

LECTURE 5: SURGICAL INFECTION PART 3

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+ Anthrax الجمره الخبيثة

- Anthrax is a zoonotic disease occurring in domesticated and wild herbivores.
- The largest recent epidemic of inhalational anthrax occurred in 1979 in Russia, after accidental release of anthrax spores from a military facility.
- Inhalational anthrax develops after a 1-6 day incubation period, with nonspecific symptoms, including malaise, myalgia, and fever.
- Over a short period of time these symptoms worsen, with development of respiratory distress, chest pain, and diaphoresis.
- In investigations:
 - Chest x-ray: a widened mediastinum and pleural effusions.
 - Rapid antigen tests: identify gram-positive rod.
- Post exposure prophylaxis consists of administration of either ciprofloxacin or doxycycline.
- If penicillin-sensitive, the patient should be switched to amoxicillin.
- Inhalational exposure followed by the development of symptoms is associated with a high mortality rate.
- Treatment options: ciprofloxacin, clindamycin, and rifampin.

+ Tuberculosis (TB) التدرن

- A contagious infection that usually attacks the lungs.
- It can also spread to other parts of your body, like your brain and spine.
- Causative agent: bacteria called *Mycobacterium tuberculosis*.
- A TB infection doesn't always mean you'll get sick.
- There are two forms of the disease:

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- **Latent TB.** Bacteria in your body, but your immune system keeps them from spreading. Asymptomatic, and not contagious. But the bacteria is still alive and can one day become active.
 - **Active TB.** The bacteria multiply and make you sick. You can spread the disease to others. Ninety percent of active cases in adults come from a latent TB infection. A latent or active TB infection can also be drug-resistant, meaning certain medications don't work against the bacteria.
- Tuberculosis Signs and Symptoms
 - Latent TB doesn't have symptoms.
 - Signs of active TB disease include:
 - A cough that lasts more than 3 weeks
 - Chest pain.
 - Coughing up blood.
 - Feeling tired all the time.
 - Night sweats.
 - Chills.
 - Fever.
 - Loss of appetite.
 - Weight loss.
- Tuberculosis Tests and Diagnosis
 - There are two common tests for tuberculosis:
 - Skin test (tuberculin skin test).
 - Blood test.
 - interferon-gamma release assays (IGRAs).
 - A chest X-ray or CT scan to look for changes in your lungs.

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- Acid-fast bacillus (AFB) tests for TB bacteria in sputum, the mucus that comes up when you cough.
- Tuberculosis Treatment:
 - Latent TB: medication to kill the bacteria so the infection doesn't become active. Isoniazid, rifampin, either alone or combined for up to 9 months.
 - Active TB: ethambutol, isoniazid, pyrazinamide, and rifampin for 6 to 12 months.
 - Drug-resistant TB: one or more different medicines for much longer, up to 30 months, and they can cause more side effects.
- Tuberculosis Complications:
 - Joint damage.
 - Lung damage.
 - Infection or damage of your bones, spinal cord, brain, or lymph nodes.
 - Liver or kidney problems.
 - Inflammation of the tissues around your heart.

Syphilis

- A sexually transmitted disease (STD)
- causative agent: *Treponema pallidum*.
- First sign is a small, painless sore (a chancre) .
- It can appear on the sexual organs, rectum, or inside the mouth.
- Challenging to diagnose.
- If untreated for a long time can cause major damage to important organs, like the heart and brain.
- Spread through direct contact with syphilitic chancres. It can't be transmitted by sharing a toilet with another person, wearing another person's clothing, or using another person's eating utensils.
- Stages of syphilis infection

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- When syphilis is in the hidden, or latent, stage, the disease remains active but often with no symptoms.
- The **four stages** of syphilis are:
- Syphilis is most infectious in the first two stages.
- Tertiary syphilis is the most destructive to health.
 - Primary syphilis:
 - three to four weeks after a person contracts.
 - A small, round sore called a chancre. A chancre is painless, but it's highly infectious.
 - Secondary syphilis
 - Skin rashes and a sore throat may develop.
 - The rash won't itch and is usually found on the palms and soles, but it may occur anywhere on the body.
 - Other symptoms of secondary syphilis may include: headaches, swollen lymph nodes, fatigue, fever, weight loss, hair loss, aching joints.
 - Latent syphilis (hidden, stage): This stage could last for years before progressing to tertiary syphilis.
 - Tertiary syphilis:
 - occur years or decades after the initial infection.
 - life-threatening.
 - Some other potential outcomes of tertiary syphilis include: blindness, deafness, mental illness, memory loss, destruction of soft tissue and bone, neurological disorders, such as stroke or meningitis, heart disease, neurosyphilis, which is an infection of the brain or spinal cord