

A Typical Presentation of Pulmonary Embolism Role of Arterial – Pulmonary Oxygen Difference

The Editor,

Sir,

Three post coronary artery bypass graft (CABG) patients had atypical presentations of Pulmonary Embolism [PE] (1). It is estimated that 11% of elderly patients with PE have atypical presentations and about 60% of the lesions in peripheral lung fields are missed.

Case 1 – A 67-year old male had CABG five weeks (three vessel) previously and presented with a history of chest pain, shortness of breath and loss of consciousness. He was treated as acute coronary syndrome and placed on inotropes and then transferred, 3 days later, to the Eric Williams Medical Sciences Complex.

He had sinus tachycardia and his chest was clinically clear. He was hypotensive. ABG pH 7.426, P_O₂ 80.6 (expected for age 83.5 mmHg), PCO₂ 39.1 mmHg, H CO₃ 26 mmol/L A-a D_O₂ 21.2 mmHg (normal up to 12), computed tomography pulmonary angiogram (CTPA) negative V/Q scan. Segmental perfusion deficits were seen within left lung posterolaterally (2). Small sub-segmental deficits were noted in the right lung laterally and the appearance was consistent with multiple pulmonary emboli.

Case 2 – A 64-year old male, a known hypertensive, who had CABG 9 days previously presented with acute confusional state. There was no loss of consciousness or focal signs but there was inappropriate speech and erratic behaviour. He had sinus tachycardia, a clear chest, GCS 12/15, and CT Brain was normal. ABG: pH 7.5, P_O₂ 80.6 (expected for age 84.2 mmHg), PCO₂ 28.0 mmHg, 22.0 mmol/L (A-a) D_O₂ 37.8 mmHg ie hypoxia with respiratory alkalosis and elevated alveolar arterial O₂ difference. CTPA – no abnormality noted (3). V/Q scan showed subsegmental perfusion defects in both lung fields greater in the left lung, suggestive of micro-embolic events/ resolving PE.

Case 3 – A 61-year old female presented with severe epigastric pain. She had end stage renal failure secondary to multiple myeloma and was on dialysis three times per week. She also had shortness of breath with chest pain for three weeks, which was pleuritic in type. She was normo-tensive but tachycardic and no abnormality was found in the epigastric region, ABG pH 7.416, P_O₂ 72.3 mmHg, PCO₂ 26.5 mmHg, HCO₃ 17.1 mmol/L, (A-a) D_O₂ 44.2 mmHg, CTPA was negative. V/Q scan showed subsegmental perfusion deficits in the lower zone of the right lung, decreased

perfusion in the mid-zone of the left lung. The appearance was suggestive of multiple PE. All three patients were anticoagulated and improved clinically over a course of a week each in hospital.

These cases demonstrate:

- * Atypical presentations of pulmonary embolism
- * Pulmonary embolism in the periphery of the lungs without being demonstrated by CTPA but shown only with V/Q scan (4, 5).
- * The arterial pulmonary oxygen difference (gradient) on ABG can be a simple and indicative test for likely pulmonary embolism including the peripheral lung fields
- * None of the above patients had evidence of deep vein thrombosis in the legs (6, 7, 8).

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