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Dental Management in Patients with Anemia

Iron Deficiency Anemia

Definition:

The most common type of anemia, typically caused by chronic blood loss or inadequate dietary iron intake, as well as gastrointestinal malabsorption disorders.

Recommended Laboratory Tests by the Dentist:

- Complete blood count (CBC)
- Ferritin (Normal: 15–200 ng/mL)
- Transferrin saturation index (Normal: 20–50%)
- Platelet and white blood cell counts

Dental Considerations:

Oral findings may include pale mucosa, angular cheilitis, glossitis, and burning sensation. Elective treatments should be delayed if hemoglobin is

<10 g/dL. Local anesthesia is permitted, but extensive surgeries are not recommended in decompensated patients.

Dental Treatment:

Conservative procedures like restorations, prophylaxis, and non-surgical periodontal therapy can be performed. Extractions should be avoided in patients with hemoglobin <8 g/dL unless medically stabilized. Mandatory referral to hematologist for iron therapy and etiologic diagnosis

Megaloblastic Anemia (Vitamin B12 and/or Folic Acid Deficiency)

Definition:

A macrocytic anemia due to impaired DNA synthesis, commonly caused by vitamin B12 or folate deficiency, often due to malabsorption or poor diet.

Recommended Laboratory Tests by the Dentist:

- CBC with MCV (Macrocytosis: MCV >100 fL)
- Serum vitamin B12 (Normal: 200–900 pg/mL)
- Serum folate (Normal: 2.5–20 ng/mL)
- Homocysteine and methylmalonic acid if available

Dental Considerations:

Glossitis, mucosal atrophy, burning mouth, and paresthesia may occur. Anemia impairs oxygen delivery and healing. Neurological evaluation is required if sensory changes are present.

Dental Treatment:

Minimally invasive procedures are allowed in compensated patients. Avoid surgery if hemoglobin <9 g/dL or in symptomatic cases.

Immediate referral to hematologist for vitamin supplementation and systemic management.

Anemia of Chronic Disease (Inflammatory, Renal, Autoimmune)

Definition:

A normocytic or microcytic anemia secondary to chronic systemic conditions, with impaired erythropoiesis and/or reduced red cell lifespan.

Recommended Laboratory Tests by the Dentist:

- CBC
- Ferritin (Normal or high in this context)
- Creatinine (Normal: 0.6–1.3 mg/dL)
- C-reactive protein (CRP) or ESR

Dental Considerations:

Patients may be immunocompromised or have cardiovascular comorbidities. Periodontal infections can exacerbate systemic inflammation. Emphasize plaque control and preventive care.

Dental Treatment:

Avoid procedures involving bleeding or stress during active systemic inflammation. Keep appointments short and ensure adequate oxygenation.

Referral to hematologist and/or primary physician before surgical or lengthy procedures.

Hemolytic Anemia (Hereditary or Autoimmune)

Definition:

A group of anemias caused by premature destruction of red blood cells. Includes hereditary spherocytosis, thalassemia, sickle cell anemia, and autoimmune hemolytic anemia.

Recommended Laboratory Tests by the Dentist:

- CBC
- Indirect bilirubin (Elevated in hemolysis)
- Haptoglobin (Decreased)
- Reticulocyte count (Elevated)

Dental Considerations:

May present with jaundice, fatigue, splenomegaly, and bone changes. Sickle cell patients are prone to vaso-occlusive crises triggered by infection or stress.

Dental Treatment:

Avoid long procedures; maintain hydration. For sickle cell disease, avoid nerve blocks without medical clearance and prevent hypoxia.

Mandatory referral to hematologist before extractions or any surgical intervention.

Aplastic Anemia

Definition:

A life-threatening condition where the bone marrow fails to produce sufficient blood cells, leading to pancytopenia. Causes include autoimmune disease, toxins, viral diseases, iatrogenic causes (chemotherapeutics, chloramphenicol, etc.) or idiopathic factors.

Recommended Laboratory Tests by the Dentist:

CBC with differential

Platelet count (Normal: 150,000–400,000/mm³)

PT, aPTT

Bone marrow biopsy (ordered by hematologist)

Dental Considerations:

Patients are at high risk of spontaneous bleeding, infections, and poor wound healing. If platelet count <50,000/mm³, there is a severe bleeding risk.

Dental Treatment:

Only non-invasive procedures are allowed. Even prophylaxis must be atraumatic. Surgery must be performed only in a hospital setting with prior platelets and red blood cells transfusion, and granulocyte growth factors (G-CSF)

Urgent referral to hematologist, as all procedures require prior stabilization and clearance

References

1. Hurley CR, Winters J, McAlpine M, et al. Gingival Debulking Surgery for a Child With Severe Aplastic Anemia: A Case Report. *Spec Care Dentist*. 2025 Jan-Feb;45(1):e13106.
2. Agnihotri R, Bhat KM, Bhat GS, et al. Periodontal management of a patient with severe aplastic anemia: a case report. *Spec Care Dentist*. 2009 May-June;29(3):141-4.
3. Gupta M, Rao BD, Shah K, et al. Does Serum Ferritin Level Affect Early Childhood Caries?-A Review. *Int J Clin Pediatr Dent*. 2025 Apr;18(4):487-490.

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