Diagnosis of Subtle Type A Aortic Dissection Using Transesophageal Echocardiography

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Purpose:
The diagnostic accuracy of multidetector spiral computed tomography (MDCT) in detecting Type A aortic dissection (TAA) is very high. However, there exist cases where in spite of normal MDCT, clinical symptoms persist suggesting ongoing pathology. We therefore prospectively performed transesophageal echocardiography (TEE) in these cases.

Methods:
We report on consecutive patients (n=10). During short analgesedation, TEE was carried out (Philips IE 33, multiplane probe) after MDCT was negative. Intraoperatively, photographs were taken from aorta specimens. Postoperatively, histopathologic examinations were carried out.

Results:
During TEE examinations (20 minutes), no complications occurred. The diagnosis of TAA could be visualized by TEE in all ten cases. In the aortic lumen adjacent to the aortic wall, TEE movies showed fast fluttering structures consistent with beginning membrane formation. In eight cases, the dissection started in the ascending aorta, in two cases, retrograde dissection took place. Therefore, emergency operation was performed.

In 10 patients (100%), the TEE findings were confirmed intraoperatively and validated histopathologically.

Conclusions:
In our experience, TEE could detect subtle TAA in patients suffering from chest or back pain, whereas MDCT showed normal findings.

• Limitation of CT is temporal resolution, ECG gated images may therefore possibly miss fast moving structures.
• TEE reverberation artifacts may mask subtle Type A aortic dissection membranes.
• Analysis of motion using TEE may help in decision making.

TEE should therefore be recommended in patients in doubt of early stage TAA.

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