

UNIT 3

COURSE NAME: HUMAN ANATOMY&PHYSIOLOGY

TOPIC: LYMPHATIC SYSTEM

Case Study Puzzle 1: The Swollen Limb

A 58-year-old woman who underwent mastectomy and axillary lymph node dissection for breast cancer 5 years ago notices progressive swelling in her affected arm. The swelling is pitting at first but becomes firm and non-pitting over time, with skin thickening. There is no pain, but the arm feels heavy.

Stages of Lymphedema

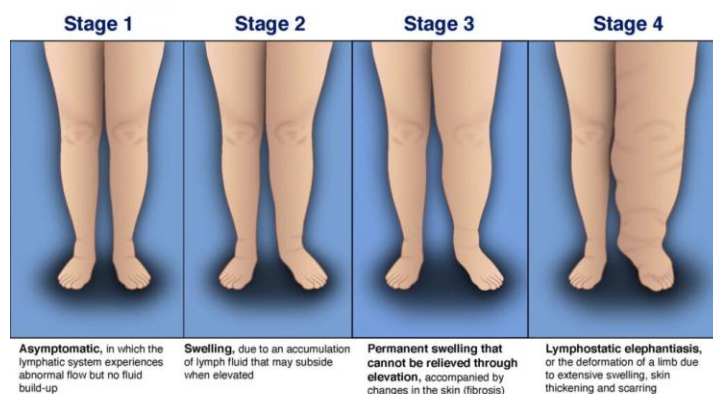


Illustration: Chrystie Tyler



Puzzle: What chronic condition of the lymphatic system results from impaired lymph drainage, often secondary to surgery or radiation, leading to protein-rich fluid accumulation in tissues? Hint: It's a common complication in cancer survivors and can progress through stages if untreated.

(Solution: Lymphedema, due to obstruction or removal of lymphatic vessels/nodes.)

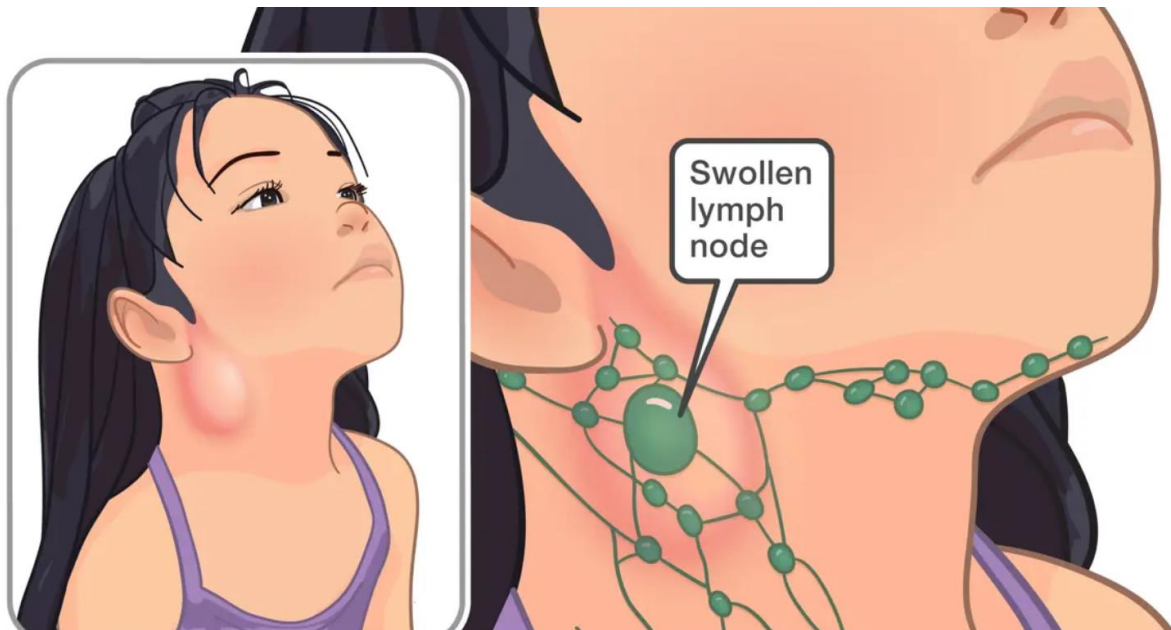
Ask the Doctors: Lymphedema Symptoms and Causes with Doctors Sacks ...

Case Study Puzzle 2: The Painful Neck Bump

A 25-year-old man presents with tender, enlarged lymph nodes in the cervical region, accompanied by fever, sore throat, and fatigue. The nodes are mobile and soft. Blood tests show elevated white cells with lymphocytosis, and the condition resolves with supportive care.

Puzzle: What reactive enlargement of lymph nodes (lymphadenopathy) commonly occurs in response to local infection, filtering pathogens and mounting an immune response? Hint: It's a normal function of the lymphatic system but can indicate underlying issues if persistent.

(Solution: Reactive lymphadenitis, often due to viral or bacterial infection like streptococcal pharyngitis.)



Case Study Puzzle 3: The Night Sweats Mystery

A 32-year-old woman reports painless lymphadenopathy in multiple sites, intermittent fever, night sweats, and weight loss. Biopsy of an enlarged node reveals large binucleate cells with prominent nucleoli in a background of lymphocytes.

Puzzle: What malignancy of the lymphatic system is characterized by Reed-Sternberg cells and often presents with B symptoms (fever, night sweats, weight loss)? Hint: It's a type of lymphoma that typically has a bimodal age distribution.

(Solution: Hodgkin lymphoma, involving neoplastic Reed-Sternberg cells derived from B lymphocytes.)

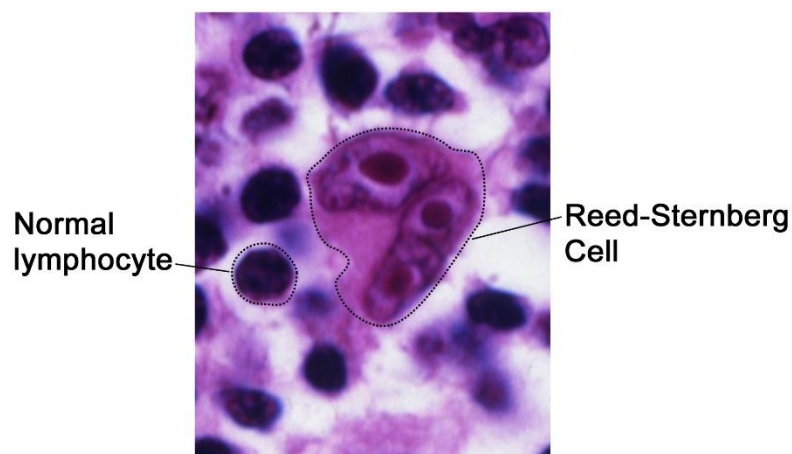
Case Study Puzzle 4: The White Patches on Throat

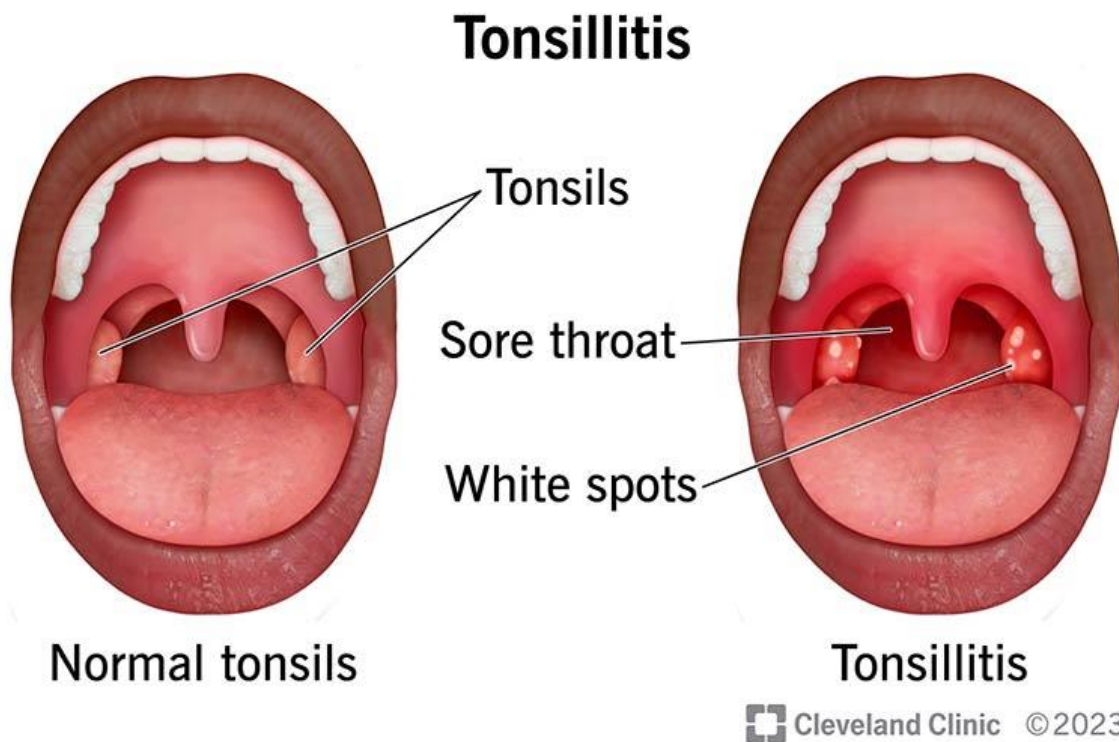
A 12-year-old child complains of severe sore throat, difficulty swallowing, and fever. Examination shows enlarged tonsils covered with white exudates and cervical lymphadenopathy. Rapid strep test is positive.

Puzzle: What lymphoid tissues in the oropharynx, part of Waldeyer's ring, become inflamed and enlarged in response to bacterial infection, acting as a first line of defense in the lymphatic system? Hint: They can be surgically removed if recurrent.

(Solution:
inflammation
palatine tonsils
pathogens.)

Tonsillitis,
of the
trapping





Tonsillitis: Symptoms, Causes & Treatment

Case Study Puzzle 5: The Massive Leg Deformity

A 45-year-old man from an endemic tropical area presents with grossly enlarged lower limbs, thickened skin resembling elephant hide, and recurrent infections. History reveals mosquito bites and parasitic infection confirmed by blood smear.

Puzzle: What severe chronic lymphatic obstruction is caused by parasitic worms (filariae), leading to massive lymphedema and tissue hyperplasia? Hint: It's a neglected tropical disease transmitted by mosquitoes, also known as lymphatic filariasis.

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(Solution: Elephantiasis, due to *Wuchereria bancrofti* or *Brugia* species blocking lymphatic vessels.)

