

Short reports

Small-cell carcinocythaemia

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Carcinocythaemia is a term coined by Carey in 1976 to describe a condition in which non-haematological malignant cells are seen in a normally prepared peripheral blood film.¹ This condition has been reported on seven previous occasions. In three of these the primary was a small-cell carcinoma of the lung.²⁻⁴ We report a fourth case of small-cell carcinocythaemia.

Case report

A 63-year-old woman was seen in May 1980 with a four-week history of expiratory wheeze associated with anorexia. She smoked 15 cigarettes a day. Examination showed a purpuric rash on both legs and diminished breath sounds in the left upper and mid zones. The liver was enlarged and the left external jugular vein was distended.

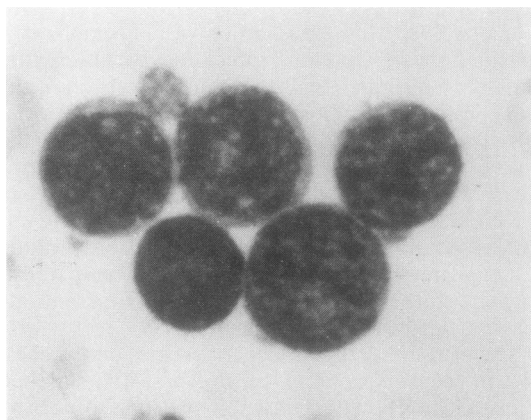
The radiograph of her chest showed a left hilar opacity and her liver enzyme concentrations were raised. The full blood count report was: haemoglobin 15.1 g/dl; white cell count $7.3 \times 10^9/l$, with 65% neutrophils, 15% lymphocytes, 12% monocytes, 4% basophils, 1% eosinophils, 1% myelocytes, 1% malignant cells; and 2 nucleated red cells per 100 white cells. A buffy coat preparation similarly showed malignant cells (fig). Her platelet count was $44 \times 10^9/l$. Bone marrow examination showed neoplastic cells and dyserythropoiesis.

The patient died five days later and necropsy showed a small-cell carcinoma in the left upper lobe bronchus with metastases in the liver, bone marrow, and hilar and infraclavicular lymph nodes.

Discussion

Carcinoma was first seen invading veins macroscopically by Thiersch in 1865. This was confirmed microscopically in 1919 by Marcus, who saw melanoma cells in blood obtained at necropsy. Most subsequent investigations have been concerned with diagnosing carcinoma by concentrating and filtering blood samples and then staining specifically for malignant cells. As a result of such work Engel was able to conclude that the finding of malignant cells in the blood (by a concentrating technique) had no prognostic significance.⁵

Obviously the peripheral blood may provide the first objective evidence of the carcinoma; but identifying carcinoma cells in peripheral blood may be very difficult. The major differential diagnoses include leukaemia, endothelial cells, artifacts, and a leukoerythroblastic picture. Features in favour of carcinoma cells include: (a) clumping of the cells; (b) the large cell size; (c) the high nuclear-to-cytoplasmic ratio; (d) the absence of auer rods or granules;



Buffy coat preparation of peripheral blood showing clump of malignant cells. (Giemsa, $\times 1250$.)

cytoplasmic ratio; (d) the absence of Auer rods or granules; and (e) negative periodic-acid-Schiff and peroxidase stains.^{2,4}

Carcinocythaemia probably carries with it a very poor prognosis. This patient, along with five of the seven previously reported patients, died within a few days of diagnosis.

The most likely circumstances in which carcinocythaemia is seen is when the reticuloendothelial system has been overwhelmed and is unable to phagocytose all the malignant cells in the blood. In addition, the malignant cells may have an enhanced ability to alter endothelial cell membranes, which thereby allow the cells easier access to the circulation.⁶

References

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