractionated heparin was started. The patient first underwent right salpingo-oophorectomy and omentectomy. During surgery, the right ovarian cancer was pathologically diagnosed as seromucinous carcinoma, whereas the left one was a seromucinous borderline tumor. Therefore, the latter was partially resected and resulted in preservation of fertility. Postoperatively, the tumor was classified as pT2aNxM0, Stage IIA. At discharge, only central scotoma remained. Neither recurrence of ovarian cancer nor embolic events have been observed for 2 years after discharge.

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Discussion

Etiologies of ischemic stroke in very young patients include arterial dissection or reversible cerebral vasoconstriction syndrome. Trousseau syndrome (TS) is a thromboembolic disorder due to malignancy,¹ typically associated with mucin-producing tumors including ovarian cancer.² Although brain ischemic lesions can be multiple in diffuse areas in most cases³ blindness in a unilateral eye as an initial symptom in the present case is quite rare.⁴

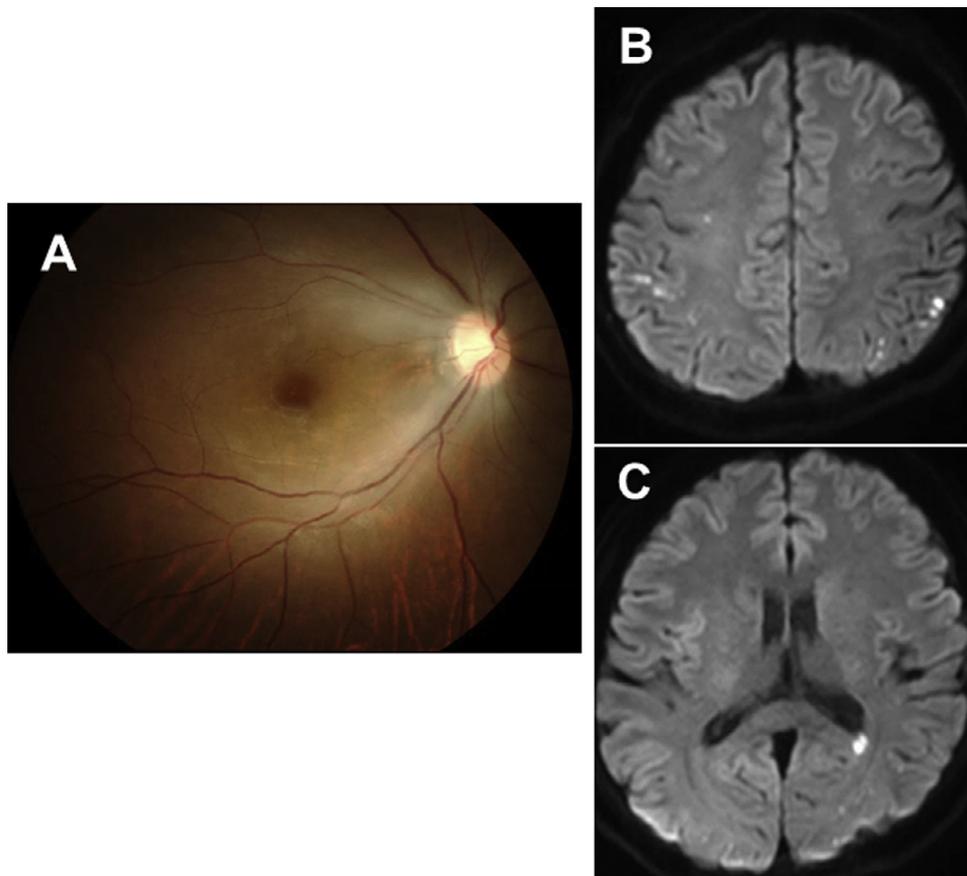


Figure 1. (A) Fundus examination of the right eye. Stenosis of the retinal arterioles and swelling of the retina are seen, indicating branch retinal artery occlusion. (B and C) Diffusion-weighted MRI of the brain. Acute multiple infarcts are observed bilaterally in the cerebral cortex, subcortex, and periventricular white matter, indicating an embolic mechanism.

An elevated serum D-dimer level is considered useful for the diagnosis of TS, which is presumably a result of coagulation abnormalities caused by underlying malignancy. Heparin administration has been recommended treatment for TS.⁵ However, many previous cases have presented with very poor prognosis despite treatment, probably because TS often comes to light in situations of unresectable and uncontrollable malignant diseases.

The contribution to improved prognosis of controlling the underlying malignant diseases in addition to heparin treatment has been suggested.² Ovarian cancer occurs at a younger age relative to mucin-producing tumors originating from other organs, and also causes ischemic stroke including TS at an earlier stage than other tumors.⁶ Fortunately, early diagnosis and rapid treatment lead to favorable outcome in our case.

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