RAMA UNIVERSITY

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FACULTY OF NURSING

Chapter-07

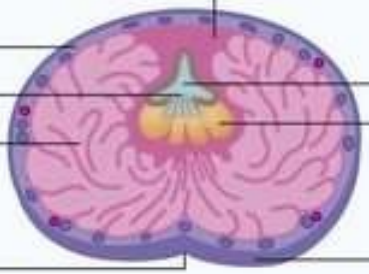
PROSTATITIS

RAMA UNIVERSITY

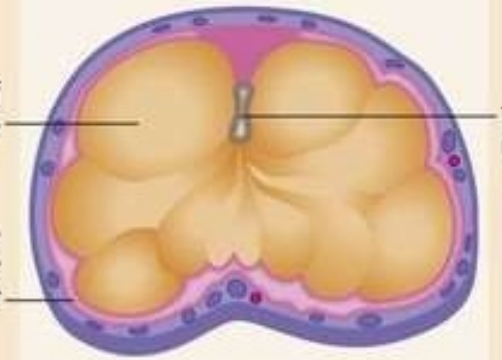
Mr.SHAHANWAZ KHAN
LECTURER (MSN)

- Introduction
- Definition
- Etiology
- Epidemiology
- Type / classification of Prostatitis
- Pathophysiology
- ABP
- CBP
- Clinical presentation
- Diagnosis
- Treatment

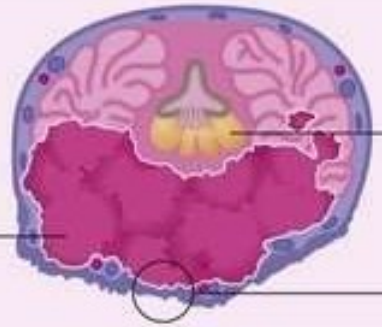
Normal prostate



Benign prostatic hyperplasia



Carcinoma of prostate



INTRODUCTION

- Prostatitis is an infection or inflammation of the prostate gland that presents as several syndromes with varying C/F…
- The term prostatitis is defined as microscopic inflammation of the tissue of the prostate gland and is a diagnosis that spans a broad range of clinical conditions.
- The National Institutes of Health (NIH) has recognized and defined a classification system for prostatitis in 1999.

DEFINITION

- Inflammation of the prostate i.e. prostatitis may be ……
- Acute
- chronic
- granulomatous types.

ETIOLOGY

- **<u>ACUTE PROSTATITIS :</u>** caused by……
- E Coli
- Klebsiella
- Proteus
- Pseudomonas
- Enterobacter
- Gonococci
- Staphylococci

Chronic Prostatitis causes ……

- A primary voiding dysfunction problem, either structural or functional .
- *E coli* is responsible for 75-80% of chronic bacterial prostatitis cases.
- Enterococci
- *Pseudomonas*
- *C trachomatis,*
- *Ureaplasma* species,
- Uncommon organisms, such as *M tuberculosis and Histoplasma,* and *Candida* species , must also be considered.

- Tuberculous prostatitis may be found in patients with……
- Renal tuberculosis
- Human immunodeficiency virus
- Cytomegalovirus
- Inflammatory conditions (eg, sarcoidosis)

Epidemiology

- <u>Age-related demographics:</u>
- Among older patients, nonbacterial prostatitis types II and IV) are the most common.
- According to case reports of Wegener granulomatosis in the fourth and fifth decades of life, prostatitis can be a presenting feature of Wegener granulomatosis and a clinical manifestation of relapse.
- Fungal infection with *C albicans* and mycobacterial infection with *M tuberculosis* have also been reported.

- **United States statistics**
- Prostatitis is one of the most common diseases seen in urology practices in the United States, accounting for nearly 2 million outpatient visits per year.
- The diagnosis is made in approximately 25% of male patients presenting with genitourinary symptoms.
- Autopsy studies have revealed a histologic prevalence of prostatitis of 64-86%.

Types of Prostatitis

- The 4 syndromes of prostatitis are as follows:
- I - Acute bacterial prostatitis
- II - Chronic bacterial prostatitis
- III - Chronic prostatitis and chronic pelvic pain syndrome (CPPS; further classified as inflammatory or non inflammatory)
- - Granulomatous prostatitis
- IV - Asymptomatic inflammatory prostatitis

- Acute prostatitis and chronic bacterial prostatitis are defined by documented bacterial infections of the prostate and are treated with antibiotic therapy and supportive care

Pathophysiology

- In bacterial prostatitis…….
- sexual transmission of bacteria is common,
- but hematogenous
- lymphatic
- contiguous spread of infection from surrounding organs must also be considered.
- Although various routes have been postulated, none has been firmly substantiated.
- A history of sexually transmitted diseases is associated with an increased risk for prostatitis symptoms.

- Viral and granulomatous prostatitis may be associated with HIV infection and is another cause of culture-negative disease.
- A common viral pathogen of prostatitis in HIV-infected patients is cytomegalovirus (CMV).
- Mycobacteria, such as *Mycobacterium tuberculosis,* and fungi, such as *Candida albicans,* have also been associated with culture-negative disease in this population

ACUTE PROSTATITIS

- Acute bacterial prostatitis may be caused by ascending infection through the urethra……refluxing urine into

prostate ducts

or direct extension or lymphatic spread from the rectum.

- Acute prostatitis may occur spontaneously or may be a complication of urethral manipulation such as…….
- Catheterisation
- Cystoscopy
- Urethral dilatation
- Surgical procedure on prostate

- The common pathogens are those which cause UTI, most frequently …..
- E Coli
- Klebsiella
- Proteus
- Pseudomonas
- Enterobacter
- Gonococci
- Staphylococci
- The diagnosis is made by culture o urine specimen.

MORPHOLOGICAL FEATURES

- **Grossly :**
- The prostate is enlarged
- Swollen and tense.
- C/s- multiple abscess and foci of necrosis.

- **Microscopic:**
- The prostatic acini are dilated and filled with neutrophilic exudate.
- There my be diffuse acute inflammatory infiltrate.
- Oedema, hyperaemia and foci of necrosis frequently accompany acute inflammatory involvement.

Chronic Prostatitis

- Chronic prostatitis is more common and foci of chronic inflammation are frequently present in the prostate of men > 40 yrs of age.
- Chronic prostatitis is usually asymptomatic but may cause……
- Allergic reactions
- Iritis
- Arthritis

Types of Chronic prostatitis

- 2 Types

- 1. Chronic bacterial prostatitis
- 2.Chronic abacterial prostatitis

Chronic Bacterial prostatitis

- CBP… is caused in much the same way and by the same org. as the Acute prostatitis.
- It is generally a consequence of recurrent UTI.
- Diagnosis is made by detection of WBC > 10-12/hpf in expressed prostatic secretions.
- This condition is more difficult to treat since antibiotics penetrate the prostate poorly.

Chronic Abacterial Prostatitis

- C . Abac. Prostatitis is more common.
- There is no H/o of recurrent UTI & U.Culture & prostatic secretions is always –Ve, though leukocytes demonstrable in prostatic secretions.

- The pathogens implicated ……. Chlamydia trachomatis & ureplasma urealyticum.

Morphological features

- Pathologic changes in both bacterial and abacterial prostatitis are similar.
- **Grossly :**
- Prostate may be enlarged
- Fibrosed
- Shrunken

Microscopic Features:

- The diagnosis of chronic prostatitis is made by foci of……
- lymphocytes
- plasma cells
- macrophages and
- neutrophils within in the prostatic substance
- Prostatic calculi & foci of Squamous metaplasia in prostatic acini may accompany inflammatory changes.
- Seminal vesicles are invariably involved.

Granulomatous Prostatitis

- Granulomatous Prostatitis is a variety of chronic prostatitis, probably caused by leakage of prostatic secretions in to the tissue, or could be of autoimmune origin.

Morphological features

- **Gross findings :**
- The glands is firm to hard, giving the clinical impression of prostatic carcinoma on rectal ex.

- **Microscopic :**
- The inflammatory reaction consist of macrophages, lymphocytes, plasma cells and some multinucleate giant cells.
- The condition may be confused with Tuberculous prostatitis .

Clinical Presentation

- **History**
- Patients with acute bacterial prostatitis may present with the following:
- Fever
- Chills
- Malaise
- Arthralgias
- Myalgias
- Perineal/prostatic pain
- Dysuria

- Obstructive urinary tract symptoms, including ……..
- Frequency
- urgency
- dysuria,
- hesitancy, weak stream, and incomplete voiding
- Low back pain
- Low abdominal pain
- Spontaneous urethral discharge

chronic bacterial prostatitis…..
Clinical Presentation

- Patients with chronic bacterial prostatitis typically have no systemic symptoms. Instead, these patients may present with the following:
- Intermittent dysuria
- Intermittent obstructive urinary tract symptoms
- Recurrent urinary tract infections

Patients with chronic prostatitis and chronic pelvic pain syndrome may present with the following:

- Pelvic pain or discomfort including……
- Perineal, suprapubic, coccygeal, rectal, urethral, and testicular/scrotal pain for more than 3 of the previous 6 months without documented urinary tract infections from uropathogens.
- Obstructive urinary tract symptoms, including frequency, dysuria, and incomplete voiding
- Ejaculatory pain
- Erectile dysfunction

Complications

- Potential complications of prostatitis include the following:
- Bladder outlet obstruction/urinary retention
- Abscess - Typically in immunocompromised patients
- Infertility due to scarring of the urethra or ejaculatory ducts
- Recurrent cystitis
- Pyelonephritis
- Renal damage
- Sepsis

Diagnosis

- The differential diagnosis of prostatitis is based on the……
- History
- Physical examination findings, and,
- Frequently, analysis of expressed prostatic secretions.
- Absence of systemic symptoms and persistence of pain for at least 3 months indicate chronic prostatitis rather than acute disease.

- In addition to prostatitis, other conditions to consider include the following:
- Benign prostatic hyperplasia
- Chronic pain syndromes (ie, inflammatory bowel disease)
- Cystitis
- Erectile dysfunction
- Prostate cancer
- Testicular cancer
- Urolithiasis

- Urine Analysis
- Microscopic Examination of urine
- Urine Culture
- Complete Blood counts
- Biochemistry – BUN,
- PSA
- US
- CT, MRI
- Voiding cystourethrography (VCUG)
- Cystoscopy
- Urine Cytology studies

- Urinalysis and urine culture can confirm the presence of infection and identify pathogens.
- Fractional urine studies (urethral and bladder urine) and cytology of expressed prostatic secretions can help differentiate prostatitis from urethritis and cystitis.

Treatment

- supportive care
- Antibiotic therapy should initially include parental bactericidal agents such as……
- broad-spectrum penicillin derivatives,
- third-generation cephalosporins with or without aminoglycosides, or fluoroquinolones.

Case Study……

- **<u>Clinical History:</u>** A 74-year-old white man presented to his primary care physician with a one-year history of…….
- hesitancy,
- intermittency,
- nocturia and increasing difficulty in urination.
- Rectal examination revealed an enlarged, nodular firm prostate. A week after his visit, he experienced a myocardial infarction and died.

- Which of the following is the **most likely** diagnosis?
- 1. Adenocarcinoma of the prostate
- 2. Benign prostatic hypertrophy
- 3. Chronic prostatitis
- 4. Prostatic intraepithelial neoplasia (PIN)
- 5. Small cell neuroendocrine carcinoma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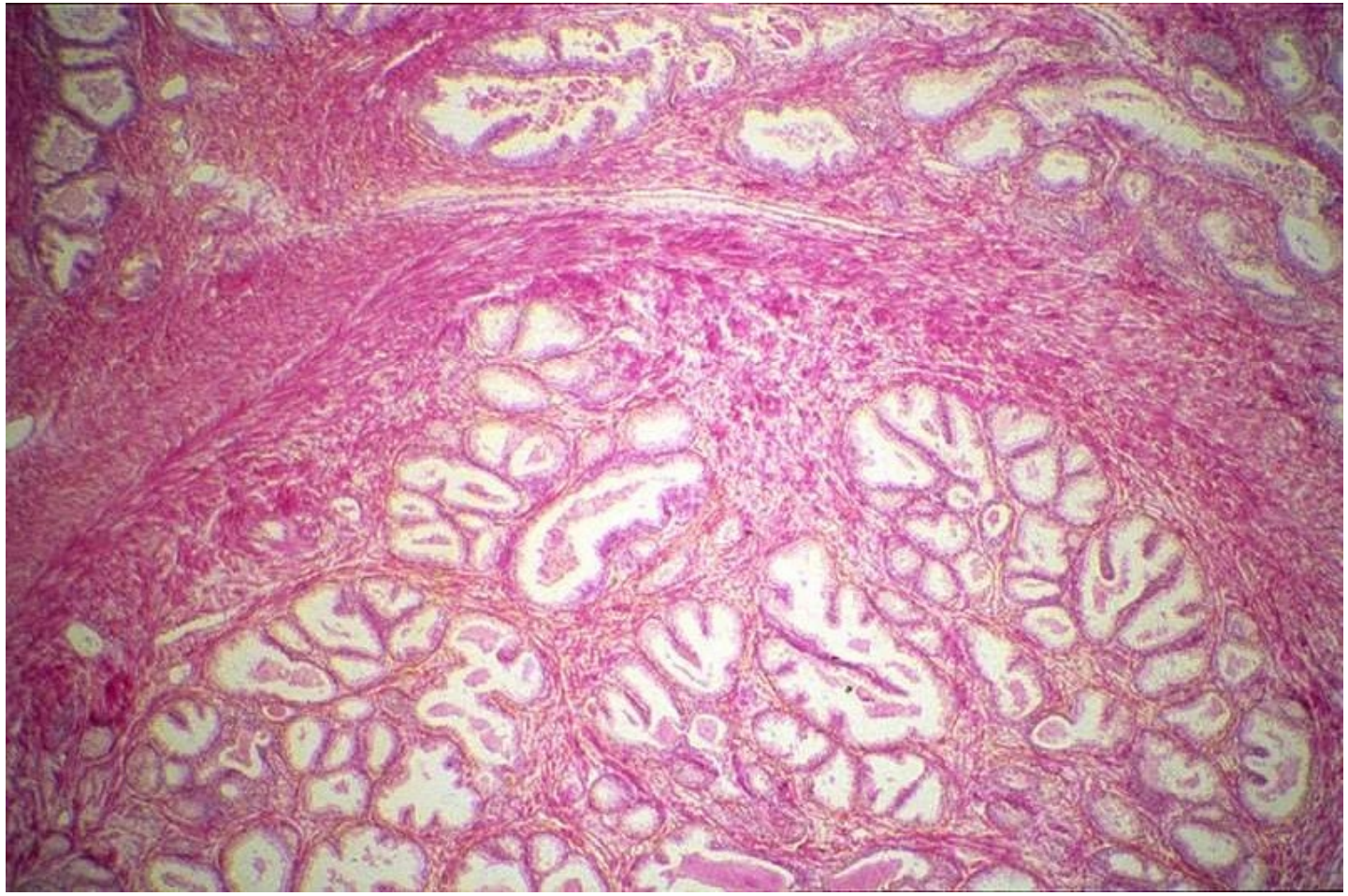

Diagnosis……..???

Benign prostatic hypertrophy

THANK YOU