RENAL INFECTIONS
1) ACUTE PYELONEPHRITIS
   - CHILDHOOD
   - PREGNANCY
   - URINARY OBSTRUCTION

• CHRONIC PYELONEPHRITIS
   - REFLUX NEPHROPATHY
• PYELONEPHRITIS
• RENAL ABCESS
• PERINEPHRIC ABCESS

2) AETIOLOGY
a) HAEMATOGENOUS – PRIMARY SITE TONSILITIS, CARIOUS TOOTA – BOIL, CARBUNCLE
- TUBERCULOSIS

b) ASCENDING INFECTION – VESICO URETERIC REFLUX
CALCULI, STASIS

BACTERIOLOGY
- E.COLI STREPTOCOCCUS FAECALIS – ACID URINE
- PROTEUS, STAPHYLOCOCCI- URINE ALKALINE – CALCULUI

ACUTE PYELONEPHRITIS
FEMALES: COMMON IN CHILDHOOD, PUBERTY
PREGNANCY, MENOPAUSE, RT.SIDE MORE

CLINICAL FEATURES
- PAIN IN HYPOCHONDRIUM, LOIN, TENDERNESS
- FEVER, RIGOR
- DYSURIA, CYSTITIS
- UREMIA
- URINE EXAMINATION
- MID STREAM URINE – BACTERIA, PUS CELLS
- CULTURE & SENSITIVITY
- BLOOD CULTURE – POSITIVE IN SEVERE CASES

4) DD: - ACUTE APPENDICITIS – SITE, PERITONITIS
   - PNEUMONIA
   - ACUTE CHOLECYSTITIS

INVESTIGATION : PLAIN X-RAY – SWOLLEN KIDNEY
   SOFT TISSUE SHADOW
   - USG

SPECIAL CASES
- PYELONEPHRITIS IN PREGNANCY
- 4th and 6th MONTH OF GESTATION
- HISTORY OF RECURRENT URINARY INFECTION
URINARY INFECTION IN CHILDHOOD
- FAIL TO THRIVE
- FEW SYMPTOMS
- CLOUDY FOWL URINE, FREQUENCY
- FEVER
- LOIN PAIN
- URINE EXAMINATION
- 50 % HAVE ANATOMICAL ABNORMALITY
- VESICO URETERIC REFLUX – 35 % WITH RECURRENT UTI
- REFLUX NEPHROPATHY – RENAL FAILURE
- MICTURATING CYSTOGRAPHY

TREATMENT:
- APPROPRIATE ANTIBIOTIC
- LONG TERM PROPHYLACTIC ANTIBIOTICS
- REIMPLANTATION OF URETER
- UNCOMMON
• FOLLOWING INSTRUMENTATION, CATHETERISATION
• TRANSURETHRAL PROCEDURES

6) TREATMENT
• PROMPT, APPROPRIATE, PROLONGED
• EXCLUDE UNDERLYING ABNORMALITY
• BROAD SPECTRUM ANTIBIOTICS
• ALKALINISATION OF URINE – POTASSIUM CITRATE
• PLENTY OF ORAL / I,V FLUDIS
• ANALGESICS

CHRONIC PYELONEPHRITIS

• VESICO URETERIC REFLUX NEPHROPATHY
• RENAL FAILURE

PATHOLOGY: INTERSTITIAL INFLAMMATION, SCARRING
RENAL TISSUES DESTROYED
GLOMUERULI SPARED

CLINICAL FEATURES
➢ 3 TIMES MORE COMMON IN FEMALES
➢ LESS THAN 40 YRS AGE
➢ MAY BE CLINICALLY SILENT
➢ LUMBAR PAIN, DYSURIA, FREQUENCY
➢ HYPERTENSION – MALIGNANT TYPE
➢ CONSTITUTIONAL SYMPTOMS 30% CASES
➢ FEVER LOW GRADE
➢ ANEMIA
INVESTIGATION
• PROTEINURIA LESS
• WBC NUMEROUS
• ORGANISMS : E-COLI, S.FECALIS, PEUDOMONAS

TREATMENT
• ANTIBIOTICS, REPEATED COURSE
• ANY OBSTRUCTION, CALCULI TREATED

SURGERY
NEHRECTOMY
RENAL TRANSPLANTATION
PYONEPHROSIS
- MULTILOCULAR SAC CONTAINING PUS, PURULENT URINE
- INFECTION OF HYDRONEPHROSIS
- FOLLOWING ACUTE PYELONEPHRITIS
- RENAL CALCULUS DISEASE

CLINICAL FEATURES
- ANEMIA, FEVER, SWELLING
- SYMPTOMS OF CYSTITIS

INVESTIGATIONS
- PLAIN X-RAY KUB – CALCULUS,
- USG: DILATED CALYCES, RENAL PELVIS
- IVU: POOR RENAL FUNCTION, HYDRONEPHRITIS
TREATMENT
SURGICAL EMERGENCY – SEPTICEMIA
PRENTERAL ANTIBIOTICS
NEHROSTOMY AND DRAINAGES, STONES REMOVED
NEPHRECTOMY

RENAL CARBUNCLE
- ABCESS RENAL PARANCHYMA – BLOOD BORN SPREAD
- COLIFORMS, STAPHYLOCOCCUS AUREUS
- HAEMATOMA
- DIABETES, HIV, IV DRUG ABUSERS
- RENAL PARANCHYMA NECROSIS
- FEVER, LEUCOCYTOSIS
- ILL DEFINED TENDER SWELLING IN LOIN
USG: SPACE OCCUPYING LESION – CONFUSED WITH RCC
OFTEN OPEN SURGICAL DRAINAGE REQUIRED

PERI NEPHRIC ABCESS
CAUSES:
• HAEMATOGENOUS SPREAD/PERI URETHRAL LYMPHATICS
• EXTENSION OF APPENDICULAR ABCESS
• EXTENSION FROM RENAL CORTICAL ABCESS
• INFECTION PERIRENAL HEMATOMA
• FROM PSOAS ABCESS – TB

CLINICAL FEATURES
• HIGH FEVER
• LOIN FULLNESS TENDERNESS
• WBC COUNT
TREATMENT
- PER CUTANEOUS NEPHROSTOMY
- SURGICAL OPER DRAINAGE – LUMBAR INCISION
- CULTURE PUS

RENAL TUBERCULOSIS
AETIOLOGY PATHOLOGY

- HAEMATOGENOUS SPREAD DISTANT FOCUS
- UNILATERAL
- TUBERCULOUS GRANULOMA – ULCER
- MYCOBACTERIA, PUS CELLS IN URINE
- TUBERCULOSIS ABCESS FORMED IF UNTREATED
- IF THE NECK OF RENAL PERLVIS STENOSED
- T. PYONEHROSIS FORMED – LOCALISED TO ONE POLE OF KIDNEY
• PUTTY KIDNEY – CASEATION
• CEMENT KIDNEY – CALCIFICATION
  PSEUDO CALCULI
• MILITARY TB – BILATERAL INVOLVEMENT
• TUBERCULOMA OF BLADDER
• TUBERCULOUS EPIDEMIC ORCHITIS

CLINICAL FEATURES

- 20-40 YEARS OF AGE
- M/F – 2:1
- R. KIDNEY MORE OFTEN INVOLVED
- URINARY FREQUENCY EARLIEST
- STERILE PYURIA
- PAINFUL MICTURATION – T.CYSTITIS -
- PAIN REFERRED TO TIP OF PENIS, VULVA
- HAEMATURIA
- CONSTITUTIONAL SYMPTOMS
- WEIGHT LOSS, EVENING – PYREXIA
- SEMINAL VESICAL NODULES
- CORD THICKENING
INVESTIGATIONS

- EARLY MORNING URINE – MICROSCOPY/CULTURE
- ZIEHL-NIELSEN STAIN FOR MYCOBACTERIA
- LOWENSTEIN JENSEN CULTURE MEDIUM – 6 WEEKS
- PLAIN X-RAY - KUB
- : CALCIFIED LESIONS: CHEST FOR PUL T.B
- IVU – RENAL PAPILLA INDISTINCT – ULCER
calyceal narrowing / R PELVIS STENOSIS
hydro nephrosis – REP
- T. ABCESS – SIMULATES SOL SPLAYING CALYCES
- BLADDER WALL THICKENED
- SHRUNKEN

CYSTOSCOPY

- LATER STAGE OF THE DISEASES
- CLUSTER OF GRANULOMAS STUDDER AROUND
- URETERIC CRIFICES
- TUBERCULOUS ULCER
- BLADDER WALL FIBROSIS – CAPACITY ↓
- GOLF-HOLE URETERIC ORFICE
TREATMENT:
- ANTI TUBERCULOUS REGIME
- PERIODIC REVIEW FOR COMPLICATIONS

SURGERY
- AFTER 6-12 WEEKS OF ATT
- PYELOPLASTY
- BOARI FLAP – URETERAL SHORTENING
- BOWEL MOVEMENT
- SUBSTITUTION CYSTOPLASTY
- NEPHRO URETERECTOMY
THANK YOU