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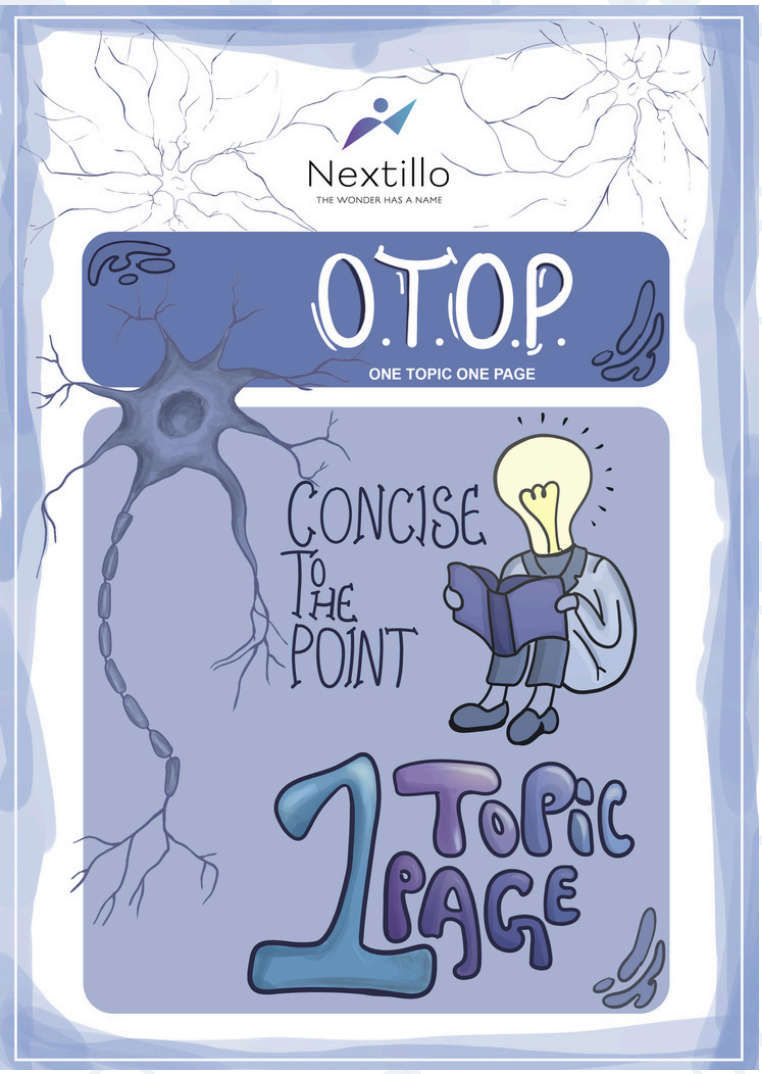

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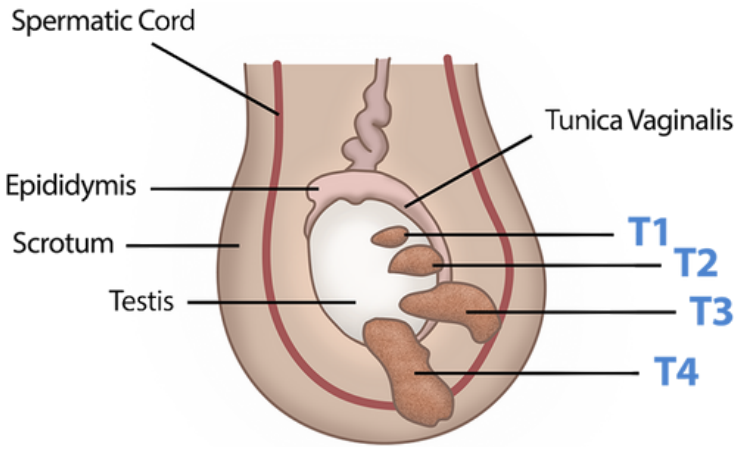
SCROTUM CANCER

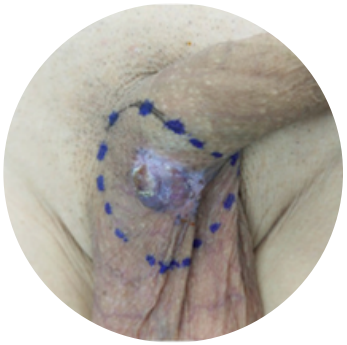


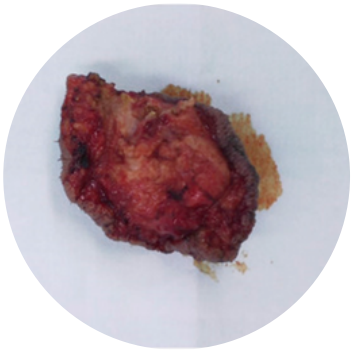
DEFINITION

- Scrotum cancer is a rare malignancy that affects the skin of the scrotum, usually developing as a result of prolonged exposure to carcinogenic substances.
- **Prevalence:** It is extremely rare, representing less than 1% of all skin cancers.

RISK FACTORS

- **Carcinogen Exposure:** Long-term exposure to substances like coal tar, soot, and tobacco can increase the risk.
- **Poor Hygiene:** Inadequate hygiene or a lack of regular cleaning of the scrotum may contribute to the development of chronic infections, increasing cancer risk.
- **Chronic Infections or Inflammation:** Conditions like lichen sclerosus (a skin condition) or history of scrotal dermatitis can increase susceptibility.





SYMPTOMS

- **Lumps or Growths:** A visible lump or ulceration on the scrotum that may become painful over time.
- **Sores:** Persistent sores or changes in the skin color.
- **Pain:** A dull pain or tenderness in the scrotal area.

PROGNOSIS

- Treatment outcomes are best with early intervention, although the survival rate may vary based on the subtype and stage of the disease.

TREATMENT

- **Surgery:** Removal of the tumor or scrotal tissue is the most common treatment. In severe cases, part of the scrotum may need to be removed.
- **Radiation Therapy:** Often used after surgery if there is a risk of the cancer spreading or if surgery was not completely effective.
- **Chemotherapy:** Rarely used for scrotum cancer, but may be necessary if the cancer has spread to other parts of the body.

SUBTYPES

1. **Squamous Cell Carcinoma (SCC):** The most common type, originating from the squamous cells of the scrotal skin. It is often linked to chronic irritation, infections, or poor hygiene.
2. **Basal Cell Carcinoma (BCC):** Less common in the scrotum, BCC typically occurs in areas exposed to sunlight. It's usually slow-growing and less aggressive.
3. **Melanoma:** A rarer type of skin cancer that may also develop in the scrotum, typically darker in color and more aggressive.

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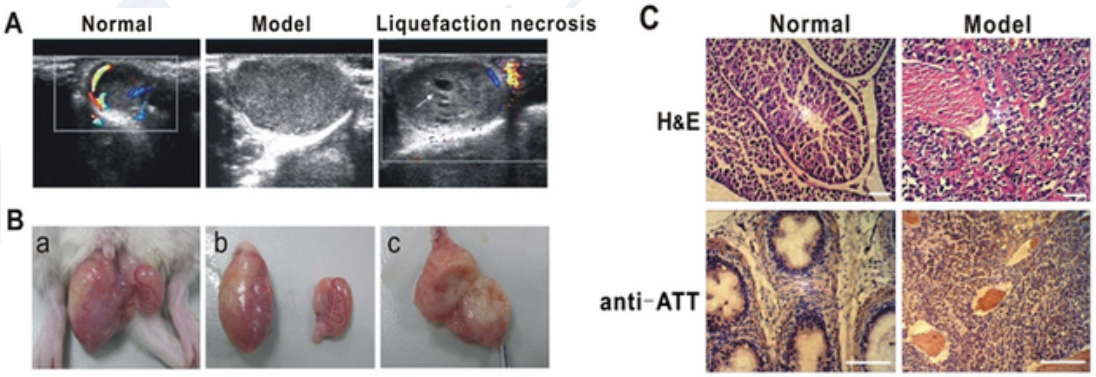
TESTICULAR CANCER

DEFINITION

- Testicular cancer originates in the testicles, which are responsible for sperm and testosterone production. It's relatively rare but the most common cancer in men aged 15-35.
- **Prevalence:** While it makes up only about 1% of all cancers in men, it is the most common cancer in younger males.

RISK FACTORS

- **Family History:** Men with a family member who had testicular cancer are at a higher risk.
- **Undescended Testicle:** Having a testicle that hasn't descended into the scrotum can increase the risk.
- **Age:** Most commonly diagnosed in men aged 15 to 35 years.
- **Previous Testicular Cancer:** If you've had it in one testicle, there's a greater chance it could occur in the other.



SYMPTOMS

- A **painless lump** or swelling in one of the testicles.
- **Discomfort** or a sensation of heaviness in the scrotum or groin area.
- **Pain** in the lower abdomen or back in some cases.

PROGNOSIS

- **Very good** if detected early, with a high survival rate (over 95%) even in advanced stages, thanks to effective treatments.

TREATMENT

- **Surgery:** Removal of the affected testicle (orchiectomy) is the most common treatment.
- **Chemotherapy:** Often used if the cancer has spread beyond the testicle.
- **Radiation:** Usually used for seminomas, especially if the cancer has spread to lymph nodes.

SUBTYPES

1. **Germ Cell Tumors** (Most Common):
2. **Seminomas:** Slow-growing, less aggressive, typically affect men aged 25-45.
3. **Non-Seminomas:** Faster-growing and more aggressive, found in younger men (usually under 35).
4. **Stromal Tumors:** These tumors originate from the supportive tissue in the testicles. They are less common and usually non-cancerous.

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DENGUE

INTRODUCTION

- Dengue is a viral infection spread by Aedes mosquitoes (Aedes aegypti & Aedes albopictus), which bite during the day.
- It is caused by the Dengue virus (DENV), belonging to the Flavivirus family
- It has 4 serotypes (DENV-1, DENV-2, DENV-3, DENV-4).
- Getting infected with one serotype doesn't provide lifelong immunity against the others.
- Common in tropical and subtropical regions like India, Southeast Asia, Africa, and Latin America.

DIAGNOSIS & TESTS

- **NS1 Antigen (First week)** – Early detection.
- **IgM/IgG ELISA (After 5 days)** – Confirms recent or past infection.
- **RT-PCR –** Detects viral RNA in early stages.
- **CBC Findings:** Low platelets (<100,000/mm³), high hematocrit, leukopenia (suggests plasma leakage).
- **Tourniquet Test (+ve)** – Assesses capillary fragility (not very specific).

COMPLICATIONS

- **Dengue Shock Syndrome (DSS)** – Low BP, multiple organ failure.
- Severe bleeding (DIC, GI bleeding)
- encephalitis, myocarditis, hepatitis

TREATMENT

- Fluids (oral or IV depending on severity).
- Paracetamol for fever (Avoid NSAIDs like aspirin/ibuprofen → Risk of bleeding).
- Platelet transfusion only in severe bleeding cases.
- Regular monitoring of hematocrit & platelets.

PREVENTION

- **Control mosquitoes** – Remove stagnant water, use insecticides, and wear protective clothing.
- **Vaccine (Dengvaxia** - CYD-TDV) – Only recommended for those with a history of dengue infection

SYMPTOMS & CLINICAL FORMS

- **Classic Dengue Fever (Breakbone Fever)**
  - High fever, severe headache (especially behind the eyes), muscle and joint pain, rash, and nausea.
  - **Biphasic fever ("Saddleback fever")** – fever subsides and then returns.
  - Skin rash appears in the second week (maculopapular, blanching).
- **Dengue Hemorrhagic Fever (DHF)**
  - **Severe plasma leakage →** Hemoconcentration (↑HCT), fluid accumulation (pleural effusion, ascites).
  - **Bleeding signs:** Petechiae, nosebleeds, gum bleeding, or internal bleeding (GI bleed).
- **Dengue Shock Syndrome (DSS)**
  - **Severe fluid loss →** Hypotension, organ failure, and shock.

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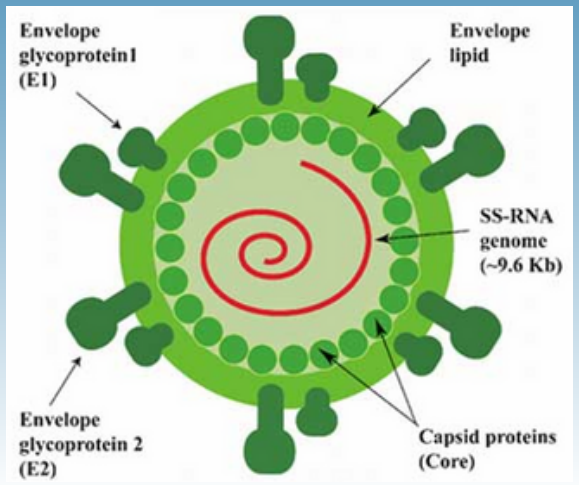
HEPATITIS C

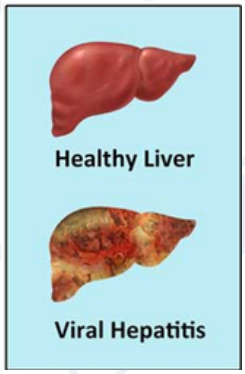


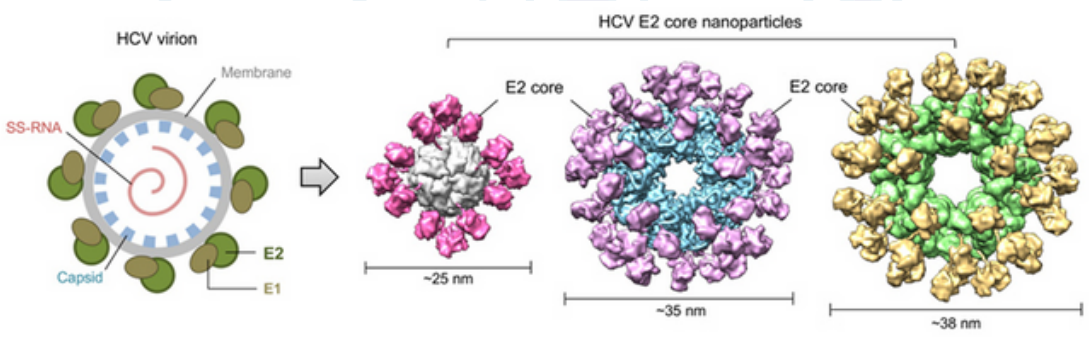
INTRODUCTION

- **Hepatitis C Virus (HCV)** is a **single-stranded RNA virus** from the **Flavivirus family**.
- **Major cause of chronic hepatitis, cirrhosis, and hepatocellular carcinoma (HCC).**

TRANSMISSION

- **Bloodborne**: IV drug use (most common), transfusions (before 1992), needle-stick injuries.
- **Vertical**: Mother-to-child (rare).
- **Sexual:** Less common than HBV & HIV.





PATHOGENESIS

- Infects **hepatocytes**, evades immune system, causes **chronic inflammation → fibrosis → cirrhosis → HCC**.

DIAGNOSIS

- **HCV Antibody (Anti-HCV)** → Screening test.
- **HCV RNA (PCR)** → Confirms active infection.
- **Liver biopsy/ Fibroscan** → Assess fibrosis/cirrhosis.

TREATMENT

- **Direct-acting antivirals (DAAs): Sofosbuvir, Ledipasvir, Velpatasvir.**
- **Cure rate >95%.**

COMPLICATIONS

- **Cirrhosis** → Portal hypertension, variceal bleeding.
- **Hepatocellular carcinoma (HCC)** → Requires surveillance (Ultrasound + AFP every 6 months).

CLINICAL FEATURES

- **Acute (Rarely diagnosed)**: Mild symptoms (jaundice, fatigue, nausea, RUQ pain).
- **Chronic (85% cases)**: Asymptomatic for decades, then **cirrhosis, portal hypertension, liver failure, HCC**.
- **Extrahepatic manifestations**: Cryoglobulinemia, glomerulonephritis, lichen planus.

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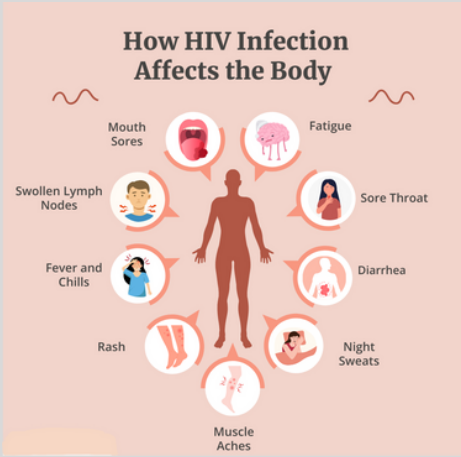
HIV/AIDS



INTRODUCTION

- **Human Immunodeficiency Virus (HIV)** is a **retrovirus (RNA virus)** that attacks **CD4+ T cells**, leading to **Acquired Immunodeficiency Syndrome (AIDS)**.
- **Transmission**: Sexual contact, blood transfusion, IV drug use, vertical (mother to child).

PATHOGENESIS

- HIV binds to **CD4 receptor + CCR5 (early) or CXCR4 (late)** coreceptors.
- Causes **CD4+ T cell depletion** → Immunosuppression.
- **Window Period**: Initial infection to detectable antibodies (3-6 weeks).

CLINICAL STAGES (WHO CLASSIFICATION)

- Acute HIV (Seroconversion): Flu-like illness, lymphadenopathy, rash.
- Chronic HIV (Latency): Asymptomatic or persistent generalized lymphadenopathy (PGL).
- AIDS (CD4 <200 or AIDS-defining illness): Opportunistic infections (PCP, TB, CMV), malignancies (Kaposi sarcoma, NHL).

DIAGNOSIS

- **Screening Tests**: **4th Gen ELISA (HIV Ag/Ab test)** – Detects **p24 antigen + antibodies** (best initial test).
- **Confirmatory Test: Western Blot (not preferred), HIV RNA PCR (definitive test in neonates)**.
- **CD4 Count & Viral Load**:
  - **CD4 <200** – AIDS diagnosis.
  - **HIV RNA PCR** – Monitors treatment response.

VIROLOGY

- **Family**: Retroviridae, **Genus**: Lentivirus.
- **Genome**: ssRNA, enveloped virus.
- **Key Enzymes**:
  - **Reverse Transcriptase** – Converts RNA to DNA.
  - **Integrase** – Inserts viral DNA into host genome.
  - **Protease** – Cleaves viral proteins for maturation.
- **Types**:
  - **HIV-1**: More virulent, worldwide.
  - **HIV-2**: Less virulent, endemic to West Africa.

OPPORTUNISTIC INFECTIONS & PROPHYLAXIS

CD4 Count	Opportunistic Infection	Prophylaxis
<200	Pneumocystis jirovecii pneumonia (PCP)	TMP-SMX
<100	Toxoplasmosis, Cryptococcus	TMP-SMX, Fluconazole
<50	CMV Retinitis, MAC	Valganciclovir, Azithromycin

TREATMENT

- **Treatment (ART – Antiretroviral Therapy)**
- **First-Line HAART (Highly Active Antiretroviral Therapy)**
- **2 NRTIs + 1 INSTI (Integrase Inhibitor)**
  - **Tenofovir + Lamivudine/Emtricitabine + Dolutegravir**
  - Alternative: Efavirenz (NNRTI-based).
  - Start ART **immediately**, regardless of CD4 count.

PREVENTION

- **Post-Exposure Prophylaxis (PEP)**:
  - **Within 72 hrs – Tenofovir + Lamivudine + Dolutegravir for 28 days**.
- **Pre-Exposure Prophylaxis (PrEP)**:
  - **High-risk groups: Tenofovir + Emtricitabine daily**.
- **Mother-to-Child Prevention**:
  - ART in pregnancy, **Nevirapine/Zidovudine prophylaxis in newborns**.