Penetrating Stab Injury of the Thoracic Aorta

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A 36-year-old male psychiatric nurse was stabbed in the back with a knife by a patient suffering from acute psychosis. After initial treatment in an outside hospital, he was transferred in stable cardiopulmonary condition to our department because a lung injury was suspected (Figure 1).

Computed tomography performed while the knife was still in place showed that the blade had penetrated the proximal part of the descending aorta. A periaortic hematoma had developed, but no injury of the lung parenchyma was demonstrated (Figure 2).

The patient was transferred immediately to the operating room, and an exploratory thoracotomy was performed using left-heart bypass through femoral cannulation as an adjunct. After cross-clamping the aorta, a longitudinal arteriotomy was performed in the anterior part of the vessel wall, and the tip of the blade, which had injured two-thirds of the circumference, was exposed (Figure 3).

After removal of the knife, the posterior wall was closed from inside using a running polypropylene suture. The aortotomy was closed in a similar fashion, and the patient was weaned from cardiopulmonary bypass without problems. Postoperative recovery was uneventful, and the patient was discharged 5 days after the surgery.

Figure 1. Conventional x-ray demonstrating knife in place in left hemithorax.

Figure 2. Penetration of tip of the blade into the descending aorta, without lung injury.

Figure 3. Opened aorta with tip of the blade inside the vessel.
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