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SEVERE LIFE-THREATENING ANEMIA WITH THROMBOCYTOPENIA AND ASCITES IN A TRIBAL WOMAN: DIAGNOSTIC AND MANAGEMENT CHALLENGES IN A RESOURCE-LIMITED SETTING

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ABSTRACT **Background:** Severe anemia (hemoglobin <5 g/dL) is a major contributor to morbidity and mortality in low-resource settings. When associated with thrombocytopenia and ascites, it indicates an underlying systemic pathology requiring urgent evaluation. **Case Presentation:** A 42-year-old tribal female presented with severe weakness and progressive abdominal distension. Initial hemoglobin was 2 g/dL. Laboratory evaluation revealed severe anemia (Hb 2g/dL), thrombocytopenia ($37\times10^3/\mu L$), hypoalbuminemia, and ascites. Liver enzymes were near normal, and renal function was preserved. Despite referral to a tertiary care center, the patient refused transfer. She was managed at a district hospital with staggered transfusion (packed red blood cells, whole blood, and fresh frozen plasma), resulting in partial hematological improvement. **Discussion:** The constellation of bicytopenia with ascites suggests systemic disease. Differential diagnoses include abdominal tuberculosis, chronic liver disease with hypersplenism, bone marrow suppression, and severe nutritional deficiency. Management was complicated by socioeconomic constraints and limited resources. **Conclusion:** This case highlights the diagnostic challenges and ethical dilemmas in managing severe anemia in vulnerable populations and underscores the need for a multidisciplinary and socially sensitive approach.

KEYWORDS : Severe Anemia, Thrombocytopenia, Ascites, Abdominal Tuberculosis, Tribal Health, Hypoalbuminemia, Rural Healthcare

INTRODUCTION

Severe anemia remains a major public health concern in India, particularly among tribal populations with limited access to healthcare. Hemoglobin levels below 5 g/dL are associated with high morbidity and mortality due to tissue hypoxia and cardiac strain.

The coexistence of anemia, thrombocytopenia, and ascites broadens the differential diagnosis to include systemic conditions such as chronic liver disease, infections like tuberculosis, bone marrow disorders, and severe malnutrition. This case illustrates the clinical and logistical challenges in managing such patients in resource-constrained settings.

Case Presentation

A 42-year-old tribal (Adivasi) female from a rural area of Shivpuri district, Madhya Pradesh, belonging to a low socioeconomic background and with no available support system for blood donation, presented with complaints of severe generalized weakness, easy fatigability, and progressive abdominal distension. On clinical examination, her general condition was poor, with marked pallor (++++) and a distended abdomen suggestive of ascites, with no evidence of active bleeding. Laboratory investigations revealed severe anemia with an initial hemoglobin of 2.2 g/dL, which improved to approximately 4.9 g/dL following transfusion. The red blood cell count was markedly reduced ($0.89\times10^6/\mu L$), with mean corpuscular volume ranging from 81–93 fL, indicating normocytic to mildly microcytic anemia, and a significantly elevated red cell distribution width 25%, suggestive of anisocytosis. Platelet counts were reduced ($37\times10^3/\mu L$), consistent with thrombocytopenia, while total leukocyte counts were $3.7\times10^3/\mu L$. Biochemical evaluation demonstrated hypoalbuminemia 2.1 g/dL with reduced total protein levels, mild elevation of bilirubin (direct bilirubin up to 0.74 mg/dL), and near-normal to mildly elevated transaminases (AST/ALT). Renal function was preserved, with normal serum creatinine, while serum uric acid was elevated 8mg/dL. Urine examination showed no proteinuria or evidence of infection. Ultrasonography of the abdomen revealed gross ascites. Due to the lack of blood donors and the patient's refusal for referral to a higher center, management was continued at the district hospital, where she received transfusion of two units of packed red blood cells, one unit of whole blood, and three units of fresh frozen plasma. Supportive treatment included nutritional rehabilitation, planned supplementation with iron, folate, and vitamin B12, along with salt restriction and diuretic therapy . Following intervention, hemoglobin improved to approximately 5 g/dL. However, the patient remained clinically weak with persistent ascites, and further diagnostic evaluation could not be pursued due to refusal of referral.

DISCUSSION

This case represents bicytopenia, characterized by severe anemia with thrombocytopenia in association with ascites, suggesting an underlying systemic disease process rather than isolated hematological or nutritional pathology. One of the foremost considerations is abdominal tuberculosis, which is highly prevalent in low-resource and tribal populations and is known to present with anemia, ascites, and hypoalbuminemia due to chronic inflammation and protein loss [6]. Chronic liver disease with hypersplenism is another important differential, as it can explain both thrombocytopenia and ascites; however, the absence of significant transaminase elevation and lack of clear biochemical evidence of hepatic dysfunction reduce its diagnostic certainty in this case [4,7]. Bone marrow suppression or infiltrative disorders must also be considered in view of persistent cytopenias, particularly when there is inadequate hematological response to transfusion, suggesting a primary marrow pathology [5]. Severe nutritional deficiency, including iron, folate, and vitamin B12 deficiency, is also a plausible contributor, especially given the elevated red cell distribution width (RDW) and hypoalbuminemia, which reflect chronic malnutrition in a socioeconomically deprived patient [2,3]. Additionally, chronic blood loss, particularly from gynecological causes such as menorrhagia or underlying uterine pathology, should be evaluated as a potential etiology of severe anemia in this patient [1].

Clinical Insights

- Hemoglobin <3 g/dL is life-threatening and mandates urgent transfusion
- Thrombocytopenia suggests systemic involvement rather than isolated anemia
- Hypoalbuminemia contributes significantly to ascites formation
- Fresh frozen plasma should be used only in the presence of coagulopathy

Challenges in Management

- Lack of blood donors
- Patient refusal for tertiary care
- Limited diagnostic resources
- Socioeconomic and cultural barriers

CONCLUSION

This case highlights the complexity of severe anemia with multisystem involvement in a resource-limited setting. A syndromic approach is essential, and evidence-based care with real-world constraints. Strengthening rural healthcare systems and addressing social determinants are crucial for improving outcomes in such patients.

REFERENCES

1. World Health Organization. Haemoglobin concentrations for the diagnosis of anaemia and assessment of severity. Geneva: WHO; 2011.
2. Balarajan Y, Ramakrishnan U, Özaltin E, Shankar AH, Subramanian SV. Anaemia in low-income and middle-income countries. Lancet. 2011;378 (9809):2123-2135.
3. Cappellini MD, Motta I. Anemia in clinical practice— definition and classification: does hemoglobin change with aging? Semin Hematol. 2015;52(4):261-269.
4. Runyon BA. Management of adult patients with ascites due to cirrhosis: an update. Hepatology. 2009;49(6):2087-2107
5. Santra G, Das BK. A cross-sectional study of the clinical profile and etiology of pancytopenia in a tertiary care center. Singapore Med J. 2010;51(10):806-812.
6. Sharma SK, Mohan A. Abdominal tuberculosis. Indian J Med Res. 2004;120(4):305-315.
7. Goyal H, Awad HH, Hu ZD. Chronic liver disease and thrombocytopenia: mechanisms and management. Clin Liver Dis. 2019;23(4):623-636.
8. Means RT Jr. The anemia of chronic disease: modern concepts of an ancient disorder. Hematology Am Soc Hematol Educ Program. 2020;2020(1):1-8.
9. O'Leary JG, Greenberg CS, Patton HM, Caldwell SH. AGA clinical practice update: coagulation in cirrhosis. Gastroenterology. 2019;157(1):34-43.
10. Horton L, Coburn RJ, England JM, Himsworth RL. The haematology of hookworm infection. Q J Med. 1969;38(150):211-223.