

## Multislice Cardiac Tomography in a Patient with Absolute Contraindication for Cardiac Catheterization

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**Key words:** multislice cardiac tomography, aortic root, fibro-elastoma, coronary heart disease

*IMAJ 2008;10:742*

Multislice cardiac tomography is a rapidly developing technique aimed at accurate non-invasive assessment of the coronary arteries [1]. This exciting technique has already been shown to be effective in patients with chest pain in the emergency room environment [2,3]. These important indications are currently being tested, however the technique has already shown a very high negative predictive value, while the positive predictive value has remained more modest. Nevertheless, the indications for the test are constantly expanding. An important indication is patients in whom conventional coronary angiography is contraindicated. We present a patient in whom a mobile mass in the aortic root was diagnosed by echocardiography. Because of the location and configuration of the mass, pre-surgical coronary angiography was felt to be dangerous and the patient was referred for cardiac computed tomography.

### Patient Description

A 60 year old woman with a history of mild hypertension and hyperlipidemia that was controlled medically was referred for routine stress test and echocardiography. The stress test was uneventful, but echocardiography revealed a pedunculated mass just above the aortic valve. Transesophageal echocardiography confirmed the diagnosis and demonstrated clearly that the mass was not attached directly to the aortic valve and was highly mobile. The working diagnosis was fibro-elastoma, however other forms of cardiac tumor were deemed possible and it was felt that the tumor should be removed. Due to her age and the presence of risk factors for coronary disease,

she was referred for cardiac CT, since the introduction of any catheter into the aortic root was felt to be extremely dangerous. Cardiac CT (Brilliance 64, Philips, Ohio, USA) was performed, demonstrating the aortic root tumor very clearly [Figure A] and no significant coronary disease [Figure B]. Based on these findings, the patient underwent uneventful cardiac surgery and the tumor was removed. Histology confirmed the diagnosis of fibro-elastoma.

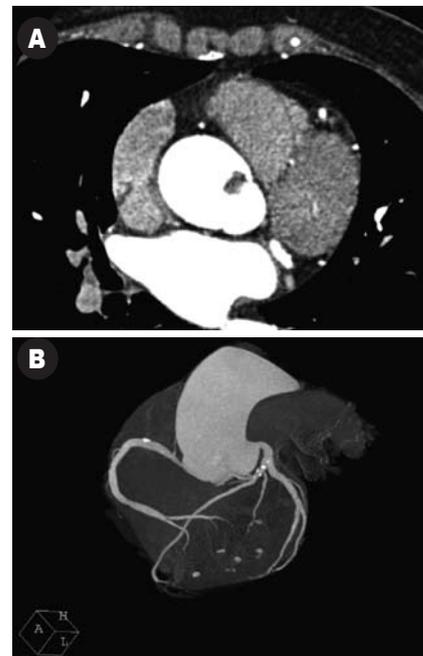
### Comment

To our knowledge this is a unique case in which the indication for CT coronary angiography was the absolute contraindication to perform conventional coronary angiography in a middle-aged woman with risk factors for coronary disease who was waiting for removal of a cardiac tumor. CT coronary is a safe procedure in general with no increased risk in our patient. A secondary gain was the excellent spatial definition of the tumor in the aortic root, with some added value over echocardiography.

The high quality CT images gave us confidence to send the patient for surgery without conventional coronary angiography, beyond what could have been possible by stress nuclear or stress echocardiography techniques, both capable of providing excellent functional information, but no direct visualization of the arteries. Indeed, the patient underwent successful cardiac surgery in which the tumor was removed.

### References

1. Hendel RC, Patel MR, Kramer CM, et al. ACCF/ACR/SCME/ASNC/NASCI/SCAIR/SIR 2006 Appropriateness Criteria for cardiac Computed Tomography and Cardiac



**[A]** Axial view; arrow shows tumor close to the left cusp. **[B]** Coronary tree.

Magnetic Resonance Imaging. *J Am Coll Cardiol* 2006;7:1475–97.

2. Rubinshtein R, Halon D, Gaspar T, et al. Usefulness of 64 slice cardiac computed tomography angiography for diagnosing of acute coronary syndrome and prediction clinical outcome in emergency room patient with chest pain of uncertain origin. *Circulation* 2007;115:1762–8.
3. Hollander JE, Litt HL, Chase M, Brown AM, Kim W, Baxt WG. Computed tomography coronary angiography for rapid disposition of low-risk emergency department patient with chest pain syndrome. *Arch Emerg Med* 2007;2:112–16

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