Images in cardiovascular medicine: Transkei heart

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Figure 1. Findings with Doppler echocardiography and magnetic resonance imaging. Exp=expiration, insp=inspiration, white arrows=the organised pericardial effusion, grey arrows=the thickened, contrast-enhanced pericardium, triangles=the thickened, contrast-enhanced epicardium.

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A 16-year-old student from the rural Eastern Cape (former Transkei) was referred to Capetown for cardiovascular evaluation because of a four-month history of progressive dyspnoea and cardiomegaly reported on the chest-X ray. At physical assessment he appeared chronically ill, the blood pressure was 110/70 mmHg, the resting pulse rate 114 beats/minute, regular and equal, with pulsus paradoxus of 14 mmHg, and the central venous pressure was raised with a positive Kussmaul's sign. His lungs were clear, the

heart sounds muffled, without a pericardial rub or knock, and the liver was palpable 2 cm below the costal margin. The 12-lead electrocardiogram showed sinus tachycardia, with symmetric negative T waves of chronic pericarditis in most leads, without microvoltage or electrical alternans. Laboratory investigations showed an elevated erythrocyte sedimentation rate of 80 mm in the first hour (Westergren), with negative serology for infection with human immunodeficiency virus serology. Doppler echocardiography demonstrated persistent reversal of hepatic vein flow on expiration (figure 1A), highly variable flow over all valves on respiration, and an organised, circumferential pericardial effusion, with a prominent septal bounce, diagnostic of advanced constrictive physiology (figure 1B). Contrast-enhanced magnetic resonance imaging showed the circumferential, organised pericardial effusion of 12 to 25 mm (figure 1C, steady-state free precession, four-chamber view), with septal bounce, as well as thickening and contrast enhancement of both the epicardium and pericardium, suggestive of active inflammation or fibrosis (figures 1D and E; inversion recovery gradient echo sequences, scanned ten minutes after the administration of 0.1 mmol/kg gadolinium-DTPA, four-chamber and short-axis views, respectively). The chest X-ray and the magnetic resonance images did not reveal hilar or mediastinal lymphadenopathy, pulmonary infiltrates, scar or calcifications. A preliminary diagnosis of tuberculous pericarditis was made, and antituberculosis chemotherapy was initiated.

Follow-up assessment to determine the response to therapy is planned, and epi-pericardiectomy will be performed in several months.

As early as the 1940s, Gelfand described tuberculous pericarditis as 'Transkei heart' because it was so common there.¹ The ongoing epidemic of tuberculosis and co-infection with the human immunodeficiency virus has resulted in an increased incidence of this condition in South Africa.² ■

References

- 1 Gelfand M. The sick African. 3rd ed. Cape Town: Juta, 1957, 494.
- 2 Mayosi BM, Burgess LJ, Doubell AF. Tuberculous pericarditis. *Circulation* 2005;112:3608-16.

In this section a remarkable 'image' is presented and a short comment is given.

We invite you to send in images (in triplicate) with a short comment (one page at the most) to Bohn Stafleu van Loghum, PO Box 246, 3990 GA Houten, e-mail: l.jagers@bsl.nl.

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