

Evaluación del sistema urinario

LESIÓN (“Enfermedad urinaria”)

- **Cambios adaptativos.-**
hiperplasia, atrofia, hipoplasia, metaplasia, displasia
- **Vasculares**
Hemorragia, hiperemia, congestión, edema
- **Inflamatorios**
Proliferativa, supurativa, granulomatosa
- **Degenerativos**
Hidrópica, albuminoide, hemosiderosis,
- **Obstructivos**
Ureteres, uretra
- **Neoplasias**
Primarias, secundarias

PRUEBAS DE LABORATORIO PARA EVALUAR LESIONES

(Enfermedad renal)

- Citología: PAF Renal, Sedimento urinario
- Histopatología: Renal
- Examen del sedimento urinario (EGO)
- Radiología simple
- Cistografía, neumocistografía.
- Ultrasonido
- Tomografía, resonancia magnetica

Diagnósticos

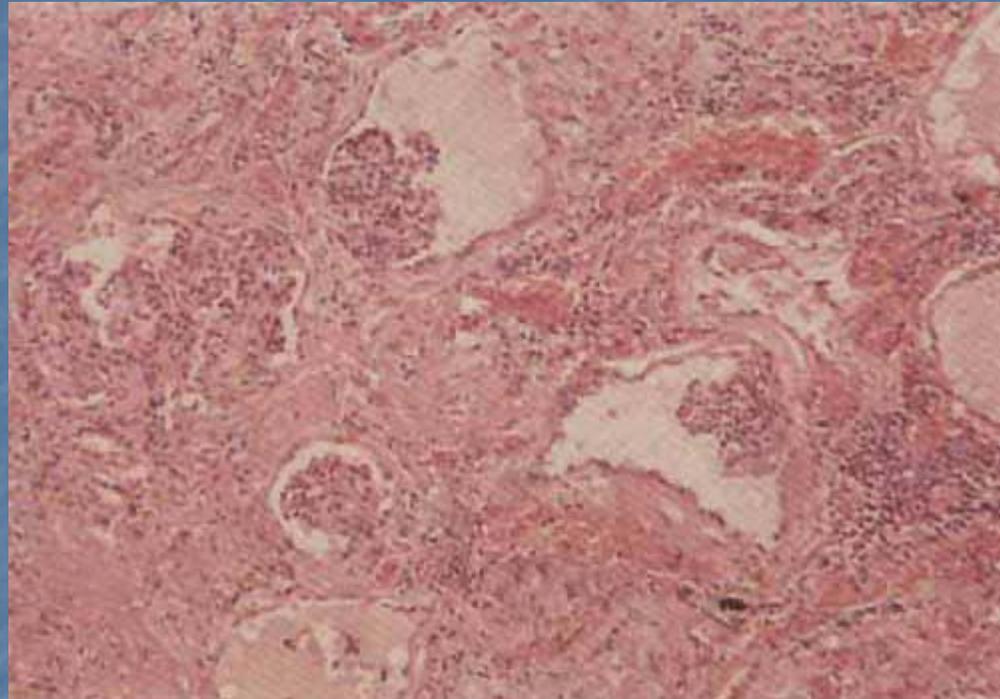
Nefritis embólica purulenta

Superficie renal. Múltiples, pequeños y prominentes focos amarillo-grisáceos en la corteza renal, debidos a formación de microabscesos, principalmente como consecuencia de glomérulos hematógicamente infectados por bacterias piógenas.

*Frecuentemente se produce extensión hasta la médula y la pelvis. Etiología: *Corynebacterium pyogenes*.*



Diagnósticos



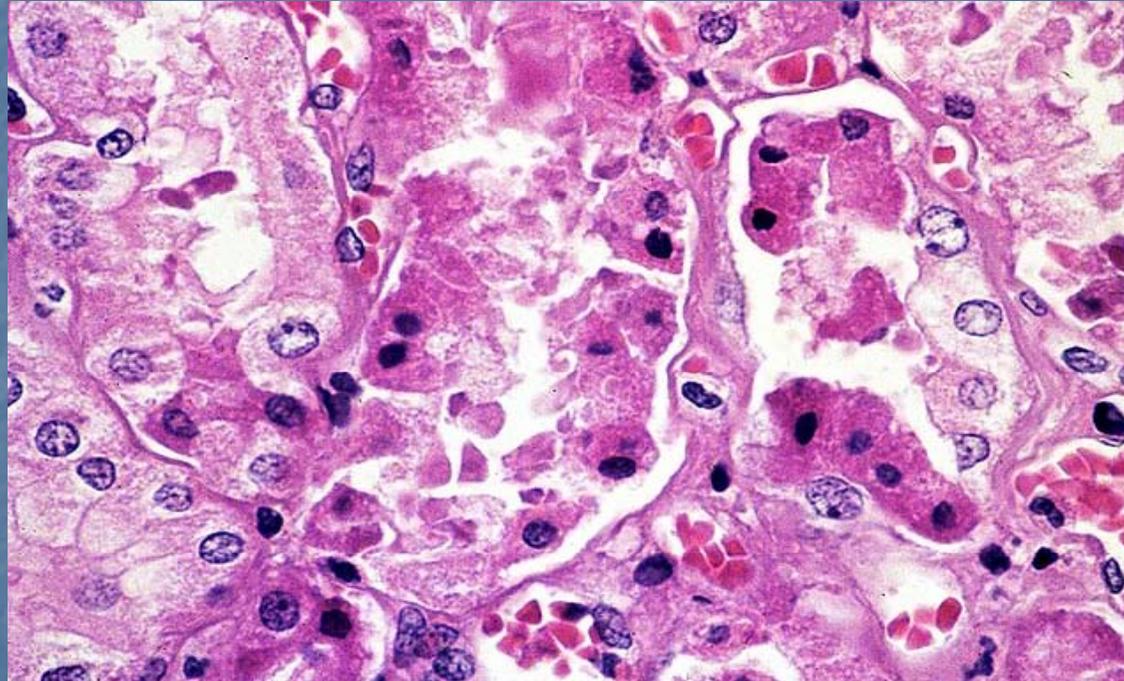
Nefritis intersticial crónica

Corteza renal. Sustitución casi completa de las nefronas por tejido fibroso, que contiene acumulaciones aleatorias de células inflamatorias mononucleares. Son evidentes restos de túbulos, glomerulos situados apretadamente, espacios urinarios dilatados rellenos con material proteínico y crestas glomerulares atróficas. Adherencias entre la cápsula de Bowman y una cresta de glomerulos compensatorios hipertrofiados (a la izquierda).

Perro

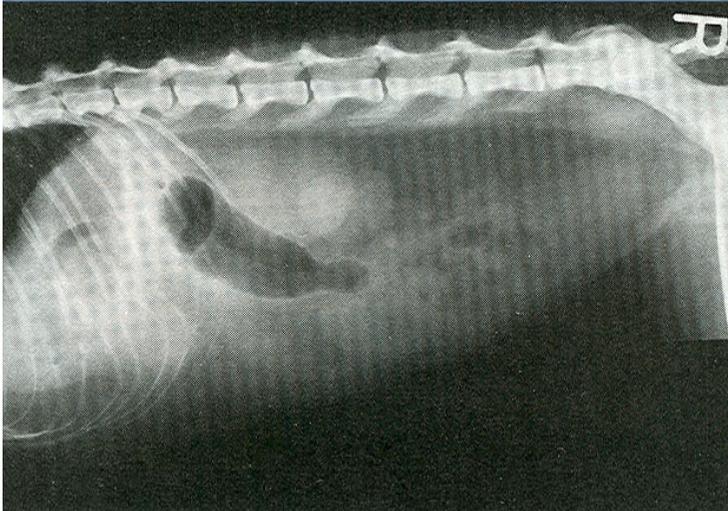
Diagnósticos

Enfermedad tubular aguda



RENOMEGALIA

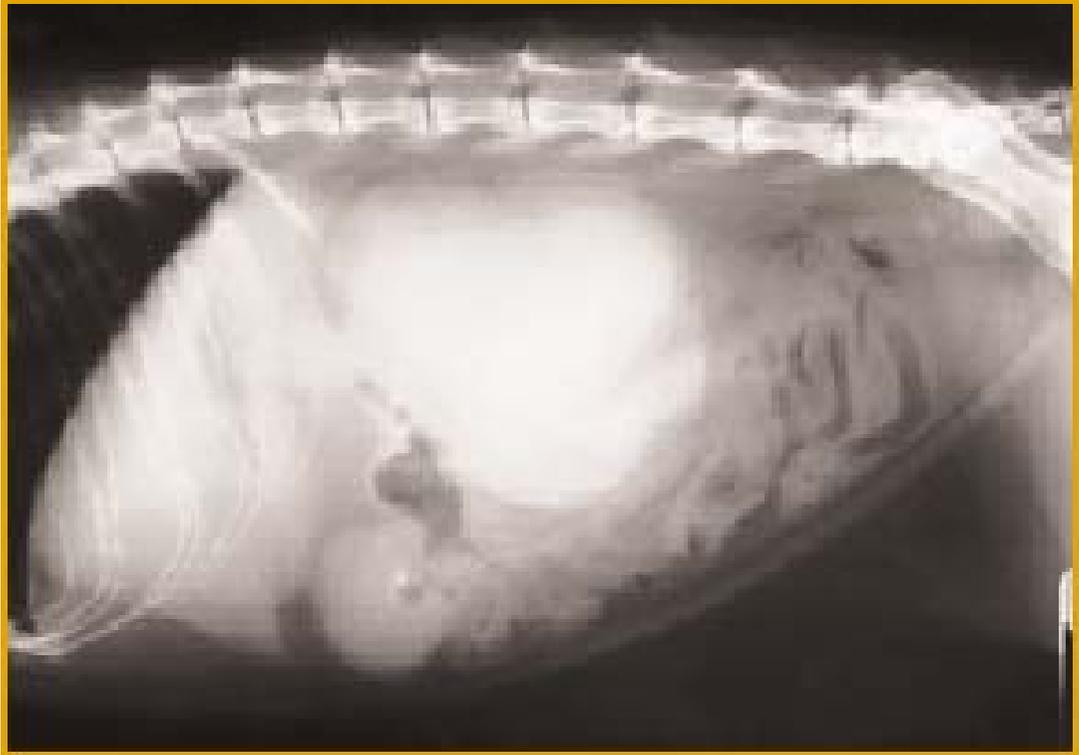
- DIAGNOSTICO
- Clínico
- Radiológico



Gato, 12 años, Mex. Domestico



Gato, 6 años, persa



RENOMEGALIA

- CAUSAS

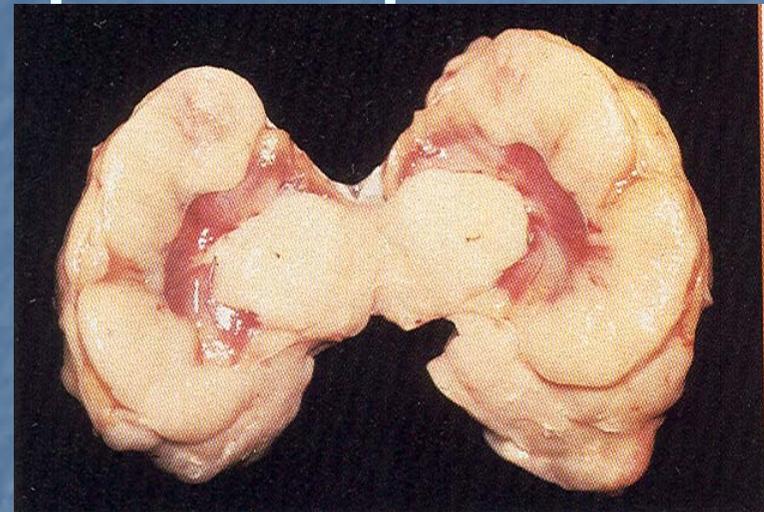


- Alteraciones del parénquima
- Alteraciones subcapsulares o perirenales
- Alteraciones en los colectores

Alteraciones del parénquima

- Difusas (Bilateral)
- Falla renal aguda, amiloidosis, linfoma felino, nefritis intersticial (PIF), hipertrofia compensatoria, acromegalia, cortos portosistémicos

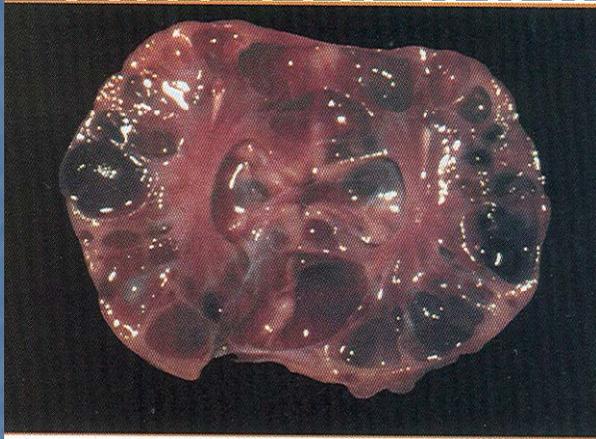
Amiloidosis



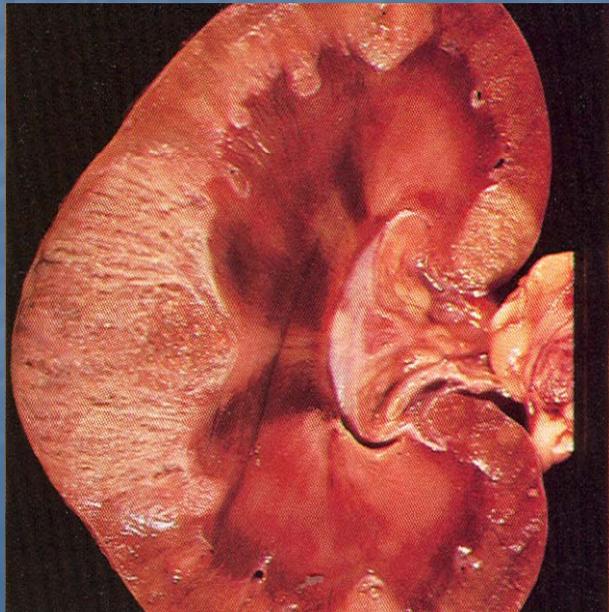
Gato, 11 años, hembra, linfoma



Alteraciones del parénquima



Gato, riñón poliquístico

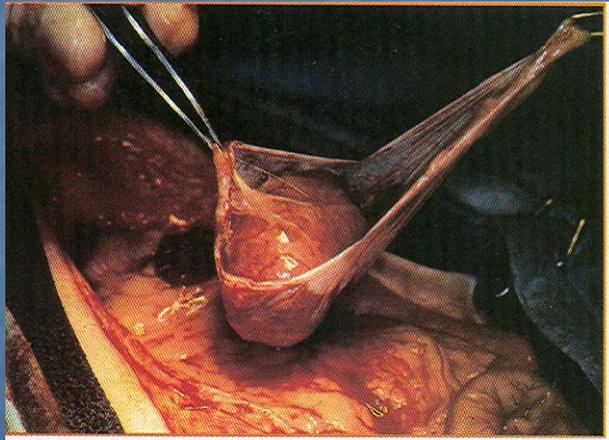


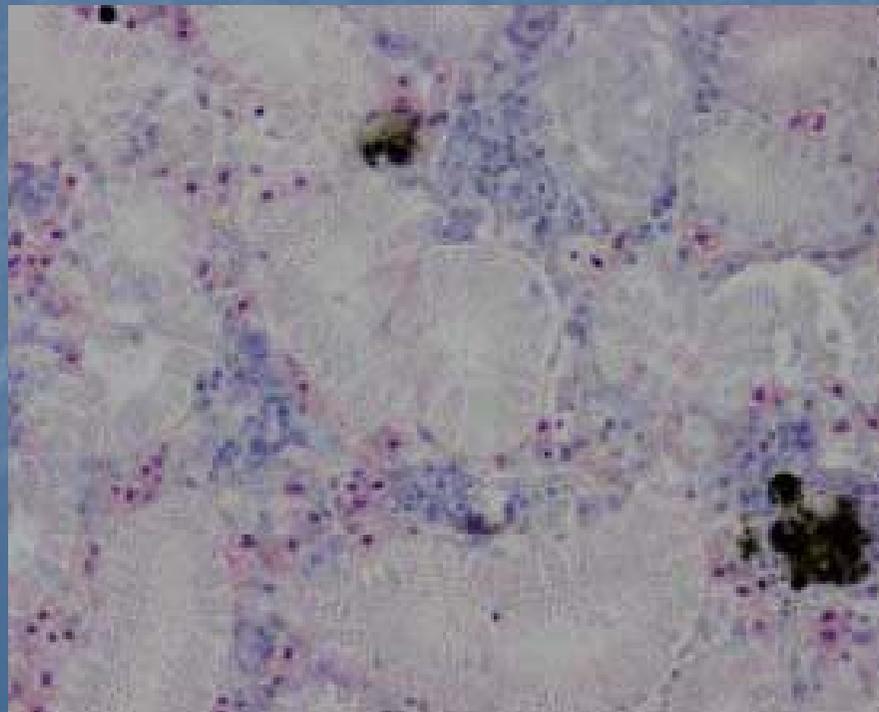
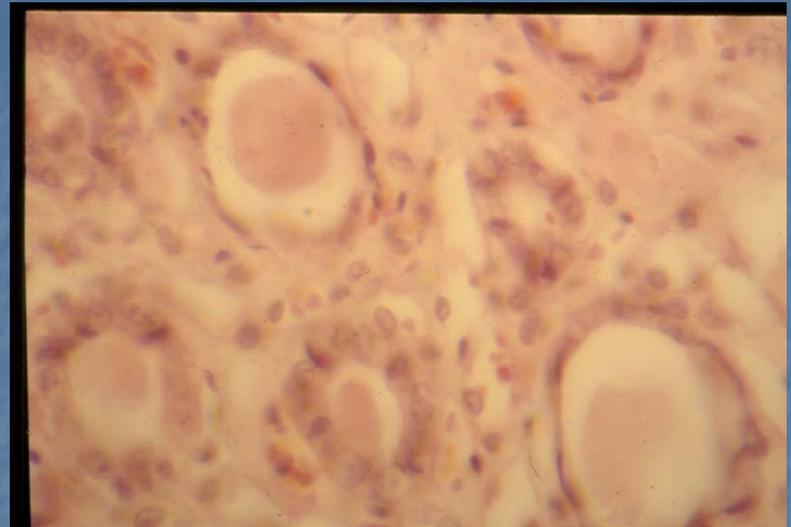
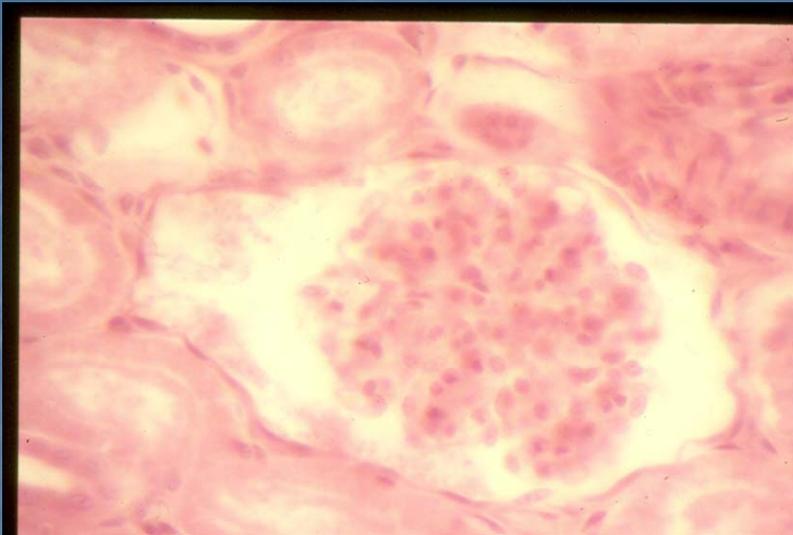
Canino, 10 años, macho
Metástasis de feocromocitoma

- Focal /mul ti focal (Uni lateral)
- Riñón poliquístico, neoplasias, abscesos, granulómas, hematomas.

RENOMEGALIA

- Subcapsulares o Periféricos
- Pseudoquistes, abscesos, hematomas
- Tubos colectores
- Hidronefrosis, pionefrosis, pielonefritis





EXAMEN DEL SEDIMENTO URINARIO EGO

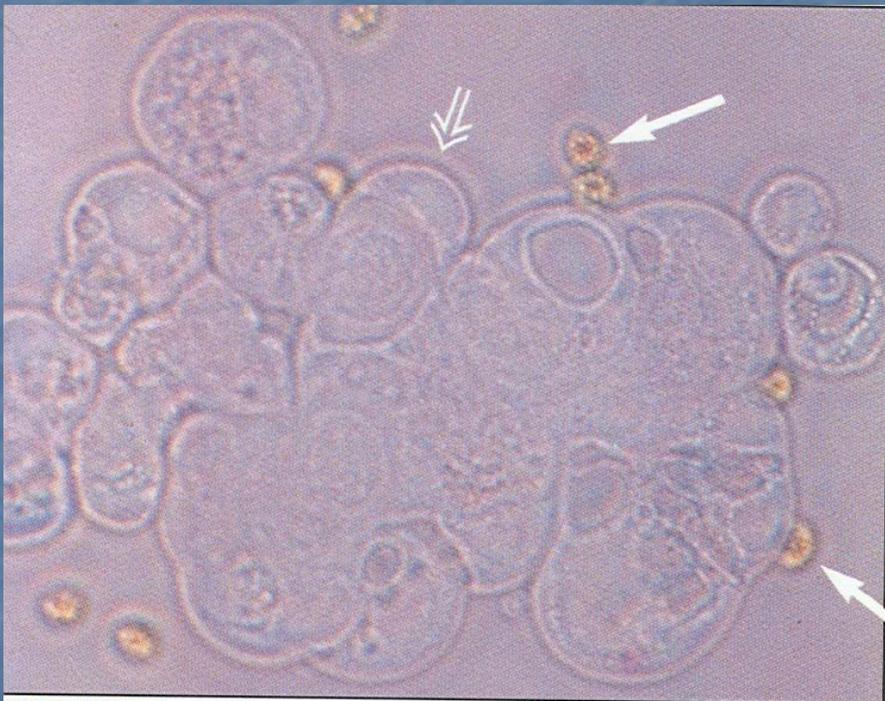


PLATE 19 Neoplastic transitional cells and red cells (160x)
(Unstained)

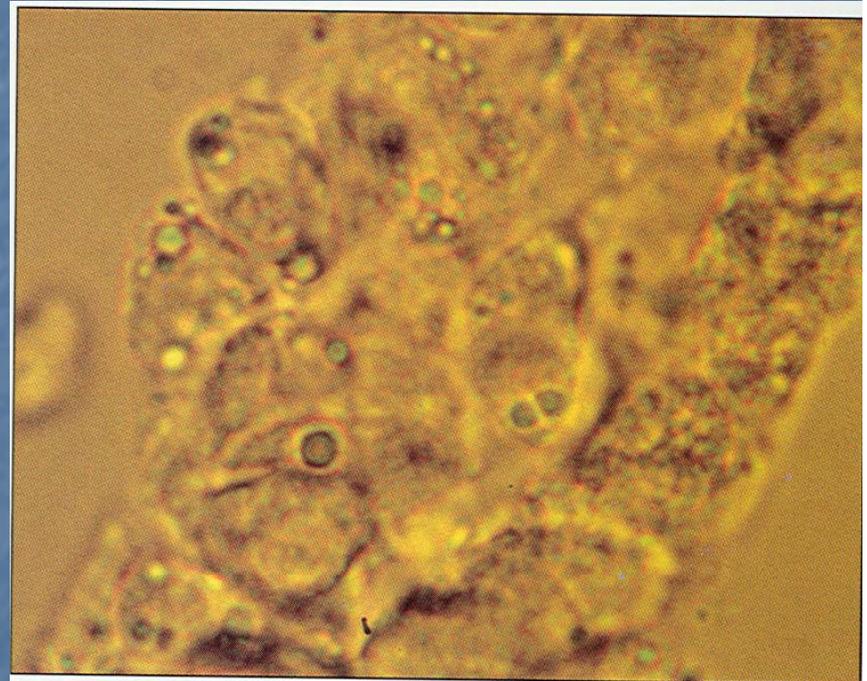


PLATE 24 Cellular cast (250x) (Unstained)

RENOMEGALIA DIAGNÓSTICO

- UTILES
- Citología renal

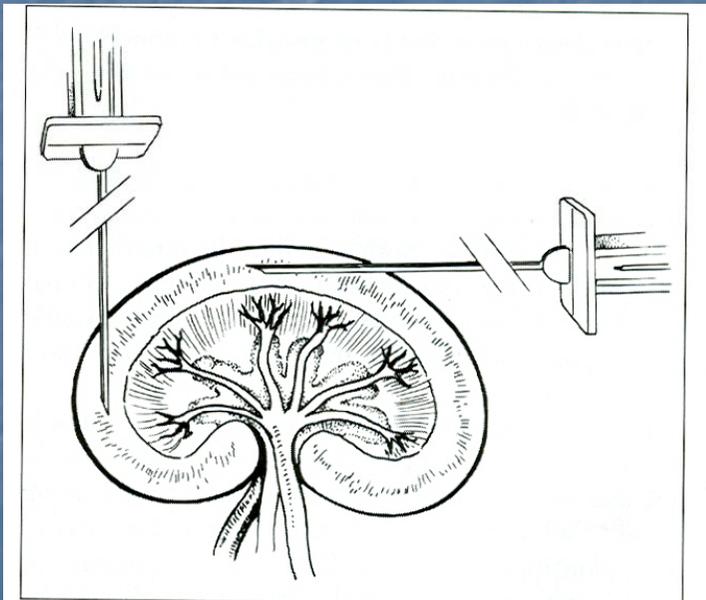




PLATE 13 Transitional epithelial cells (40×) (New methylene blue stain)

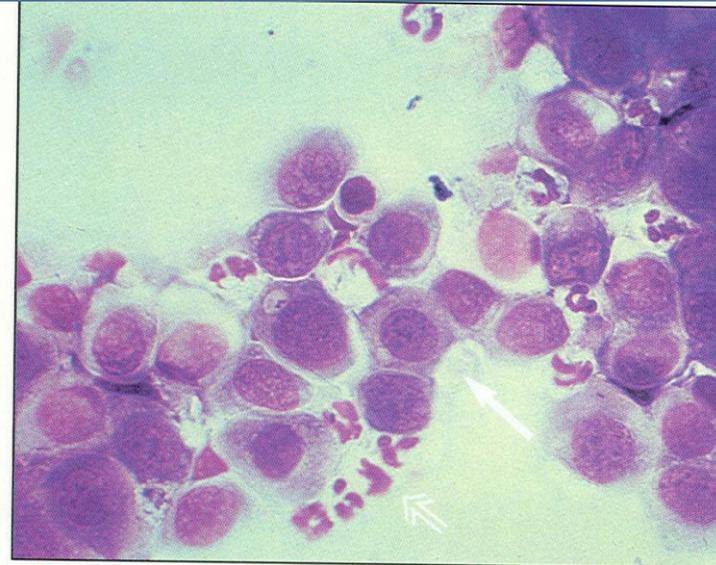
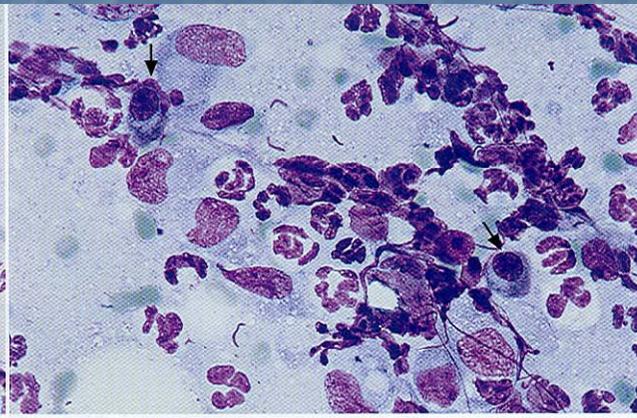
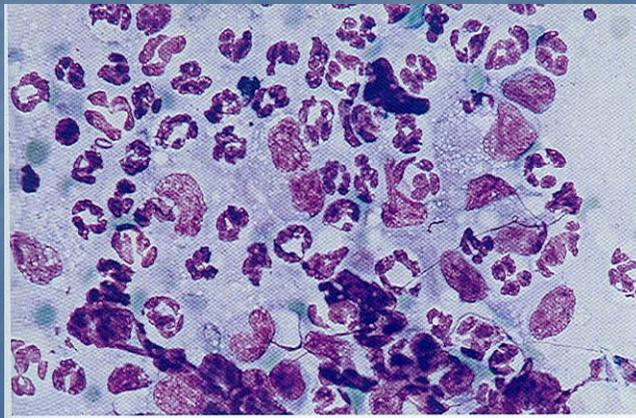
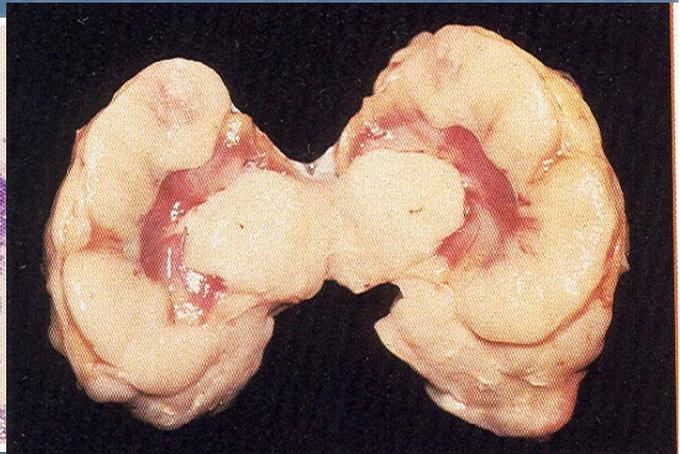
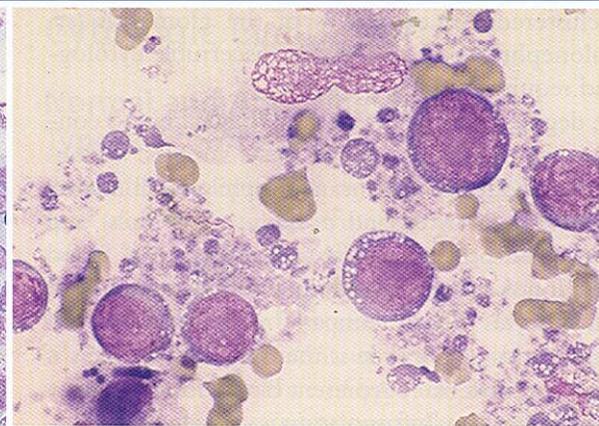
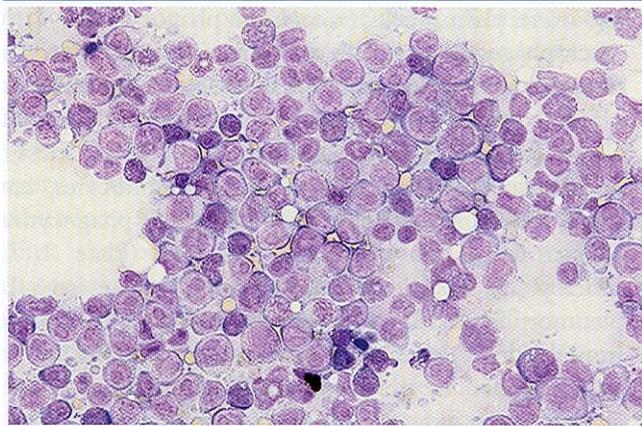
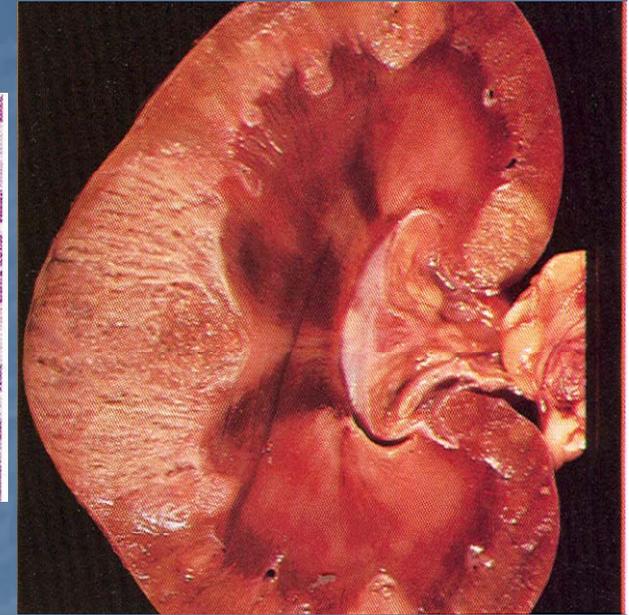
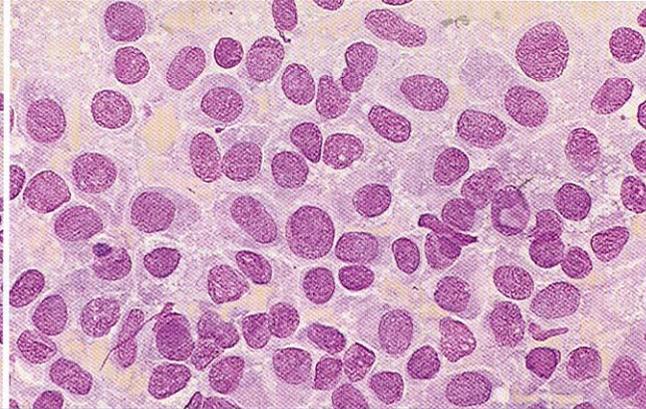
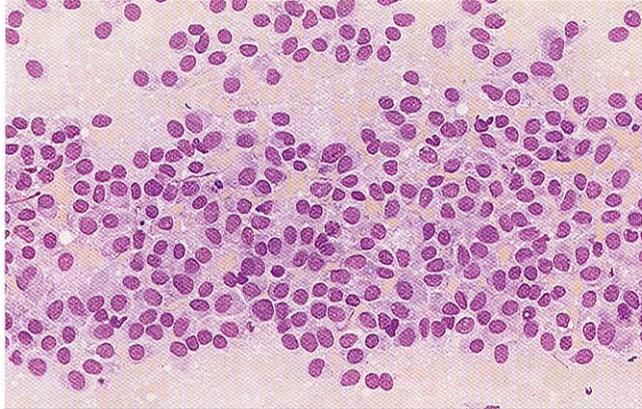


PLATE 20 Neoplastic transitional epithelial cells (400×) (New methylene blue)



PAF
CORRELACIONES CITO-HISTOLÓGICAS



PATOGENESIS DE LITOS



Figure 2A



Figure 2B



Figure 2C

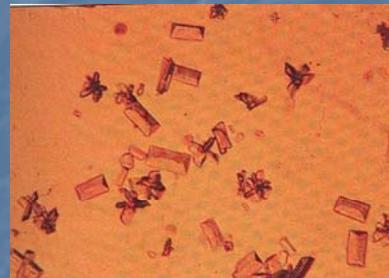


Figure 2D

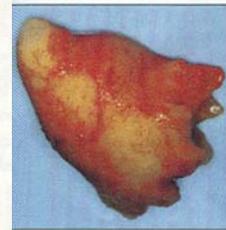


Figure 2E

Figure 2—Naturally occurring struvite uroliths formed in five different dogs illustrate variations in size, shape, and surface characteristics. (A) Nephrolith that has formed a cast of the dilated renal pelvis. (B) Mixture of large and small pyramidal-shaped urocystoliths. (C) Small, spheric, translucent urocystoliths. (D) Irregularly shaped urocystolith. (E) Small spheric-shaped and large pyramidal-shaped urocystoliths composed of struvite (*light inner core*) with a shell of calcium phosphate carbonate form (*dark shell*).

Urinary tract inflammation
(infection, idiopathic, other?)

Matrix

Not retained

Hematuria and dysuria

Crystalluria
(struvite, calcium oxalate, calcium phosphate, ammonium acid urate, cystine, etc.)

Persistent and retained

Uroliths

Hematuria and dysuria

Concomitant occurrence

Urethral plugs

Urethral obstruction

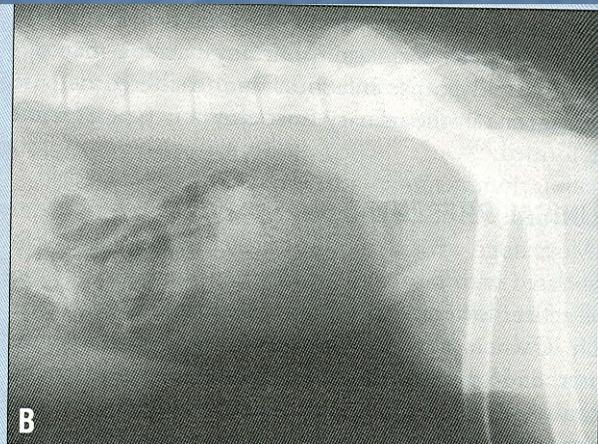
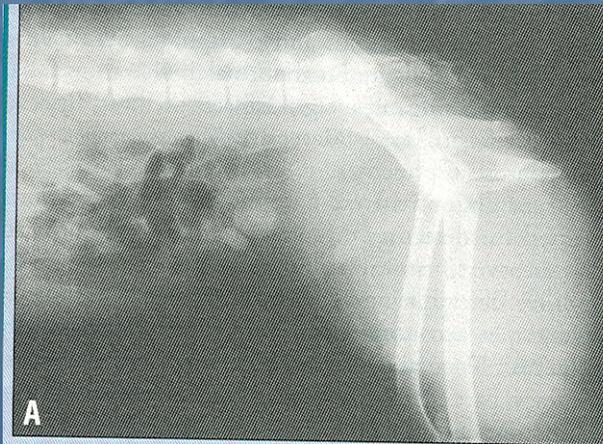
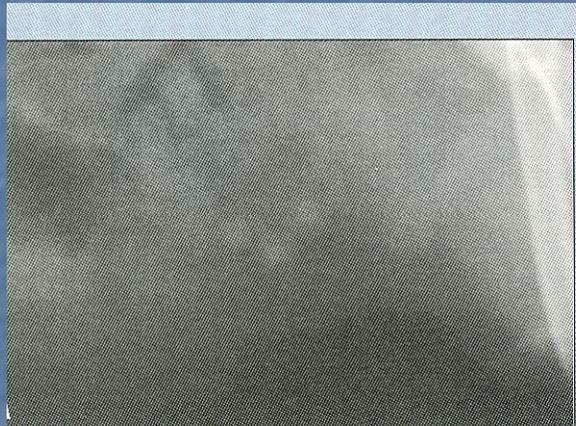
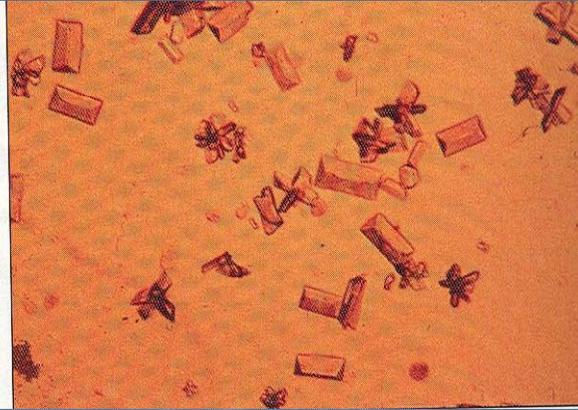
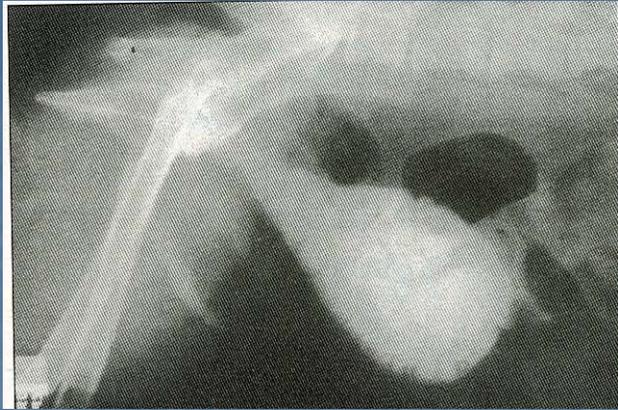
Análisis de calculos



Litiasis coraliforme oxalocálcica - Pieza quirúrgica - Se aprecia una masa litiásica que moldea la vía excretora intrarrenal



Litiasis coraliforme oxalocálcica - Pieza quirúrgica - Se aprecia el efecto de litotricia ultrasónica mostrando las distintas capas del cálculo desde el núcleo a la corteza externa



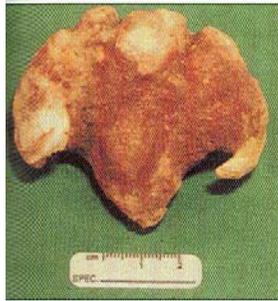


Figure 2A

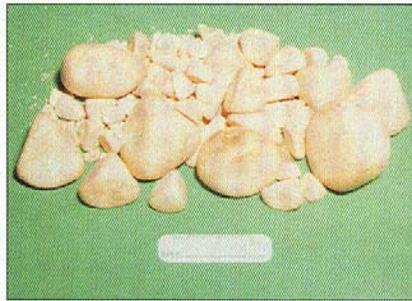


Figure 2B



Figure 2C

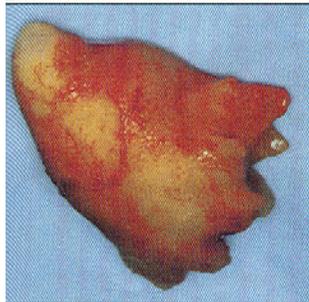


Figure 2D

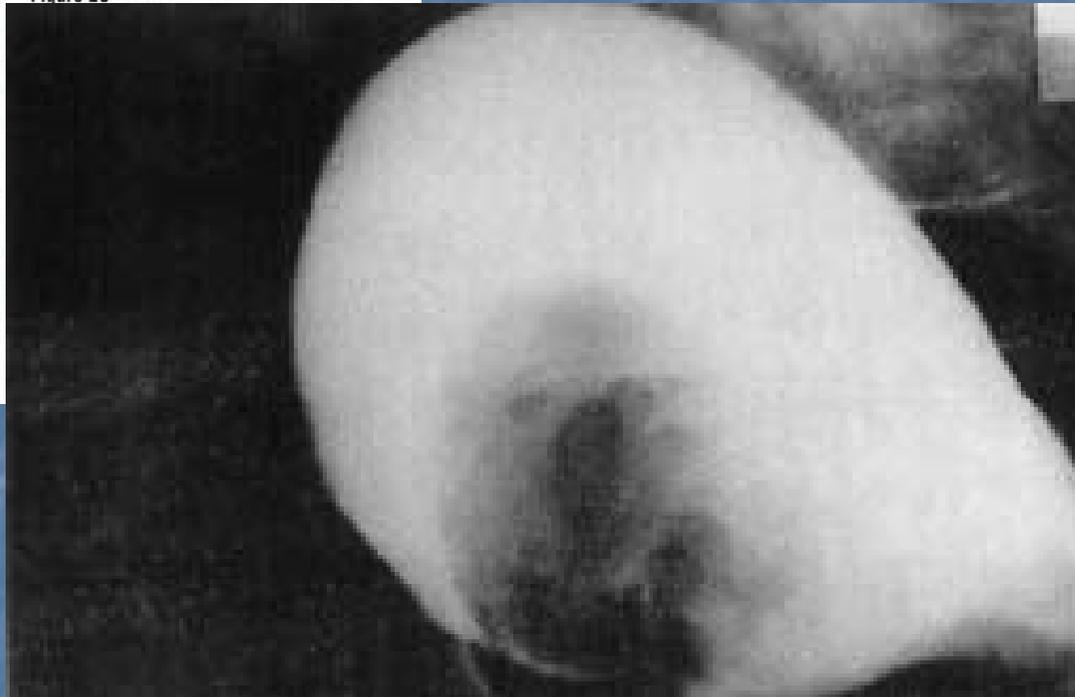


TABLE V
Mineral Composition of 1284 Feline Urethral Plugs Analyzed by Quantitative Methods^a at the Minnesota Urolith Center

<i>Predominant Mineral Type^b</i>	<i>Number of Plugs (%)</i>
Magnesium ammonium phosphate 6 H ₂ O	982 (76.5)
Newberyite	7 (0.6)
Calcium oxalate	19 (1.5)
Calcium apatite	23 (1.8)
Ammonium acid urate	6 (0.5)
Xanthine	1 (0.1)
Sulfadiazine	1 (0.1)
Mixed ^c	39 (3.0)
Matrix	206 (16.1)

^aUroliths analyzed by optical crystallography, x-ray spectroscopy, and infrared spectroscopy.

^bUrethral plug composed of 70% to 99% of the mineral type listed.

^cUrethral plug contained less than 70% of the predominant mineral.

Hematuria Patogenesis

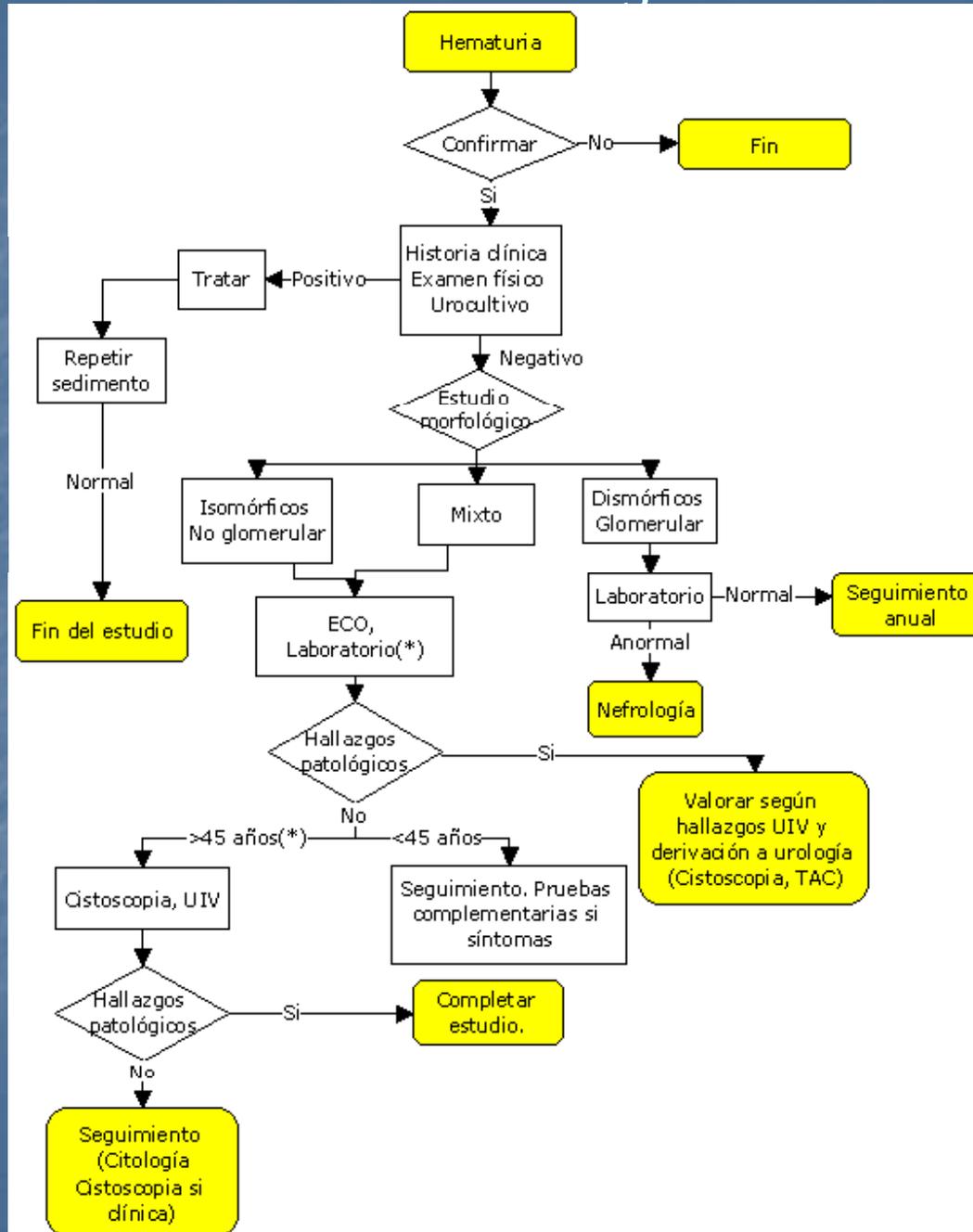




FIG. 12.4. Pielograma normal gato.

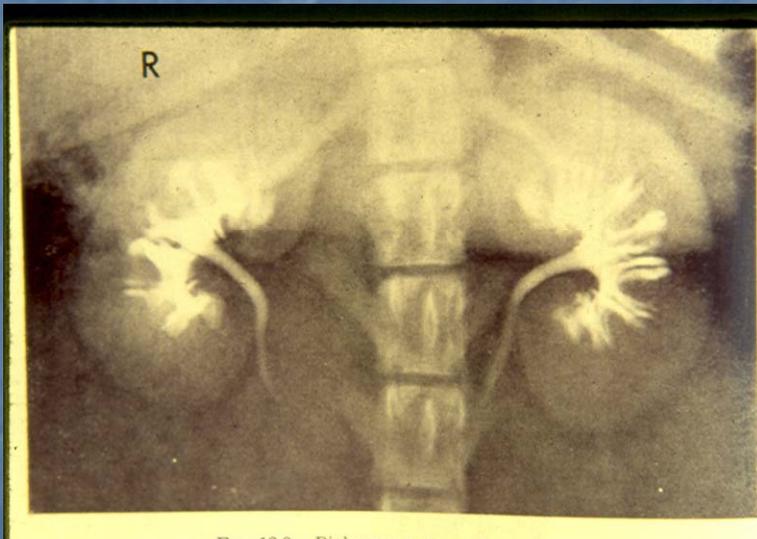


FIG. 12.3. Pielograma normal.



Figure 2—Excretory urogram (ventrodorsal view) of a 5-year-old female spayed Pomeranian with pyonephrosis of the left



Figure 4—Double-contrast cystogram of a 5-year-old, neutered, male mixed-breed cat with idiopathic lower urinary tract disease. Note the marked thickening of the urinary bladder wall at the apex (*arrowheads*).



Figure 6—Lateral view of a positive-contrast cystogram of a 3-year-old, castrated, male mixed-breed cat with a solitary urocytolith and a vesicourachal diverticulum. Note the large diverticulum protruding from the ventral aspect of the bladder vertex. (From Kruger JM, Osborne CA, Lulich JP, et al: Inherited and congenital diseases of the feline lower urinary tract. *Vet Clin North Am Small Anim Pract* 26:270, 1996. Reproduced with permission.)



Figure 3—Excretory urogram (ventrodorsal view) of a 3-year-old female spayed terrier with severe left hydronephrosis that developed 8 months after a left ureteroplasty was performed to repair ureteral avulsion. Only a thin rim of renal parenchyma (*arrows*) surrounds the severely distended renal pelvis. *G* = gastric fundus; *S* = spleen.



Figure 4—Longitudinal sonographic image of the liver and right kidney of an 18-month-old male Maine coon cat with bilateral renal lymphoma. Note the increased echogenicity of the renal cortex (*C*) compared with the renal medulla (*M*) and the liver. In addition, the renal contour is slightly irregular. (Courtesy of David Biller, DVM, Department of Clinical Sciences, Kansas State University)



Figure 5—Longitudinal sonographic image of the left kidney of the cat in Figure 1 with renal lymphoma. The renal cortex is hyperechoic but contains a single hypoechoic nodule (*N*). The narrow area of decreased echogenicity surrounding the renal parenchyma (*arrow*) may represent either hemorrhage or a uniform population of neoplastic lymphocytes.



Figure 7—Sagittal oblique sonographic image of the right kidney of a 6-year-old female Persian cat with bilateral perinephric pseudocysts. A large anechoic area of fluid is present between the renal capsule (*arrow*) and the right kidney (*K*).



Figure 6—Longitudinal sonographic image of the right kidney of a Himalayan cat with polycystic kidney disease. The normal renal parenchyma has been completely displaced by multiple anechoic cysts (*C*). (Courtesy of David Biller, DVM, Department of Clinical Sciences, Kansas State University)

LESIÓN



TEMA PARA REFLEXIONAR

