

*Images in Nephrology*  
(Section Editor: G. H. Neild)

## Massive and rapid left ventricular calcification

Hirotsugu Iwatani, Kodo Tomida, Yasuyuki Nagasawa, Enyu Imai, Hiromi Rakugi and Yoshitaka Isaka

Department of Geriatric Medicine and Nephrology, Osaka University Graduate School of Medicine, Suita, Osaka, Japan

**Keywords:** calcification; left ventricle; lymphoma; renal failure; secondary hyperparathyroidism

### Image in nephrology

A 21-year-old woman was diagnosed with Hodgkin's lymphoma (stage IV-B) in 2001 and underwent chemotherapy and then three stem cell transplantations [auto-peripheral blood stem cell transplantation (PBSCT) in 2002, allo-bone marrow transplantation from her mother in 2002 and allo-PBSCT from her sister in 2003]. From 2004, her serum creatinine began to rise and, in March 2005, she reached end-stage renal failure. From 28 February 2005, she started to experience severe and rapid calcification localized to left ventricle and died in June 2005.

Secondary hyperparathyroidism was present (the PTH value on 13 April 2005 was 502 pg/ml: the normal range was 10–60 pg/ml); however, the product of serum calcium and phosphate was always  $<65$  (mg/dl)<sup>2</sup>, or 5.25 (mmol/l)<sup>2</sup>. Metastatic calcification of various organs including myocardium has been reported with HTLV-1 infection [1], but in our case, HTLV-1 was negative. The cytology of the pericardial effusion did not show any lymphoma cells; therefore, metastatic lymphoma would be the least likely cause. Myocardial calcification has been reported after orthotopic

heart transplantations [2] or unselected bone marrow transplantation to acute myocardial infarction in an animal model [3]. Risk factors in heart transplantation include repeated episodes of acute rejection, temporary uraemia, periods of septicaemia, alcoholism and cyclosporine and/or steroid therapy.

Finally, the ventricular calcification may have been a complication of lymphoma treatment such as the adverse effect of irradiation, or drug toxicity [4], but the precise mechanism could not be elucidated because in the needle necropsy, severe calcification prevented us from taking heart tissue important for the detailed analysis.

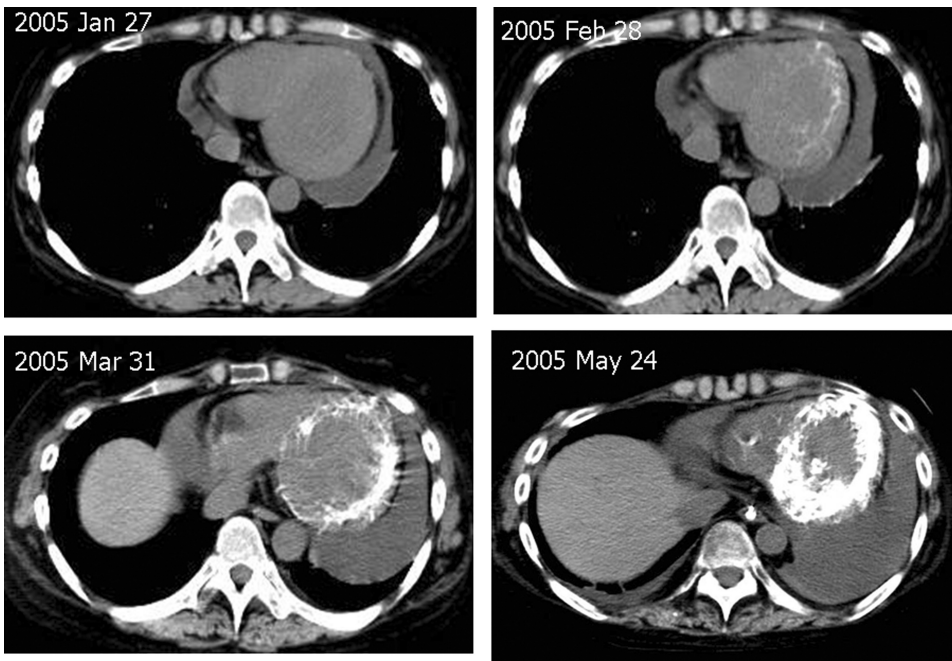
*Conflict of interest statement.* None declared.

### References

1. Daisley H, Charles WP. Fatal metastatic calcification in a patient with HTLV-1-associated lymphoma. *West Indian Med J* 1993; 42: 37–39
2. Cohnert TR, Kemnitz J, Haverich A *et al.* Myocardial calcification after orthotopic heart transplantation. *J Heart Transplant* 1988; 7: 304–308
3. Yoon YS, Park JS, Tkebuchava T *et al.* Unexpected severe calcification after transplantation of bone marrow cells in acute myocardial infarction. *Circulation* 2004; 109: 3154–3157
4. Brice P, Tredaniel J, Monsuez JJ *et al.* Cardiopulmonary toxicity after three courses of ABVD and mediastinal irradiation in favorable Hodgkin's disease. *Ann Oncol* 1991; 2(Suppl 2): 73–76

*Received for publication: 1.1.08; Accepted in revised form: 26.1.09*

*Correspondence and offprint requests to:* Hirotsugu Iwatani, Department of Geriatric Medicine and Nephrology, Osaka University Graduate School of Medicine, 2-2, Yamadaoka, Suita, Osaka 565-0871, Japan. Tel: +81-6-6879-3857; Fax: +81-6-6879-3859; E-mail: hiro@kid.med.osaka-u.ac.jp



**Fig. 1.** Progressive ventricular calcification.