

Transient right-to-left shunt in massive pulmonary embolism

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A 56-yr-old man, two months after an operation for an acoustic neurinoma, gradually developed dyspnea. Massive pulmonary embolism (MPE), with a significant right-to-left (R-L) shunt, was seen in a perfusion scan of the lungs with Tc-99m MAA. Radioactivity was noted in the thyroid, spleen, kidneys and brain. A cardiac ultrasound study did not reveal intracardiac shunting. A few days later, when the patient's condition improved, another perfusion scan of the lungs did not show the shunt, whereas a subsequent digital subtraction angiographic study confirmed the diagnosis of MPE but failed to reveal the cause of the shunt. In the absence of any possible pathophysiological mechanism, to explain the observed R-L shunt, we deduce that the particles of Tc-99m MAA might have passed through the precapillary pulmonary arteriovenous anastomoses and/or through dilated pulmonary capillaries, as a result of highly increased pulmonary vascular pressure due to MPE.

Key words: transient right-to-left shunt, pulmonary embolism, perfusion scan