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Images in Congenital Heart Disease

Hydropneumopericardium

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An 11-year-old girl underwent surgery for rheumatic mitral valvar disease. The mitral valve was replaced with a Carbomedics No.27 mechanical prosthesis. The postoperative course was uneventful, and she was fully anticoagulated with coumadin. On the seventh postoperative day, she complained of chest pain. Cross-sectional echocardiography revealed a large pericardial effusion which required drainage and placement of a pericardial tube. Large blood clots and 250 cc of bloody fluid were drained. The tube was pulled out after 3 days, when drainage was less than 1ml/kg/day. About two hours later, she complained of chest pain and discomfort, with signs of tamponade, namely tachycardia and mild hypotension. Cross-sectional echocardiography showed a loculated pericardial effusion of 1cm anteriorly and posteriorly, with some very bright echoes in the pericardial sack. Chest X-ray (Figure) revealed a hydropneumopericardium with several levels of air and fluid in the pericardium (black arrowheads). The thin pericardium (white arrows) and the pulmonary trunk (PA) were well delineated by the intrapericardial air. A pericardial tube was inserted and evolution was favorable in 3 days. All pericardial fluid cultures were negative.

Hydropneumopericardium is a very rare condition which may occur after trauma, pericarditis caused by gas-forming organisms, fistulas, or medical procedures such as positive pressure ventilation or endoscopy. Hydropneumopericardium may be life-threatening if signs of tamponade are present, and therefore requires prompt diagnosis and intervention. We presume that, in our patient, air penetrated the pericardium during removal of the pericardial tube and remained collected in the loculations formed by fibrin strains already present, which prevented spontaneous drainage of the air.

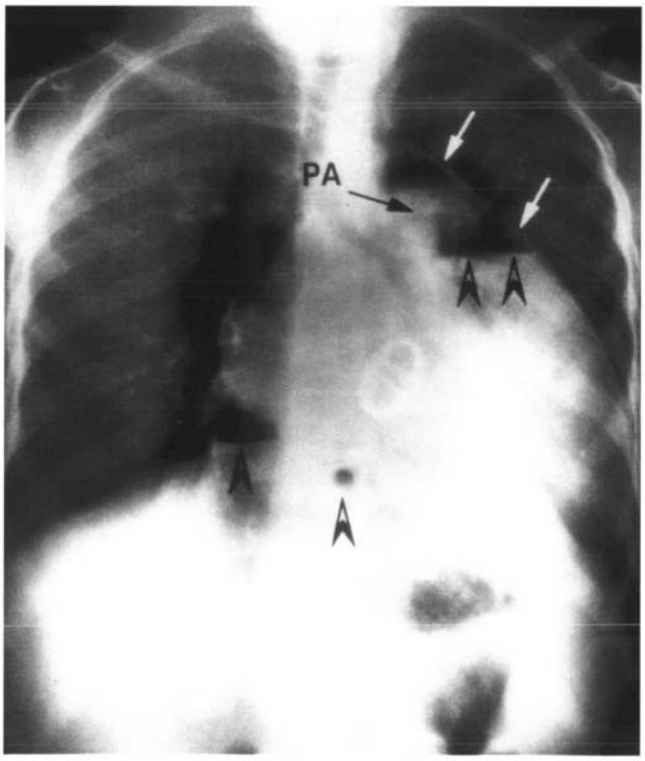

Figure 1.
Lung perfusion scanning (posterior view) of a patient with severe stenosis of the left pulmonary artery. Left lung: global, severe hypoperfusion. Percentage of perfusion: 11%. Right lung: overflow, with balancing of the base to apex flow. Percentage of perfusion: 89%.

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