



Spur Cell Anemia Mimicking DIC: A Marker of Advanced Cirrhosis

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Introduction

- Spur-cell anemia (SCA) is an uncommon, non-immune hemolytic anemia. When found in cirrhosis patients, it is usually an indicator of advanced liver disease and carries a poor prognosis.
- Here, we present a case of SCA and discuss its impact on the management and prognosis.

Case Description

- A 58-year-old male with a history of decompensated alcoholic cirrhosis, diabetes, and hypertension was admitted for abdominal distention and melena.
- Diagnostic paracentesis ruled out spontaneous bacterial peritonitis. His initial labs showed hemoglobin 9.7 g/dL, platelets $123 \times 10^9/L$, total bilirubin 6.6 mg/dL, direct bilirubin, 3.0 mg/dL, and INR 3.4. The patient underwent an upper endoscopy showing nonbleeding grade II esophageal varices and portal hypertensive gastropathy. The patient was discharged home after stabilization.
- Over the next 8 months, the patient had multiple hospitalizations secondary to hepatic decompensation and continued to be anemic (Hgb down to 8.3 g/dl) with persistent hyperbilirubinemia, largely indirect (total bilirubin up to 10.3 mg/dl, direct bilirubin, 3.1 mg/dl). Subsequent workup including hemolysis labs revealed haptoglobin < 8 mg/dl, fibrinogen 100 mg/dl, mildly elevated LDH (287 IU/L), and a negative direct antibody test (DAT).
- Reticulocyte index, however, was 1.2, indicative of hypoproliferative anemia. Due to chronicity and persistence of findings, DIC was deemed less likely. Multiple peripheral smears showed Spur cells, burr cells, and a few schistocytes (Figure 1). Based on this, SCA was the likely diagnosis, and the patient was referred for liver transplant consideration.

“Spur-cell anemia is a non-immune hemolytic anemia”

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Figure

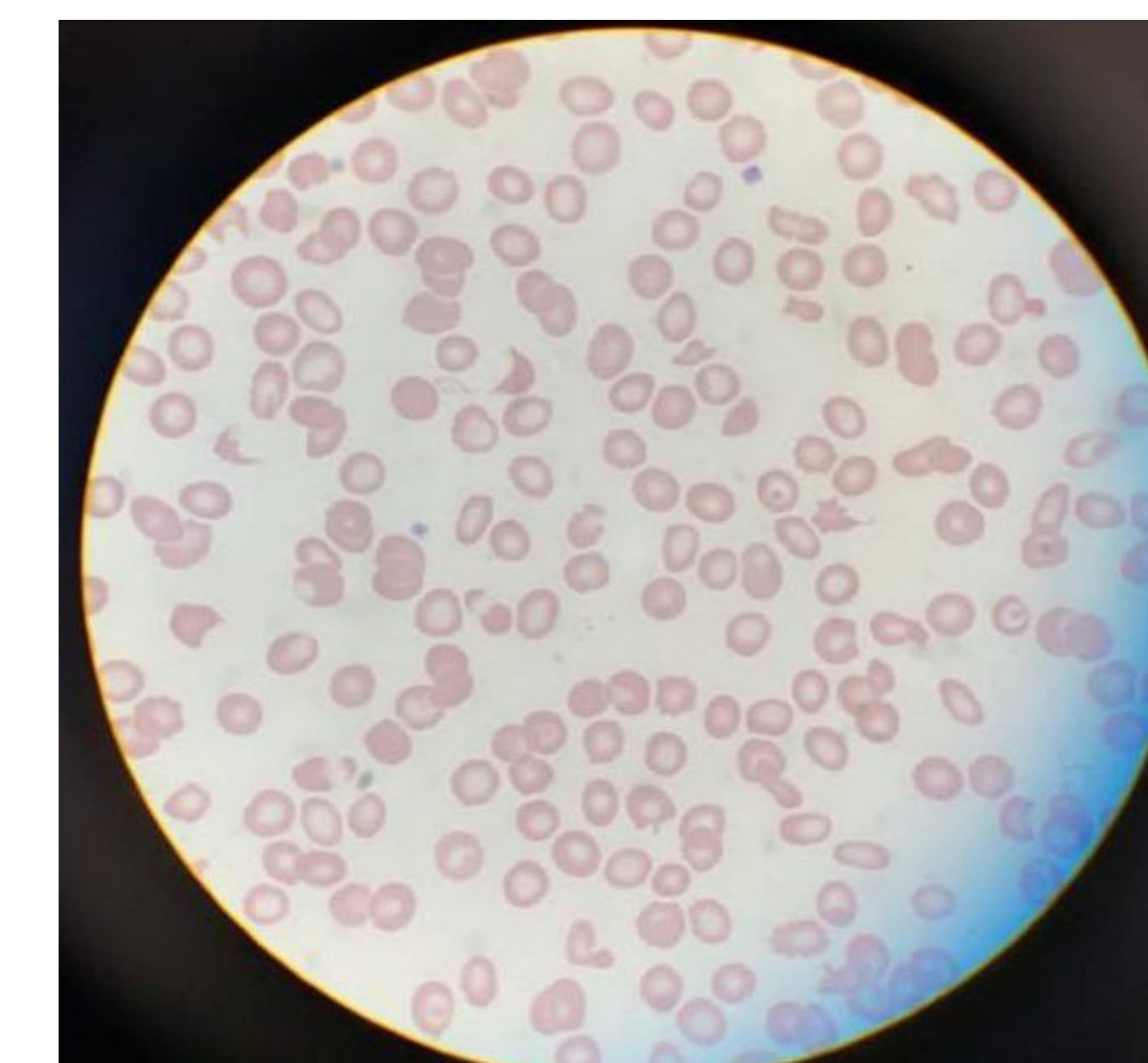


Figure 1: Peripheral-blood smear showing red cells with irregular surface projections suggestive of acanthocytes (spur cells) and echinocytes (burr cells).

Discussion

- Anemia in cirrhosis patients is usually multifactorial.
- SCA is an uncommon form of acquired, non-immune hemolytic anemia that was first described in 1964. It is linked to advanced liver disease, primarily alcohol-related, and is associated with a poor prognosis.
- In a study by Vassiliadis et al., out of nine SCA patients, eight died at three months, and only one was alive at one year (one of two who underwent liver transplantation). Doll et al. reported a similarly high mortality rate (7/8 patients at eight months).
- SCA pathogenesis is not well elucidated; however, abnormal lipid metabolism with consequent development of spike-like projections in RBCs is thought to contribute to the formation of spur cells.
- The presence of SCA is an important prognostic indicator for cirrhotic patients that clinicians should be aware of.