Lymphadenopathy & Splenomegaly

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SPLENOMEGALY

At a glance

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- Pathophysiology & Epidemiology
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- Treatment & Management

Definition

Splenomegaly is defined as enlargement of the spleen, measured by size or weight.

Pathophysiology

Anatomy

The spleen is the largest lymphoid organ in the body.

٦/٠ cm at age ٣ months
٦/٥ cm at age ٦ months
٧/٠ cm at age ١٢ months
٨/٠ cm at age ٢ years
٩/٠ at age ٤ years
٩/٥ cm at age ٦ years
١٠/٠ cm at age ٨ years
١١/٠ cm at age ١٠ years
١١/٥ cm at age ١٢ years
١٢/٠ cm at age ١٥ years < (females)
١٣/٠ cm at age ١٥ years < (males)

Function of spleen

- The filtration of defective blood cells
- Reservoir for platelets
- Produces blood components
- Immunologic function

Epidemiology

A ١- to ٢-cm splenic tip is palpable :

- approximately ٣٠% of full-term neonates
- as many as ١٠% of healthy children overall.

Etiology

Splenomegaly is often categorized in :

- Sequestration of blood cells - Such as in hemolytic conditions
- Proliferation due to infection or inflammation
- Deposition - Such as in Niemann-Pick and Gaucher disease and in some infections

Etiology

- Infiltration due to granulomatous, histiocytic, lymphoproliferative , or malignant conditions
- Endowment - As caused by space-occupying lesions

Etiology

Splenic masses

Hyperplasia

Malignancy

Portal venous system abnormalities

Deposition causing splenomegaly

Masses

Extramedullary hematopoiesis

Hypersplenism

Splenic sequestration

History

- Duration of known enlargement of the spleen.
- Exposure to hepatotoxic agents or microorganisms resulting in hepatitis or portal hypertension.
- Abdominal trauma that may cause splenic hematoma.
- Signs of infection or known infections such as hepatitis, mononucleosis, malaria, or salmonellosis.
- Inflammatory bowel disease

History

- Bone pain, fever, malaise, lethargy, pallor, bruising, weight loss, night sweats, or other findings that may indicate malignancy
- Jaundice suggestive of hepatobiliary disease
- Anemia
- Cholecystectomy
- Splenectomy - Eg, due to hemolytic anemi

History

- Fever or rigors indicative of infection
- Jaundice (evidence of liver disease).
- Abnormal bleeding or bruising (hematologic malignancy).
- Family history of hemolytic anemia (thalassemia major).
- Travel to endemic areas (e.g., malaria).
- Trauma (splenic hematoma).

Physical Examination

- The patient should be examined in the supine or right lateral decubitus position.
- Palpation should start at the pubis and move toward the left upper quadrant to identify the medial and inferior border of the spleen.

Physical Examination

- Size of spleen; consistency, tender ness.
- Hepatomegaly.
- Lymphadenopathy.
- Fever.
- Ecchymoses, purpura, petechiae.

Physical Examination

- Pruritus, pallor, icterus, exanthem, or enanthem
- Abnormal vital signs
- Ophthalmologic abnormalities (uveitis, iritis, vascular occlusion, opacification)
- Abnormal heart sounds
- Dyspnea, abnormal breath sounds
- Hepatomegaly, abdominal masses or tenderness

Differential Diagnoses

- Acute Lymphoblastic Leukemia (ALL)
- Cavernous transformation of the portal vein
- Gaucher Disease
- Heart Failure, Congestive
- Hemolytic Anemia
- Hepatitis
- Hereditary Spherocytosis

Differential Diagnoses

- Hodgkin Lymphoma
- Immunodeficiency disorders
- Lipid Storage Disorders
- Portal Hypertension
- Sickle Cell Disease
- Systemic Lupus Erythematosus (SLE)
- Tuberculosis (TB)

Workup in pediatric splenomegaly

- Splenomegaly is usually the result of a systemic disorder rather than primary splenic disease.
- Therefore, diagnostic studies are not directed solely towards the spleen.
- The most useful initial laboratory test is the complete blood count (CBC) with manual differential and peripheral blood smear.
- This test should be performed on all patients with an enlarged spleen.

Laboratory Investigations

- Evaluation for evidence of hemolytic disease
- Evaluation for infection
- Evaluation for liver disease
- *Evaluation for portal hypertension*
- *Evaluation for connective tissue disease*
- *Evaluation for infiltrative disease*
- *Lymph node biopsy*

Laboratory Studies

The CBC may be revealing, as follows:

- The WBC count
- The platelet count
- Hemoglobin concentrations
- LFT

Workup in pediatric splenomegaly

Ultrasonography alone is the most appropriate means of imaging the spleen in pediatric patients, s noninvasive and does no radiation.

Imaging studies:

- CT scan
- Magnetic resonance imaging (MRI)
- Liver – spleen scans with ^{99}mTc-sulfur colloid

Treatment & Management

Because splenomegaly is usually the result of a systemic disease, the primary goal is treatment of the underlying process.

- ***Splenectomy***

  - the benefit-to-risk ratio must be carefully determined if splenectomy is considered.


Thank You For Your Attention