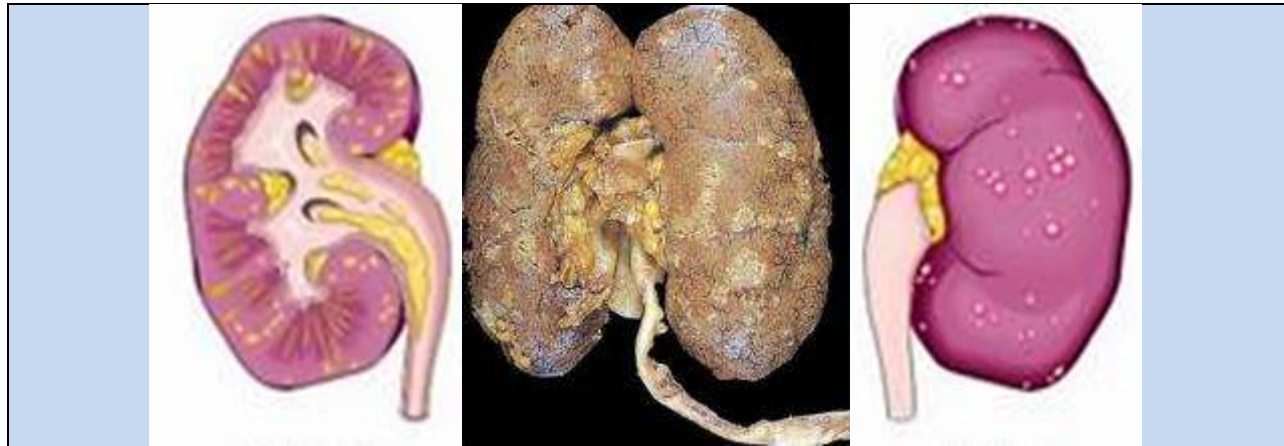


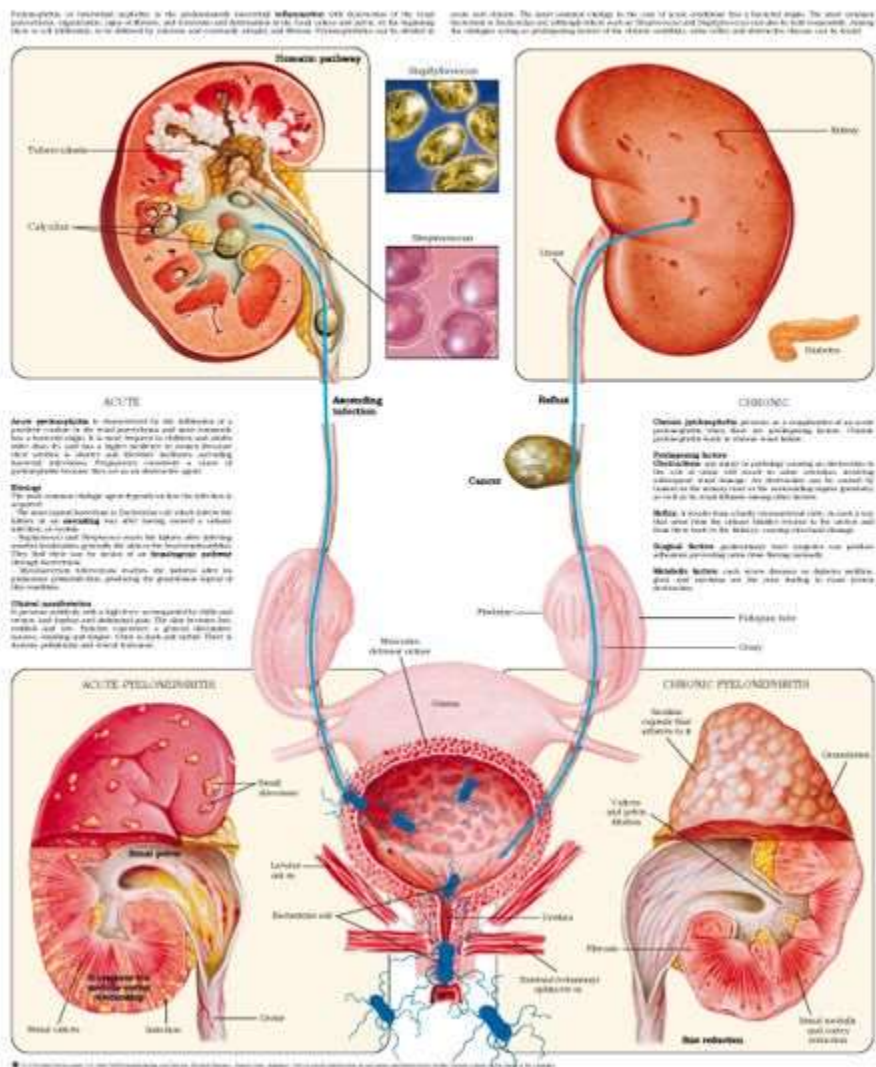
XIX. Diseases of the Urinary System



Acute Suppurative Pyelonephritis IV-1.3141

Kidney:	Size:	<ul style="list-style-type: none"> • Normal (or slightly swollen)
	External surface:	<ul style="list-style-type: none"> • Small abscesses in groups
	Capsule:	<ul style="list-style-type: none"> • Strips off easily • Tense in many parts
	Subcapsular surface:	<ul style="list-style-type: none"> • Stippled with abscesses (suppurative)
	The abscesses:	<ul style="list-style-type: none"> • Small and rounded • Yellowish-whitish • Slightly raised • Haloed with congestion (red zone)
	Cut surface:	<ul style="list-style-type: none"> • Abscesses at cortex • Linear streaks at pyramids of medulla: • Opaque yellow (pus) • Surrounded by deep red zone of congestion
	Renal pelvis:	<ul style="list-style-type: none"> • Shows areas of inflammation extending to cortex & medulla • Is swollen, oedematous and dilated • Shows scattered haemorrhages • Congested (red in colour) • Distended • Contains opaque yellow inflammatory exudate • A granular lining with possible ulceration
	Cavity-like areas show:	<ul style="list-style-type: none"> • Turbid dull yellow exudate. • Reddish contents (blood)
	Perinephric tissue:	<p style="text-align: center;">Shows:</p> <ul style="list-style-type: none"> • Suppuration • Haemorrhage

PYELONEPHRITIS



N.B.1:

- *Interstitial inflammation of both the parenchyma of the kidney and the renal pelvis may be caused by various causes which include the following:*

1. Hematogenous infection:

- *The renal tissue is primarily infected (by the blood stream) and the pelvis is secondarily infected (by descending spread).*
- *This is common.*

2. Ascending infection:

- *From a primarily-infected bladder (and pelvis) to the secondarily-infected renal tissue.*
- *This is not so common, and usually occurs in association with early obstruction leading to stagnation of urine.*
- *It occurs mostly in infants or in association with pregnancy or cancer of cervix and in cases of senile prostate.*
- *The pathway is through retrograde extension by the ureters or by peri-ureteral lymphatics (or vascular channels at ureters) from a lower urinary tract infection.*

N.B.2.

- *Suppurative inflammation of the kidney is a common finding at autopsy (10%).*
- *It occurs at any age or sex but more in pregnant or and diabetic females; urinary stasis, tract-obstruction or and instrumentation are common predisposing factors.*
- *The responsible micro-organisms are B. coli (very common), streptococcus haemolyticus, B. pyocyaneous (very troublesome), Friedlander's bacilli etc...*
- *Pyelonephritis may be seen in one of three main stages:*
- *The acute phase (stage I) → either chronicity (stage II) or healing (stage III).*

- ***The characteristic feature of stage-I (acute pyelonephritis) is***
 - *Suppurative necrosis which may be small, focal and*
 - *Throughout cortex (**limited to the interstitial tissue**) or/and*
 - *Large and confluent (**encroaching as well upon the medulla and implicating also the renal parenchyma**).*
- *Most cases of the so-called "pyelitis" are nothing but early focal pyelonephritis.*

N.B. 3

1. When acute:

	<i>The kidneys:</i>	<ul style="list-style-type: none">• Are swollen and congested.• Show yellow spots of suppuration;• Raised above the surface; and,• On section, they appear as numerous patchy areas (spherical in cortex, linear in pyramids).
	<i>Renal pelvis:</i>	<ul style="list-style-type: none">• Appears bright red.• Is filled with pus.

2. When progressive:

	<ul style="list-style-type: none">a) <i>Abscess cavities.</i>b) <i>Gradual destruction of renal tissue; and, distortion.</i>
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3. When with obstruction:

	<ul style="list-style-type: none">(a) <i>Destruction of medulla (and cortex).</i>(b) <i>Hydronephrotic picture.</i> <p><i>This, with the suppuration → pyonephrosis.</i></p> <p><i>Extension into peri-renal tissue (through the capsule) → peri-nephric abscess.</i></p>
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N.B. 4.

- *Clinically, some or all of the following manifestations may or may not be present in active pyelonephritis: Chills, fever, backache especially at flank region, frequency of micturition, dysuria, pyuria, bacteriuria, azotemia etc...*