FIG. 2. Chest X-ray on the eleventh day, showing the development of right atrial enlargement.

the fact that the three tricuspid valve leaflets generally receive chordal insertions from more than one group of papillary muscles (Eisenberg and Suyemoto, 1964). The course and clinical findings in the present patient point to papillary muscle dysfunction or rupture as the cause of tricuspid incompetence which developed in the course of acute myocardial infarction. This patient is unique in that she survived this rare complication of myocardial infarction but with persistent tricuspid incompetence.

References

- EISENBERG, S. & SUYEMOTO, J. (1964) Rupture of a papillary muscle of the tricuspid valve following acute myocardial infarction. *Circulation*, **30**, 58.
 HEIKKILA, J. (1967) Mitral incompetence complicating acute myocardial infarction. *British Heart Journal*, **29**, 162.
 HEIKKILA, J. (1967) Mitral incompetence as a complication of acute myocardial infarction. *Acta medica scandinavica*, Suppl. 475.
 HOLLOWAY, D.H., JR, WHALEN, R.E. & MCINTOSH, H.D. (1965) Systolic murmur developing after myocardial ischaemia or infarction. *Journal of the American Medical Association*, **191**, 888.

Postgraduate Medical Journal (January 1977) **53**, 52-53.

The simultaneous presentation of Hodgkin's disease and myeloma

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Summary

The simultaneous presentation of Hodgkin's disease and multiple myeloma is described. This is rare as only one previous case appears to have been documented.

Speculations as to the aetiology are discussed as well as the significance of the presentation.

Introduction

Second malignancies develop in 1.6-2.2% (Cannellos *et al.*, 1975) of patients with Hodgkin's disease following therapy. Multiple myeloma complicating

treated Hodgkin's disease has been described (Rosner and Grunwald, 1974). A case is now reported in which these two neoplasms occurred simultaneously.

Case report

A 60-year-old male was admitted to a hospital with night sweats and weight-loss of 6 months' duration. An axillary lymph node biopsy revealed nodular sclerosing Hodgkin's disease. He was referred to The London Hospital and was staged

clinically IIb. Plain X-rays of chest and abdomen showed no lytic lesions. The haemoglobin was 9.3 g/dl, leucocyte count $13 \times 10^9/l$ and blood urea 7 mmol/l. A bone marrow aspirate contained 20% plasma cells, with no evidence of Hodgkin's disease. Immunoglobulin levels were: IgG, 260% of average normal (normal range 50–150%); IgM, 74% (normal range 50–180%); IgA, 36% (normal range 50–170%). Plasma electrophoresis showed an M component of IgG₁ lambda specificity, and Bence-Jones protein of lambda specificity was detected in the serum and urine.

On admission for further investigation and treatment the condition of the patient had markedly deteriorated. After 24 hr he became anuric with blood urea 50 mmol/l. He died shortly afterwards.

At post-mortem there was generalized lymphadenopathy with splenomegaly (275 g) and hepatomegaly (2500 g). Microscopy of the lymph nodes and spleen showed extensive fibrosis with islands of Hodgkin's tissue and moderate plasma cell infiltrate. The bone marrow contained gelatinous grey areas demonstrated on microscopy as Hodgkin's tissue with adjacent deposits of plasma cells including abnormal forms (Fig. 1). Each kidney weighed 250 g and had a pale swollen cortex with subcapsular haemorrhages. Microscopy showed dense congo red positive casts in the tubules with an associated giant cell reaction—the appearances of myeloma kidney. The renal tract was otherwise normal. There was no evidence of amyloid.

FIG. 1. Deposit of Hodgkin's tissue (A) and myeloma (B) in the bone marrow of the sternum. (Inset $\times 2$, A and B $\times 160$.)

Discussion

The development of second lymphoreticular malignancies and leukaemias in Hodgkin's disease and multiple myeloma is well documented (Cannellos *et al.*, 1975). Nearly all cases have occurred following treatment, but a few patients have had two malignancies at presentation as described by Rosner and Grunwald (1974). Bichel (1957) reported the simultaneous occurrence of Hodgkin's disease and myeloma. To the authors' knowledge this has only been described once. Several workers have demonstrated immunoglobulin in relation to Reed Sternberg cells and the abnormal malignant cells of Hodgkin's disease, and Taylor (1974) postulates that this is a neoplasm of transformed lymphocytes. According to this hypothesis different morphological forms of lymphoreticular neoplasias are related to stages in the cell cycle of the lymphocyte. In the present case, therefore, malignant cells of Hodgkin's disease could possibly be considered to result from maturation arrest of the B cell series and the neoplasm elsewhere to show full differentiation to plasma cells, although this might seem unlikely because of the rarity of the association.

Patients with Hodgkin's disease show evidence of depressed cell-mediated immunity and those with multiple myeloma have diminished normal antibody production. In both conditions the simultaneous development of leukaemia and other malignancies may be causally related to defective immunity. The same mechanism may apply in the present case. It seems more likely that Hodgkin's disease permits the development of multiple myeloma since cell mediated immunity is thought to be the more important defence against neoplasia (Kaplan, 1972).

This case is regarded as a curiosity but it is felt that the true significance of the simultaneous presentation of lymphoproliferative neoplasms may only become apparent as patients with these diseases are more intensively investigated.

Acknowledgments

We would like to thank Dr A. L. Turnbull and Dr D. D. Gibbs for their permission to publish this case.

References

- BICHEL, J. (1957) Coincidence of Hodgkin's disease and multiple myeloma. *Acta medica scandinavica*, **157**, 399.
- CANNELLOS, G.P., DEVITA, V.T., ARSENEAU, J.C., WHANG-PENG, J. & JOHNSON, R.E.C. (1975) Second malignancies complicating Hodgkin's disease in remission. *Lancet*, **i**, 947.
- KAPLAN, H.S. (1972) In: *Hodgkin's Disease* (Ed. by H. S. Kaplan), p. 184. Harvard University Press.
- ROSNER, F. & GRUNWALD, H. (1974) Hodgkin's disease and acute leukemia. *American Journal of Medicine*, **58**, 339.
- TAYLOR, C.R. (1974) The nature of Reed Sternberg cells and other malignant reticulum cells. *Lancet*, **ii**, 802.