



Unexplained Anemia and Signet Ring Cell Carcinoma

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Clinical Image

A 32-year-old male presented with fever, weakness and weight loss since five months. He received multiple blood transfusions. Examination revealed pallor only. Complete blood count revealed hemoglobin 10.0 g/dl, MCV 82 fl, MCH 24 pg, white blood cell count $11.1 \times 10^9/L$, absolute neutrophil count $5.2 \times 10^9/L$ and platelet count $670 \times 10^9/L$. The peripheral blood smear showed anisocytosis and hypochromic red cells. Bone marrow aspirate was a dry tap while bone trephine touch imprints revealed clusters of non-hematopoietic cells. Bone trephine (H & E) section showed an effaced architecture with marked fibrosis and diffuse infiltration with signet ring cells (Figure 1A and B) containing mucin (PAS stain) (Figure 1C). The signet ring cells strongly expressed Cytokeratin (CK) AE1/AE3 and CK 20 while CK 7 was negative (Figure 1D). In view of these results, Signet Ring Cell Carcinoma (SRCC) of colon appears to be the most likely site of primary origin. The patient was lost to follow up without further investigations.

SRCC is a subtype of mucin-producing adenocarcinomas arising primarily from stomach, breast and colon. It is frequently associated with leucoerythroblastic blood picture or microangiopathic hemolytic anemia [1]. However, there were no such findings in our case, emphasizing the significance of bone marrow examination for unexplained anemia.

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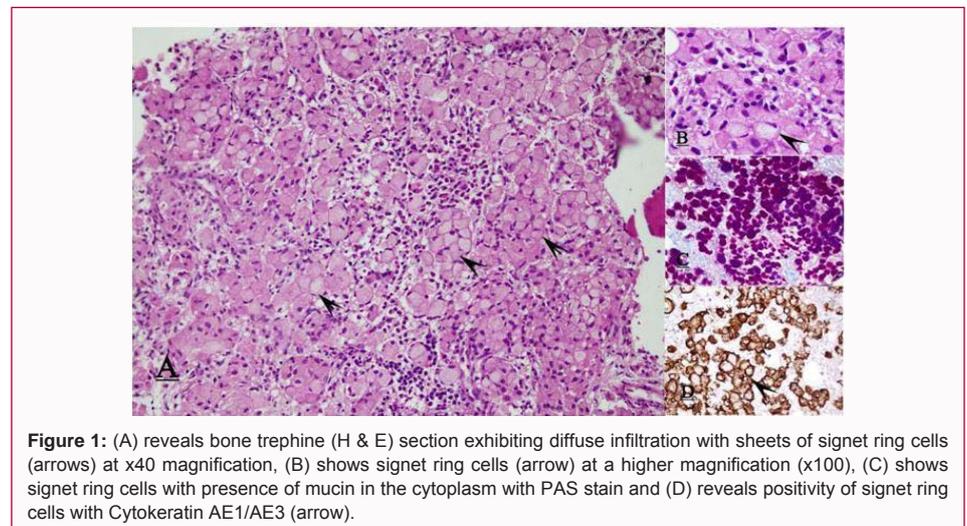


Figure 1: (A) reveals bone trephine (H & E) section exhibiting diffuse infiltration with sheets of signet ring cells (arrows) at x40 magnification, (B) shows signet ring cells (arrow) at a higher magnification (x100), (C) shows signet ring cells with presence of mucin in the cytoplasm with PAS stain and (D) reveals positivity of signet ring cells with Cytokeratin AE1/AE3 (arrow).

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