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Case Report on Plummer-Vinson Syndrome with Anemia, Acute Anal Fissure, and LRTI

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ABSTRACT :

A 24-year-old male presented with complaints of fever, sore throat, and cough with whitish sputum for one week. He also reported blackish discoloration of stools and bleeding per rectum for two months. Clinical evaluation and laboratory investigations revealed anaemia and features consistent with Plummer-Vinson syndrome (PVS) along with an acute anal fissure and lower respiratory tract infection (LRTI). The patient was managed symptomatically with antibiotics, hematinic supplementation, and supportive therapy. This case highlights the association of iron deficiency anaemia with gastrointestinal and oropharyngeal manifestations, emphasizing the importance of early diagnosis and multidisciplinary care.

Introduction

Plummer-Vinson syndrome (PVS), also known as Paterson-Brown-Kelly syndrome, is a rare condition characterized by the triad of iron deficiency anaemia, dysphagia, and oesophageal webs. It primarily affects middle-aged women but can also occur in males. Iron deficiency leads to mucosal atrophy, predisposing to web formation and increased risk of malignancy. This case discusses a young male patient diagnosed with PVS associated with anaemia, anal fissure, and lower respiratory tract infection (LRTI).

PATHOPHYSIOLOGY

Iron plays a crucial role in epithelial maintenance and cellular metabolism. Chronic iron deficiency leads to mucosal atrophy, causing structural changes in the oesophageal epithelium that predispose
to web formation.

The triad of Plummer–Vinson Syndrome includes:

- Dysphagia (difficulty swallowing)
- Iron deficiency anaemia
- Oesophageal webs

These oesophageal webs are thin mucosal membranes that partially obstruct the upper oesophagus, leading to progressive dysphagia, usually for solids.

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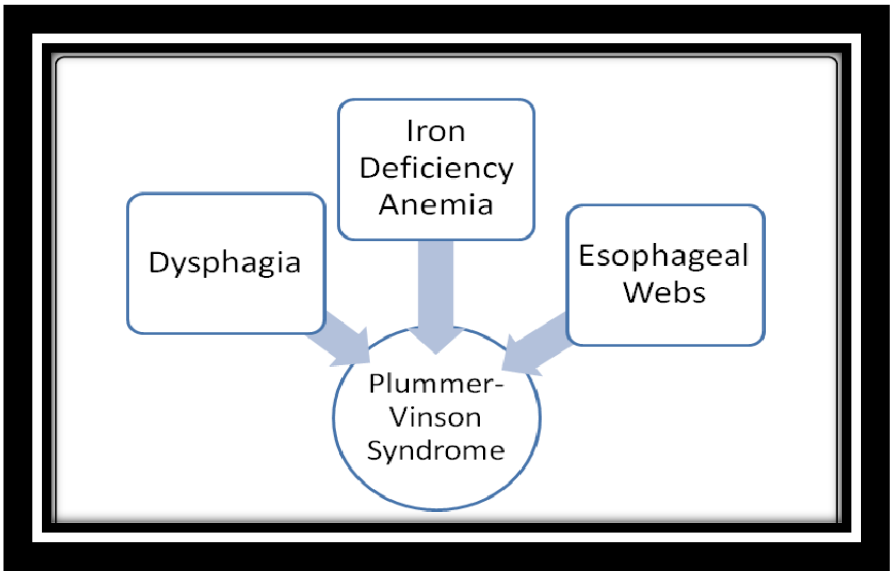

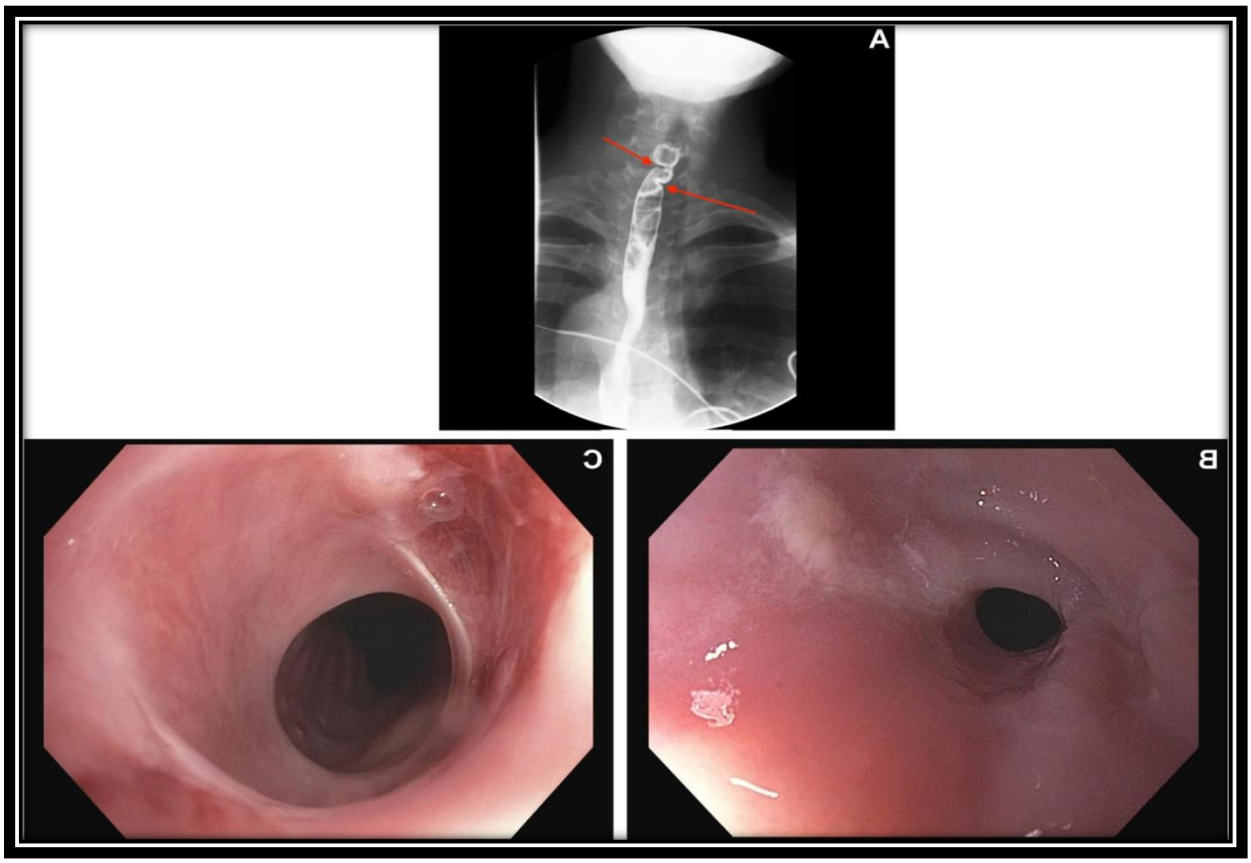

Fig.1 Plummer-Vinson Syndrome: Classic Triad of IronDeficiency Anaemia, Dysphagia, and Oesophageal Webs

TYPES OF IRON DEFICIENCY ANEMIA

1. Nutritional IDA: Due to inadequate dietary intake of iron.
2. Blood Loss IDA: Chronic gastrointestinal or menstrual blood loss.
3. Malabsorption IDA: Seen in celiac disease, post-gastrectomy, or intestinal infections.
4. Increased Demand IDA: Occurs during pregnancy, lactation, or growth spurts.

Case Presentation

Patient Information
A 24-year-old male, previously healthy, presented with complaints of cold with sore throat for one week. The patient was apparently asymptomatic two weeks ago, after which he developed fever that was insidious in onset, low-grade, intermittent, and associated with chills. He also complained of cough with whitish sputum and difficulty swallowing for 2–3 months.

History of Present Illness

Fever and cough were aggravated on lying down. The patient denied shortness of breath, chest pain, or abdominal pain. He reported blackish discoloration of stools and bleeding per rectum for the past two months. There was no history of vomiting or loose stools during admission.

Past Medical and Surgical History

- No known history of diabetes mellitus, hypertension, thyroid disorders, asthma, coronary artery disease, or epilepsy.
- No prior surgeries.
- History of blood transfusion (2 units) about eight years ago in a private hospital at Kompally.
- Personal and Social History
- Diet: Mixed
- Appetite: Reduced
- No history of alcohol, smoking, or substance abuse.
- No family history of similar illness.

- Clinical Findings
- Blood Pressure: 120/80 mmHg
- Pulse Rate: 88 bpm
- SpO_2: 98% on room air
- General Appearance: Pale, afebrile during examination.

Systemic Examination : No hepatosplenomegaly; respiratory examination revealed mild crepitations bilaterally.

Laboratory Investigations

1. Hemoglobin : 5.5 g/dL (Normal: 13–17 g/dL) — Severe anemia
2. RBC Count: 4.24 million/µL (Normal: 4.5–6.0 million/µL) — Low
3. Platelet Count: 2.3 lakh/µL (Normal: 1.5–4.0 lakh/µL) — Normal
4. Total Bilirubin: 0.4 mg/dL (Normal: 0.2–1.2 mg/dL) — Normal
5. SGOT (AST): 31 U/L (Normal: <40 U/L) — Normal
6. SGPT (ALT): 22 U/L (Normal: <40 U/L) — Normal
7. ALP: 129 U/L (Normal: 40–129 U/L) — Normal
8. Total Protein: 7.6 g/dL (Normal: 6.4–8.3 g/dL) — Normal
9. Albumin: 4.8 g/dL (Normal: 3.5–5.0 g/dL) — Normal
10. Globulin: 2.8 g/dL (Normal: 2.0–3.5 g/dL) — Normal
11. Blood Urea: 90 mg/dL (Normal: 7–20 mg/dL) — Elevated
12. Serum Creatinine: 0.8 mg/dL (Normal: 0.6–1.3 mg/dL) — Normal

Interpretation:

Findings are consistent with iron deficiency anaemia and mild renal function derangement.

Diagnosis

Plummer-Vinson Syndrome
Iron Deficiency Anaemia
Lower Respiratory Tract Infection (LRTI)
Acute Anal Fissure

Treatment Given

1. Syrup Ascorlyl – 10 mL, TID — For cough relief
2. Tablet Montex-LC – 1 tablet at bedtime (HS) — Antihistamine / antiallergic
3. Tablet Dolo 650 – 1 tablet, TID — Antipyretic / analgesic
4. Injection Paracetamol – SOS (as needed) — For fever
5. Injection Optineuron – 1 amp, IM, OD — Vitamin B complex supplement
6. Injection Pantoprazole – 40 mg, IV, OD — For gastric protection
7. Injection Monocef (Ceftriaxone) – 1 g, IV, BD — Antibiotic
8. Sitz Bath – At bedtime — For anal fissure relief
9. Syrup Cremaffin – 15 mL, HS — Stool softener
10. Supportive care – Included iron supplementation, hydration, and dietary counselling

Outcome and Follow-Up

After treatment, the patient showed clinical improvement with relief of sore throat, cough, and reduced rectal bleeding. Haemoglobin levels were planned to be reassessed after 2 weeks of oral iron therapy. The patient was advised dietary modifications (iron-rich foods), follow-up for anaemia correction, and ENT evaluation for dysphagia.

Pharmacist's Role

- Medication review: Checked for drug interactions and appropriate dosing.
- Patient counselling: Advised iron-rich diet (leafy vegetables, jaggery, liver, meat).
- Therapeutic monitoring: Suggested follow-up for repeat haemoglobin and renal function test.
- Adverse effect monitoring: Educated patient regarding constipation with iron therapy and preventive measures.

Discussion

Plummer-Vinson syndrome is a rare manifestation of chronic iron deficiency, presenting with dysphagia, anaemia, and mucosal changes. Iron deficiency leads to epithelial atrophy and web formation in the upper oesophagus. Though classically seen in middle-aged females, this case highlights that it can occur in males as well. The coexistence of LRTI and anal fissure may worsen anaemia due to inflammation and blood loss. Timely recognition and management with iron supplementation, nutritional therapy, and infection control can significantly improve prognosis.

Conclusion

This case emphasizes the importance of early detection of iron deficiency anaemia and its potential complications such as Plummer-Vinson syndrome. A multidisciplinary approach involving physicians, gastroenterologists, and clinical pharmacists is crucial for effective management and prevention of recurrence.

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