

# Spheroacanthocytes secondary to novel tyrosine kinase inhibitors

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A 64-year-old male with ALK-positive nonsmall cell lung carcinoma on oral therapy with alectinib presented with pleural effusion. Full blood examination revealed hemoglobin of 90 g/L, white blood cell count  $12.4 \times 10^9/L$ , and platelet count  $372 \times 10^9/L$ . Peripheral blood film displayed marked acanthocytes and spheroacanthocytes (Figure 1: spherocytes (black arrow) and spheroacanthocytes (red arrow)) with negative hemolytic indices including normal reticulocyte count,  $75 \times 10^9/L$ , high haptoglobin 2.18 g/L (range 0.36-1.95), mildly elevated lactate dehydrogenase 317 U/L (range 120-250), normal bilirubin 16  $\mu\text{mol/L}$  (range 0-20), and a negative poly-specific direct antiglobulin test. Liver function tests were essentially normal: alkaline phosphatase mildly elevated 119 U/L (30-110), gamma-glutamyl transferase 15 U/L (5-50),

and alanine aminotransferase 23 U/L (5-40). Flow cytometry demonstrated reduced eosin-5-maleimide binding, with mean channel fluorescence of 5.6 (control average MCF 12.87). Alectinib is a novel tyrosine kinase inhibitor approved for use in patients with nonsmall cell lung cancer. Alectinib is known to cause anemia but the striking acanthocytes and spheroacanthocytes have only been reported in a few case series. Spheroacanthocytes are commonly associated with end-stage liver disease; however, hematopathologists should recognize alectinib as an alternate cause for acanthocytes and spheroacanthocytes on a peripheral blood film.

## CONFLICT OF INTEREST

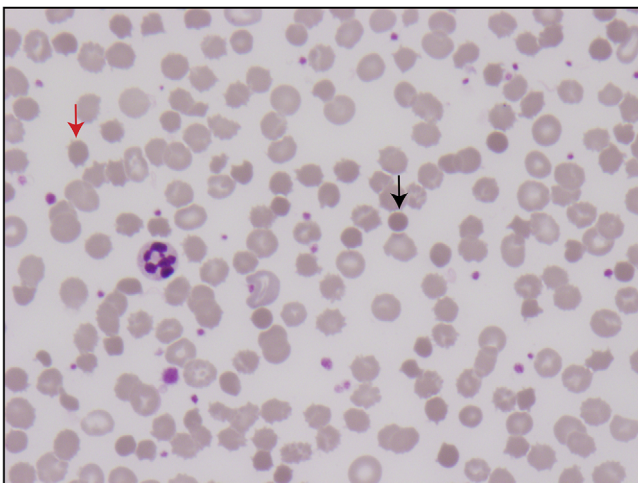
The authors declare no conflict of interest.

## CONSENT TO PARTICIPATE

The patient presented has given consent for his case to be published in a de-identified manner.

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**FIGURE 1** Spherocytes (black arrow) and spheroacanthocytes (red arrow)

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