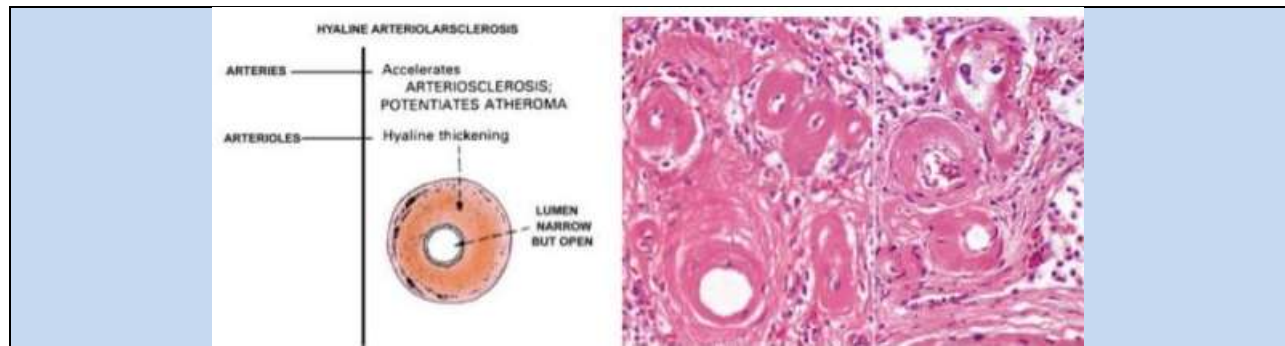


## XIX. Diseases of the Urinary System



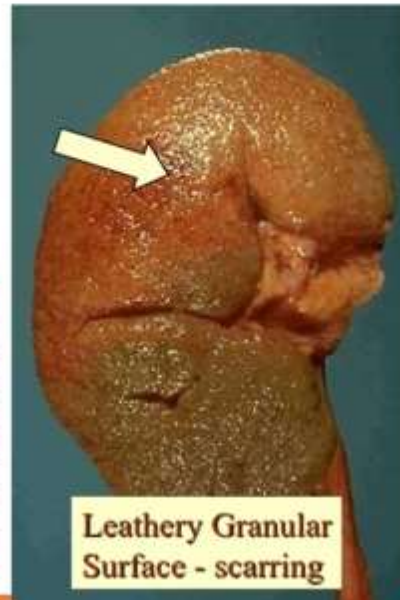
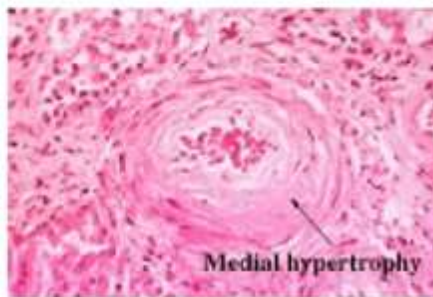
### Benign Nephrosclerosis (arteriolosclerotic kidney) IV-1.291

<b>Kidney:</b>	<b>Size:</b>	<ul style="list-style-type: none"> <li>• Is reduced</li> </ul>
	<b>Shape:</b>	<ul style="list-style-type: none"> <li>• Atrophy and contraction</li> </ul>
	<b>Capsule:</b>	<ul style="list-style-type: none"> <li>• Thickened</li> <li>• Adherent (moderately).</li> <li>• Strips off with difficulty (decortication)</li> </ul>
	<b>Subcapsular surface:</b>	<ul style="list-style-type: none"> <li>• Finely-granular</li> <li>• Yellowish-red</li> <li>• With intervening red grooves</li> <li>• Shows a few retention cysts which are small and contain brownish watery fluid</li> </ul>
	<b>Consistence:</b>	<ul style="list-style-type: none"> <li>• Firm (mostly).</li> </ul>
	<b>Cut surface:</b>	<ul style="list-style-type: none"> <li>• Shrunken</li> <li>• Shows the retention cysts</li> </ul>
	<b>Cortex:</b>	<ul style="list-style-type: none"> <li>• Markedly reduced in thickness</li> <li>• Shrunken and atrophied</li> </ul>
		<ul style="list-style-type: none"> <li>• <b>Mottled:</b> <ul style="list-style-type: none"> <li>• Red (vascular stroma)</li> <li>• Yellow (persisting renal tissue)</li> </ul> </li> </ul>
	<b>Medulla:</b>	<ul style="list-style-type: none"> <li>• Reduced slightly in thickness</li> <li>• Is shrunken (but less than cortex)</li> <li>• Is still differentiated from the cortex (to some extent)</li> <li>• Mottled red and yellow *</li> </ul>
	<b>Blood vessels:</b>	<ul style="list-style-type: none"> <li>• Patent throughout (as rings) <ul style="list-style-type: none"> <li>• Stand out (specially the arcuate arteries)</li> </ul> </li> <li>• Distinct (especially at corticomedullary junction)</li> </ul>
	<b>Walls:</b>	<ul style="list-style-type: none"> <li>• Thick and some appear as “pipe-stem”</li> <li>• Opaque pearly greyish-white</li> </ul>
	<b>Lumen:</b>	<ul style="list-style-type: none"> <li>• Narrowed (intimal thickening)</li> </ul>
	<b>Renal pelvis (and calyces):</b>	<ul style="list-style-type: none"> <li>• About normal (no apparent gross changes)</li> </ul>
	<b>Peri-pelvic fat:</b>	<ul style="list-style-type: none"> <li>• Is increased (compensatory)</li> </ul>



## Benign Nephrosclerosis:

- Hyaline arteriosclerosis.
- Intimal fibrosis
- Ischemia
- Glomerular sclerosis
- Scarring



### N.B.:

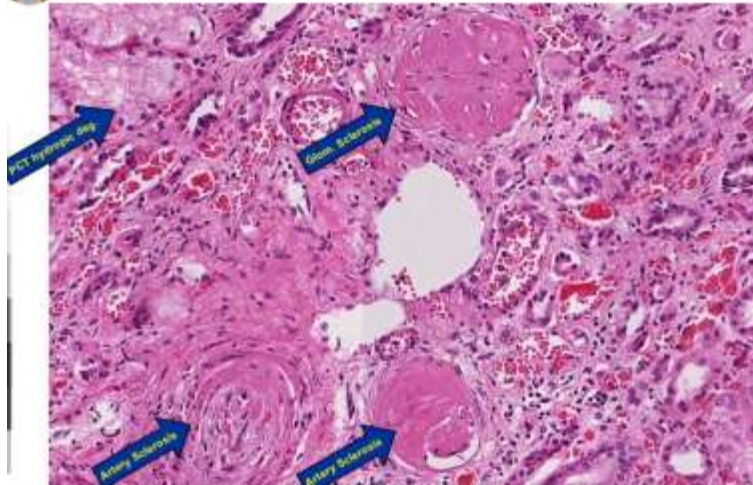
- This is the form of kidney-disease *associated with essential hypertension of the benign type*.
- The gross appearance of the kidney *depends on the duration and degree of hypertension*.
- Even if the kidney appears grossly normal, one can discover the changes by microscopic examination.

The picture described for the specimen is classical for benign nephrosclerosis but

*The following variations may be encountered in the kidney:*

1. Normal size and appearance but deep brownish-red (still marked microscopic lesions).
2. Congested and slightly decreased in size → **red contracted kidney**.
3. Small, shrunken, hard and finely-granular kidney with scattered cysts, irregular atrophy of cortex, distortion or loss of the cortical vascular markings & affection of all the small blood vessels particularly those of the boundary zone between the pyramids and the cortex (becoming greatly thickened and gape-opened) → **primary contracted kidney**.
4. Alternation of atrophic and compensatory hypertrophic areas → **coarse granularity on the surface**.

## Nephrosclerosis in HPTN:



- Early in the disease, there is no serious impairment of renal function.
- **Later on if the patient escapes death from →**
  1. Cerebral haemorrhage.
  2. Cardiac failure.
  3. Intercurrent infection. he eventually dies of → uraemia
  4. Uraemia (5% of cases).
- In this latter case, the kidney will show a very extensive damage to the renal parenchyma.

### **N.B.2:**

- *The kidney of benign nephrosclerosis shows less marked contraction and a finer, more regular granularity than the kidney of chronic diffuse glomerulonephritis.*

### **N.B. 3**

- *Hyaline arteriolar nephrosclerosis is believed to be preceded by the hypertension; normal kidneys can be shown at autopsy to be present in patients who were suffering from hypertension.*
- *The disease seems to be relatively commoner in males than females.*

