

consisting mostly of asymptomatic patients). In addition, more definitive randomized controlled trials comparing CAS with routine emboli protection versus CEA are currently enrolling low-risk patients (e.g., CREST, ACST-2), with results anticipated in the next few years.

As noted previously, a high proportion of patients undergoing carotid revascularization in Canada are symptomatic. Symptomatic carotid stenosis is not only associated with higher recurrent cerebrovascular events,<sup>11</sup> but several studies have shown that it also predicts higher adverse events with CAS.<sup>12,13</sup> Our patient population of 60% symptomatic individuals is much higher than those in the SAPPHERE study (28.7% symptomatic), CAPTURE (14% symptomatic), and CASES-PMS (21.8% symptomatic) registries. Nevertheless, our procedural and 30-day event rates remain comparable (arguably favourable) to these contemporary studies, despite a higher-risk cohort. Thus, carotid trained and experienced interventionists performing CAS can achieve excellent procedural and long-term results, despite high-risk and symptomatic patients in the Canadian medical health care setting.

In conclusion, our single-centre CAS registry shows that this procedure can be safely performed with low procedural complications, excellent technical success, and good long-term durability by trained and experienced interventional cardiologists in a Canadian population consisting of high-risk symptomatic patients, with results comparable to those in contemporary randomized carotid revascularization trials and registries.

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## Images in GIM

### Flash Pulmonary Edema in a Healthy Young Woman

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#### About the Authors

Jessica Otte is a family practice resident in Nanaimo, British Columbia. Kevin Patterson practises as an internist and intensivist on the coast of British Columbia and in Nunavut.

A normally healthy 53-year-old woman presented to hospital with acute shortness of breath, a low-grade fever, malaise, and a nonproductive cough. She was not taking medication and did not smoke or use recreational drugs. She denied recent travel and had no exposure to pets or sick contacts.

On examination, she was in moderate respiratory distress but she was not cyanosed. Her pulse was 80 bpm, her blood pressure 122/72 mm Hg, her oxygen saturation on room air 83%, and her temperature 37.8°C. She did not have jugular venous distension or pedal edema, and there were no stigmata of infective endocarditis. A right ventricular heave was palpable,



Figure 1. Chest computed tomography scan with contrast, axial view: A large, homogenous mass is present in the left atrium.



Figure 2. Chest computed tomography scan with contrast, coronal view: A large, homogenous mass is present in the left atrium.



Figure 3. Echocardiogram: A well-margined soft-tissue mass measuring 37 × 56 × 40 mm is visible in the left atrium. It appears to be adherent to the atrial septum, abutting the mitral valve and causing a functional stenosis with transvalvular flow velocities of close to 2.4 m/s. Moderate pulmonary arterial hypertension is present.

and auscultation revealed a pronounced pulmonary component of a physiologically split second heart sound. There were no extra heart sounds or murmurs. Crackles were heard throughout both lung bases. Her abdominal, neurological, thyroid, and skin examinations were normal.

Her chest radiograph showed a bilateral interstitial infiltrate. She had a hemoglobin level of 132 g/L and a white cell count of  $13.2 \times 10^9/L$  (with  $11.2 \times 10^9/L$  neutrophils). Her chemistry profile was normal, and her troponin-I was 0.03 µg/L. A D-dimer was not performed. Her electrocardiogram showed sinus tachycardia.

A provisional diagnosis of community-acquired interstitial pneumonia was made. She quickly deteriorated clinically and radiographically, and was admitted to a negative-pressure room in our intensive care unit. She was treated with intravenous cefuroxime and oseltamivir.

Sputum and blood cultures were obtained, and bronchoscopy was performed. Bronchoalveolar lavage was nondiagnostic. A computed tomography (CT) scan of chest revealed a large soft tissue mass in the left atrium (Figures 1 and 2) and widespread parenchymal opacities consistent with pulmonary edema. Echocardiography identified a mass obstructing the mitral apparatus (Figure 3).

Atrial myxomas are benign cardiac tumours. Patients may present with symptoms of congestive heart failure or embolic phenomena or with

constitutional symptoms. The latter are thought to be due to cytokine release (e.g., interleukin-6).<sup>1</sup> However, some patients can develop large tumours without symptoms.<sup>2</sup>

This patient rapidly decompensated, with pulmonary hypertension and pulmonary edema. This can be seen when there is an acute change in size, for example, hemorrhage into the tumour.<sup>3</sup> This myxoma was surgically excised, and the patient is expected to make a full recovery.

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