J Anesth (1999) 13:185–186

Journal of
Anesthesia

Letter to the editor

A case of aortic dissection without severe chest pain during an attempt at epidural anesthesia

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Key words: Aortic dissection, Multiple aneurysms, Intraoperative complication

To the editor: Recently, we treated a patient with aortic dissection (AD) without complaint of severe pain that became apparent during an attempt at epidural anesthesia. An 82-year-old man was scheduled for a graft replacement of right popliteal and left deep femoral arterial aneurysms under epidural anesthesia. In 1996, he had undergone a graft replacement of the left popliteal aneurysm. At that time, a slight enlargement of the thoracic aorta and an abdominal aortic aneurysm (AAA) had been identified, and hypertension had been controlled with enalapril maleate within 130–140 mmHg of systolic pressure.

After premedication with hydroxyzine 40 mg i.m., the patient was transferred to the OR. He was placed in the lateral position for lumbar epidural anesthesia after monitoring electrocardiography (ECG; lead II) and automated blood pressure monitoring (Dinamap). His systolic blood pressure was 160 mmHg. However, he did not seem to be tense. The skin was punctured with a Touhy needle following the infiltration of 0.5% lidocaine. The patient responded to the puncture with a small movement and complained that something was wrong with his artificial teeth. When a supplemental infiltration of lidocaine was given, he complained of mild midsternal discomfort without pain. The attempt at epidural anesthesia was immediately terminated. Oxygen and isosorbide nitrate were administered, because myocardial ischemia was suspected, even though no change was found on ECG monitoring. Since the patient's symptoms did not improve, the operation was canceled and further examinations were performal in the OR. No ischemic changes were found on the 12-lead ECG. An unclear, flaplike shadow around the ascending aortic root was observed on ultrasonic cardiography (UCG). After the patient had returned to the ward, a definite diagnosis of AD (DeBakey type I) was made by computed tomography (CT), and blood pressure control therapy was begun immediately. The following day, shock ensued from cardiac tamponade, and emergency graft replacement of the aorta was successfully performed.

Mural fragility of the aorta is accepted as the most important factor in AD and dilatation of the aorta, whereas hypertension and other hemodynamic stresses are considered as predisposing factors [1,2]. Furthermore, exertion, a sudden extension or curling of the body, and emotional distress have been mentioned as contributing factors in initiating a dissection. Autopsies have found a combination of thoracic AD and AAA in about 7% of cases of AD [3]. Thus, our patient would be at risk for AD. The direct cause of the dissection in this patient is unclear. The first possibility is that the dissection occurred outside the OR, then slowly progressed, and was found in the OR by chance. A second possibility is that dissection was initiated by increased blood pressure during the attempt at epidural anesthesia, because of insufficient local anesthesia or anxiety. Another possibility is "over" flexion of the aorta caused by changing posture for epidural anesthesia, although the posture was changed slowly and carefully.

When our patient complained of chest discomfort, we suspected myocardial ischemia, but no change was found in the ECG. Even though acute ST-T wave changes are common in patients with acute AD within 6 h of onset, a normal ECG can be observed in acute AD[4]. Since CT and digital subtraction angiography are not available in the OR, a noninvasive and simple UCG is the most useful examination. Moreover, the combination of ECG, UCG, and transesophageal echocardiography should be very helpful in patients with chest symptoms in the operating room.

The decision whether to cancel anesthesia or the operation can be difficult. In our patient, the scheduled surgery could have been undertaken because the symptoms were mild and myocardial ischemia was excluded by ECG. If the operation had been performed, the patient could have fallen into crisis without a correct diagnosis of AD. Minute observation and an

immediate decision relieved the patient. Thus, even if chest symptoms are mild and myocardial ischemia can be excluded, physicians should still be aware of the possibility of other important diseases, such as acute aortic dissection, in patients at risk.

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Received for publication on January 7, 1998; accepted on March 29, 1999