Pheochromocytoma multisystem crisis with transient stress cardiomyopathy due to ruptured pheochromocytoma

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DESCRIPTION

A 64-year-old woman was transported to emergency room, with intense breast pain with impending shock. She had been diagnosed with mammary carcinoma, and pheochromocytoma was discovered during preoperative examinations. Reduced ejection fraction (EF; 30%) with apical ballooning indicated acute coronary syndrome or Takotsubo cardiomyopathy,¹ we inserted an intra-aortic balloon pump (IABP) after confirming intact coronary arteries via sequential coronary angiograms.

Seven hours after use of the IABP started, the sudden intense breast pain recurred, with mental confusion. Blood pressure (BP) increased to 190/110 mm Hg with 160 bpm tachycardia, so deep sedation and tracheal intubation were started as we suspected a pheochromocytoma multisystem crisis (PMC).² Subsequently, BP decreased to 50 mm Hg and EF was 8% (video 1), causing us to introduce percutaneous cardiopulmonary support. Careful administration of prazosin was initiated, titrated to

Video 1 Ejection fraction was reduced to 8% on cardiac echo several hours after intra-aortic balloon pump insertion. This finding made us decide to introduce additional support with percutaneous cardiopulmonary support.

Video 2 Improved cardiac function on day 6.

Figure 1 Macroscopic and microscopic tumour findings.

a dose of 5 mg/day. Sufficient improvement of cardiac function on day 6 (video 2) allowed withdrawal of the mechanical devices. Complicated liver and kidney failure as well as disseminated intravascular coagulation improved with multidisciplinary treatment under continuous deep sedation to avoid recurrence. Laparoscopic adrenalectomy on day 16 and sequential breast cancer resection were completed without awakening the patient. Macroscopic bleeding in the adrenal gland was found by the surgeon.

Histopathologically, adrenomedullary cell-like cells with abundant granular cytoplasm proliferation with nest formation were observed among severe hemorrhagic necrosis. Intense immunoreactivity for CgA diagnosed pheochromocytoma (figure 1).

Although the precise trigger was unknown, ruptured pheochromocytoma caused PMC with step-wise cardiogenic shock due to severe transient cardiomyopathy.

Learning points

- ▶ Ruptured pheochromocytoma can cause pheochromocytoma multisystem crisis.
- ▶ Continuous sedation and aggressive prazosin administration allowed adrenalectomy without recurrent crisis.
- ▶ Immediate intervention is required after diagnosis of pheochromocytoma.

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