ESC European Society of Cardiology

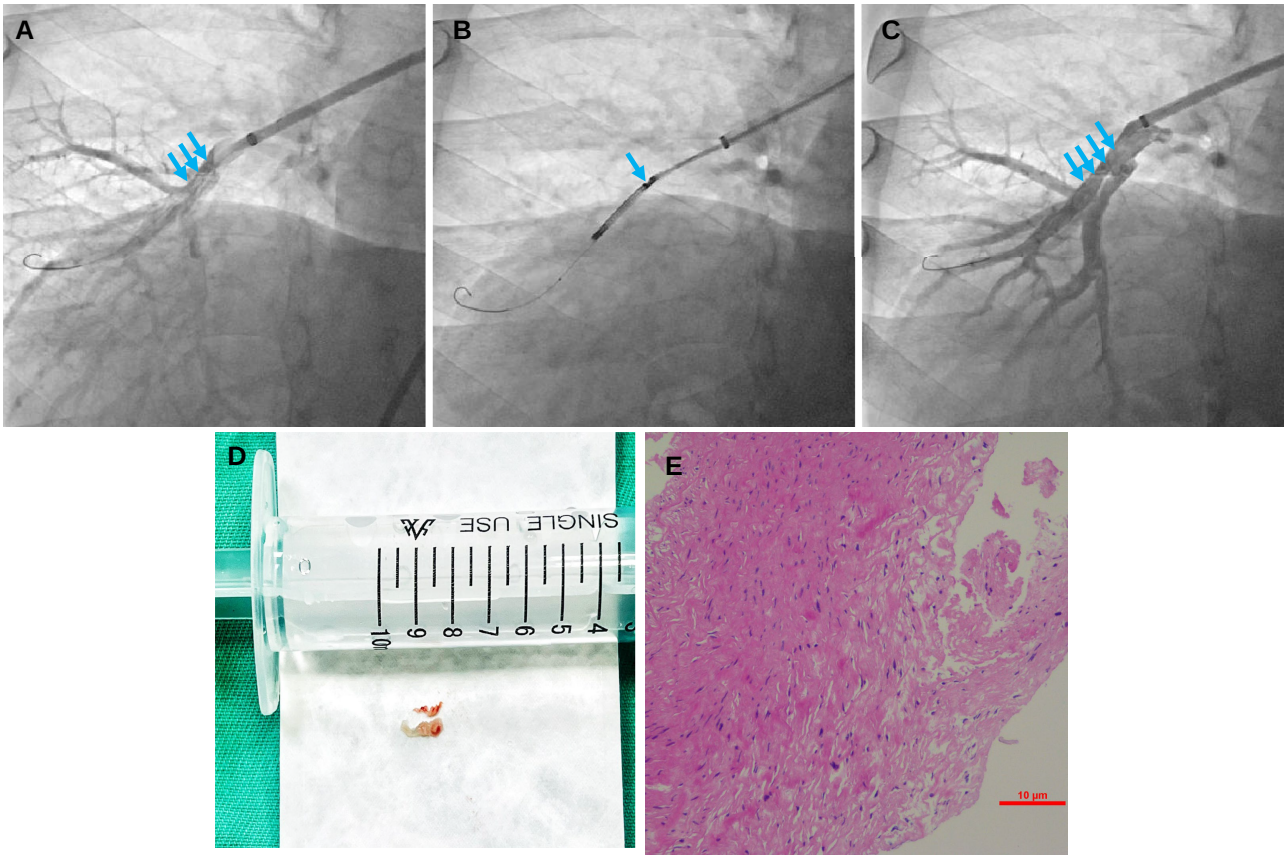
European Heart Journal - Case Reports (2023) **7**, 1–2
https://doi.org/10.1093/ehjcr/ytad009

TurboHawk plaque rotation system for chronic thromboembolic pulmonary hypertension

Jinrui Song[1], Hongling Su[2], and Yunshan Cao [2]*

[1]The First Clinical Medical College of Gansu University of Chinese Medicine, Gansu Provincial Hospital, Lanzhou 730000, China; and [2]Department of Cardiology, Pulmonary Vascular Disease Center, Gansu Provincial Hospital, Lanzhou 730000, China

Received 8 November 2022; first decision 22 November 2022; accepted 4 January 2023; online publish-ahead-of-print 10 January 2023



A 27-year-old man was diagnosed with chronic thromboembolic pulmonary hypertension (CTEPH) in our hospital due to exertional dyspnoea. After evaluation by a multidisciplinary team, balloon pulmonary angioplasty was performed, and his symptoms improved with 3-session balloon pulmonary angioplasty. However, the flow of the right inferior pulmonary artery still has not reached Grade 3 due

* Corresponding author. Tel/Fax: +86 931 8282663, Email: yunshancao@126.com
Handling Editor: Andrew Peter Vanezis

to the lesions at basal trunk presenting as a complex mesh with a slit by pulmonary artery angiography. Multiple ballooning failed to improve the flow distally (arrows in *Panel A*, *Supplementary material online, S1*). Thus, hyperplastic intima lesions were suspected rather than organized thrombus-forming web-like one. After multidisciplinary consultation, TurboHawk peripheral plaque excision system (TurboHawk™ Peripheral Plaque Excision System, Medtronic, Inc., MN, USA; arrow in *Panel B*, *Supplementary material online*, *S2*) was used and proliferative tissues were removed partially and successfully without any complications. Pulmonary artery angiography showed improved imaging at the right basal trunk (arrows in *Panel C*, *Supplementary material online*, *S3*) and no complications were observed. The removed tissues were stripped hyperplastic lesion in gross morphology (*Panel D*). Pathologic analysis showed fibrinous exudate with degeneration (*Panel E*) which is consistent with previous findings in the literature. Unfortunately, intravascular imaging was not performed to get more detailed information. The TurboHawk™ Peripheral Plaque Excision System is designed for the treatment of atherosclerotic lesions in peripheral arteries, which is slowly advanced across the lesion over a 0.014" (0.36 mm) guidewire, shaving occlusive material from the artery and storing the excised tissues in the tip of the device. The minimum sheath size recommended is 6F. To the authors' knowledge, this is the first time this technique has been used in a patient with CTEPH, which might provide a promising insight for interventional endarterectomy in the future. However, further studies are still needed to confirm safety and feasibility.

Supplementary material

Supplementary material is available at *European Heart Journal – Case Reports*.

Consent: The authors confirm that written consent for submission and publication of this case report including images and associated text has been obtained from the patient in line with COPE guidelines.

Conflict of interest: None declared.

Funding : Y.S.C. was supported by grants from the National Natural Science Foundation of China (82070052).

Data availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.