An unusual cause of intractable cough

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An 82-year-old man was referred for coronary tomography angiography (CTA) following a 3-month history of symptoms of shortness of breath and intractable cough. This demonstrated a massive (35 mm), highly tortuous, and calcified right coronary artery (RCA) that followed a serpentine course over the anterior aspect of the heart (Figure 1A), before draining into the inferior aspect of a massively dilated coronary sinus (Figures 1B and C, RCA-coronary sinus fistula). The patient’s symptoms were attributed to high output cardiac failure and surgical intervention was offered. This was later declined owing to the patient’s preference for medical therapy despite successful therapy. J Am Coll Cardiol 1999;34:1839–46.

Coronary artery fistulae (CAF) are rare and occur in ~0.1–0.2% of all patients undergoing selective coronary angiography. They can be acquired or congenital, and commonly affect the RCA (60% of cases) where drainage is usually into the venous side of the circulation (right ventricle 41%, right atrium 26%, pulmonary artery 17% and coronary sinus 7%). In asymptomatic patients, careful periodic follow-up is generally advised. Conversely, patients with large CAF and high fistulous flow are susceptible to myocardial ischaemia and infarction, fistula thrombosis, high-output cardiac failure, arrhythmias and sudden death. In these patients transcatheter embolization and surgical ligation are accepted treatment modalities.

The current case demonstrates high-output cardiac failure as an unusual cause for a dry intractable cough and the strengths of coronary CTA in defining the precise anatomical course of rare CAF.

Figure 1: Coronary computed tomography. (A) 3D volume rendered image demonstrating a markedly enlarged and tortuous right coronary artery coursing over the anterior aspect of the heart (closed arrow). The open arrow demonstrates the normal sized left anterior descending. (B) 3D volume rendered image of the inferior posterior aspect of the heart demonstrating a giant coronary sinus and the associated coronary venous anatomy. (C) ‘Tree’ volume rendered image showing the large right coronary artery draining into a corresponding large coronary sinus via a fistulous connection at the inferior aspect of the coronary sinus.

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