

On the case report of Platypnea-orthodeoxia after SARSCoV-2 pneumonia plus historical notes

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Dear Editor:

Platypnea-orthodeoxia syndrome (POS) is a striking clinical entity described by Howard B. Burchell over half a century ago” (1). POS is caused mainly due to intrapulmonary shunts like hepatopulmonary syndrome and pulmonary arteriovenous malformations.

Longo et al have reported in a recent issue of Acta Biomedica yet another respiratory cause of POS, secondary to fibrotic evolution of interstitial pneumonia by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and pulmonary embolism (2). Bubble-contrast echocardiography excluded intracardiac or intrapulmonary shunts. Ventilation / perfusion scans and arterial blood gases suggested that POS was due to ventilation-perfusion (V/Q) mismatching (2).

Interestingly the reported case had bilateral segmental PE. D-dimer levels, platelet counts and funduscopy were not reported. The hypercoaguable state seen in critically unwell COVID-19 patients may render susceptible individuals to an increased risk of retinal vascular occlusions, although this remains yet to be seen (3). Central retinal artery occlusion (CRAO) may be detected on funduscopy as a white, ischemic and edematous retina with retinal arteriolar attenuation and a cherry red macula (3). Prone positioning in ventilated patients with moderate to severe acute respiratory distress syndrome (ARDS) reduces mortality from hypoxaemia and has been widely used in the pandemic (4). Prone position produces intra-ocular pressure (IOP) rise of eyes with known and suspected angle closure glaucoma (3). Older age is not only a risk factor for glaucoma, but also for its progression. There was no description in Longo’s case if the 76 year-old

patient had a previous diagnosis of glaucoma and if she was put in head down positioning. If that was the case the combination of increased IOP and reduced perfusion of the central retinal artery might have resulted in retinal ischemia which, once again, speaks for the need of evaluating and reporting the funduscopy.

The pathophysiology of platypnea is not completely understood even today (5). The majority of cardiac POS cases are caused by the coexistence of an anatomic interatrial septal communication (i.e. patent foramen ovale, atrial septal defect, fenestrated interatrial septum) combined with a structural and/or functional abnormality in the chest or abdomen (5).

Historical notes: Burchell’s work commonly referenced is an abstract published in The American Physiological Society’s Proceedings - Fall Meeting, Augusta, Georgia, September 14–17, 1949. The abstract mentioned can be found in pages 563-564 (1).

A search in PubMed using Burchell HB as author resulted in 17 publications in 1948-1949 in renowned journals. As a cardiologist he was devoted to studying heart diseases and conditions, diagnosing various cardiac malformations, cardiac catheterization and physiologic measurements.

Dr Burchell was born in Athens, Ontario, in 1907 (6). He received his degree of Doctor of Medicine in 1932 from the University of Toronto and in 1940 the degree of Doctor of Philosophy in Medicine from the University of Minnesota (6).

As a product of his work at Mayo Clinic he contributed to “Congenital Anomalies of the Heart and Great Vessels”, which had editions in 1948 and 1954 (6)⁶. In 1958 the American Heart Association gave

him an Award of Merit, and so did the Minnesota Heart Association in 1959 (6). He died at the age of 101 years, in October, 2009 (<https://www.startribune.com/obituaries/detail/12225180/>).

Conflict of Interest: The author declares that he has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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