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Patent ductus arteriosus

Case contributed by [Dr Mohd Radhwan Bin Abidin](#)

Diagnosis certain

Diagnosis certain

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Citation, DOI and case data

Citation:

Abidin, M. Patent ductus arteriosus. Case study, Radiopaedia.org. (accessed on 12 Nov 2021) <https://doi.org/10.53347/rID-88570>

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4 times by 3 users - [see full revision history](#).

Published:

15th Apr 2021

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Presentation

Supraventricular tachycardia on ECG for investigation

Patient Data

Age: 30 years

Gender: Female

Chest radiograph

From the case: [Patent ductus arteriosus](#)

X-ray

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Frontal

Heart size is enlarged. Bilateral pulmonary arteries are enlarged.

Patchy opacities at both lung fields.

CTPA

From the case: [Patent ductus arteriosus](#)

CT

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Axial C+ CTPA

Poor contrast opacification from this CTPA study. There is a mixture of contrasted and non-contrasted blood within the pulmonary arteries.

Suspicious communication from the aortic arch to the pulmonary artery.

CTA thoracic aorta

From the case: [Patent ductus arteriosus](#)

CT

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Axial C+ arterial phase

Good pulmonary arteries opacification from CT angiogram of thoracic artery. Previous suspicious communication is clearly seen, in which is the patent ductus arteriosus.

Case Discussion

This patient present with cardiomegaly and large bilateral pulmonary arteries on chest radiograph. It was further investigated for pulmonary embolism, in which CTPA was performed. CTPA shows poor contrast opacification of pulmonary vessels (likely due to mixture of contrasted and non-contrasted blood). There is also suspicious communication at aorta and pulmonary arteries. CTA thoracic aorta was performed which confirm the presence of patent ductus arteriosus. The contrast from the aorta clearly flow into the pulmonary artery system, in which opacifies the pulmonary arteries.

The arterial circulation is still higher pressure compared to pulmonary arterial circulation in this case. Eisenmenger phenomenon still did not occur in this patient (which pulmonary artery circulation is higher pressure compared to arterial circulation).

This patient likely have Krichenko classification type B (window, short and wide ductus with blending of pulmonary artery).

References

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- [Viva Practice.MY](#) by [Dr Tee Yu Jin](#) ●

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Joseph J. Smolich et al., Journal of Applied Physiology, 2016

Hemodynamics of Patent Ductus Arteriosus: Analysis by Equisensitive Simultaneous Pressure Recording During Surgery

Leslie A. Kuhn et al., Journal of Applied Physiology, 1957

Brief asphyxial state following immediate cord clamping accelerates onset of left-to-right shunting across the ductus arteriosus after birth in preterm lambs

Joseph J. Smolich et al., Journal of Applied Physiology, 2020

Flow-Induced Asymmetry

Nancy R. Gough, Sci Signal, 2007

Congenital Coronary Artery-to-Pulmonary Artery Fistula with Anomalous Origin of Right Coronary Artery from Pulmonary Artery: A Case of "Double Trouble"

Parveen Kumar, Radiology: Cardiothoracic Imaging, 2021

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Sung Choe et al., Blood Advances, 2020

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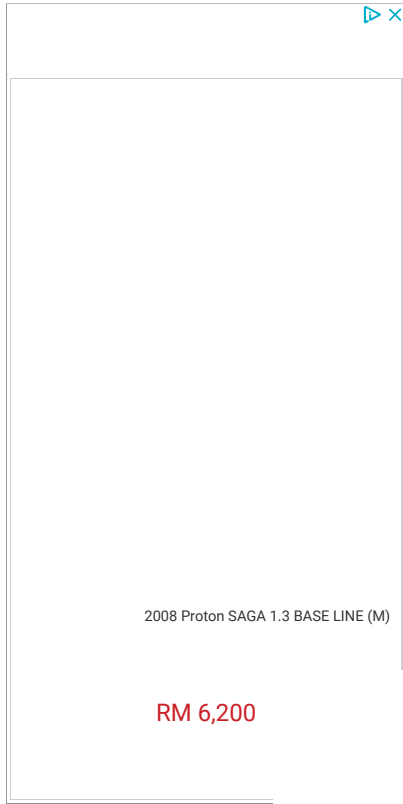
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