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<th>Title</th>
<th>Transfusion-refractory anaemia in liver cirrhosis</th>
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ANSWER
From the question on page 5

There was significant echinocytosis, confirmed by scanning electron microscopy (SEM) (fig 1A, arrows). Serial blood films and SEM after a four-unit transfusion showed a decrease followed by progressive increase in echinocytes (fig 1B,C), indicating that transfused red cells also became echinocytes. The diagnosis was haemolytic anaemia due to echinocytosis secondary to cirrhosis.

Echinocytosis might be found in cirrhosis of different aetiologies,1 where abnormal plasma high-density lipoproteins (HDLs) are present,1 owing to decreased hepatic clearance. Abnormal HDL incorporation into the red cell membrane perturbs its structure, leading to echinocytosis. An intrinsic red cell metabolic defect is not involved. Hence, transfused red cells also undergo echinocytic transformation. Echinocytes are poorly deformable and are destroyed during microcirculation filtration.2

This condition is different from alcoholic hepatitis-induced Zieve syndrome, with hyperlipidaemia and haemolytic anaemia.3 Acute alcoholic intoxication damages the red cell metabolism, leading to an acquired pyruvate kinase deficiency and plasma membrane oxidation, resulting in haemolysis.4

REFERENCES


Figure 2  A peripheral blood film, showing numerous dysmorphic red blood cells (arrows) (Wright stain, original magnification ×1000). (A) Peripheral blood film showing significant echinocytosis (arrows). This was confirmed by scanning electron microscopy (SEM), which showed numerous echinocytes (burr cells), characterised by membrane crenation with numerous small spicules (arrows) (Latin, echinus, meaning sea urchin). (B) Peripheral blood film 12 h after blood transfusion, showing only occasional echinocytes (arrows). This was confirmed with SEM. (C) Peripheral blood film 48 h after blood transfusion, showing a significant increase in the number of echinocytes (arrows), indicating that the transfused red cells underwent echinocytic transformation. This was confirmed with SEM.