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Is TEE useful to assess lung density changes?

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Keywords

Adult respiratory distress syndrome, echocardiography, tomography

Context

Patients with adult respiratory distress syndrome are known to suffer from reduced oxygenation caused by the presence of pulmonary densities. Examination by computed tomography (CT) is currently the only way to detect these densities. In this study the authors evaluated the role of transesophageal echocardiography (TEE) to observe densities in the dependent left lung and to estimate the effect of positive end-expiratory pressure (PEEP) on these densities. TEE is being increasingly used to assess haemodynamic status in intensive care patients. It is also being used to visualise intrathoracic structures, such as the descending aorta, and to view the left lung through the "acoustic window" of the aorta.

Significant findings

Of 30 men and 10 women with ARDS, as diagnosed by guidelines of the American-European Concensus Conference, 26 patients had densities in the left dependent lung and this was confirmed in 24 out of 26 TEE examinations. There was significant correlation between the areas of densities as measured by TEE and computed tomography (CT). PEEP, which was added in 8 patients, decreased the density area.

Comments

In this study TEE seemed to be effective at detecting densities provided they were adjacent to the aorta. Two small densities were missed by TEE and the authors comment that the true size of large lesions may be difficult to assess. Although only the left lung can be examined, there is correlation between left and right lung densities by using CT. Oxygenation improved and density area decreased with application of PEEP suggesting that monitoring with TEE may have a role in assessing therapy.

The results of this study indicate that useful information on the extent of pulmonary disease, as well as cardiovascular status, can be obtained by TEE.

Methods

40 consecutive patients with ARDS, visualisation of the left lung by CT and TEE, PEEP administered in 10 patients.

Additional information

References

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