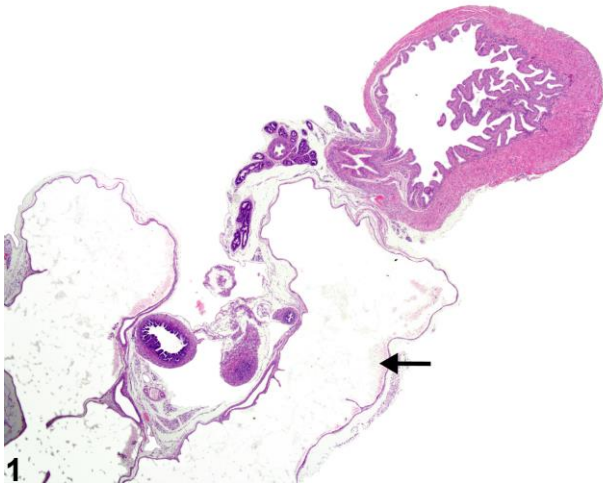


# NTP Nonneoplastic Lesion Atlas

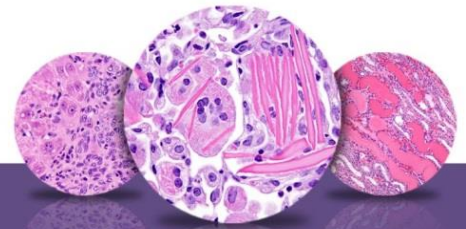
## *Ureter – Dilation*



**Figure Legend:** **Figure 1** Greatly dilated ureter (arrow) of probable familial origin from a male mouse.

**Comment:** **Dilation of the ureter** (synonym: hydroureter) is most commonly associated with cases of obstruction. Often it can be seen grossly with dilation of the urinary bladder and renal pelvis. It can be either unilateral or bilateral (Figure 1). In rats, congenital cases are more prevalent on the right side. A strain of mouse (NON/Shi) and a strain of rat (SD/cShi) have been developed that have spontaneous hydroureter and hydronephrosis and can be induced to develop proliferative lesions of the renal pelvic urothelium.

**Recommendation:** Dilation of the ureter should be diagnosed and assigned a severity grade. If ureter dilation is treatment related, the study pathologist should describe whether the lesion is unilateral or bilateral.



# NTP Nonneoplastic Lesion Atlas

## *Ureter – Dilation*

### References:

Anver M, Haines D, Swing D, Ward J. 2001. Transitional cell proliferative lesions of the ureter with hydronephrosis in B6D2F1/Cr mice. *Vet Pathol* 38:5.

Bendele M. 1998. Urologic syndrome, mouse. In: *Monographs on Pathology of Laboratory Animals: Urinary System*, 2nd ed (Jones TC, Hard GC, Mohr U, eds). Springer, Berlin, 456–462.  
Abstract: <http://www.ilsa.org/publications/urinarysystem.pdf>

Maronpot RR. 1998. Spontaneous hydronephrosis, rat. In: *Monographs on Pathology of Laboratory Animals: Urinary System*, 2nd ed (Jones TC, Hard GC, Mohr U, eds). Springer, Berlin, 306–309.  
Abstract: <http://www.ilsa.org/publications/urinarysystem.pdf>

Murai T, Mori S, Hosono M, Takeuchi Y, Ohara T, Makino S, Takeda R, Hayashi Y, Fukushima S. 1991. Renal pelvic carcinoma which shows metastatic potential to distant organs induced by N-butyl-N-(4-hydroxybutyl) nitrosamine in NON/Shi mice. *Jpn J Cancer Res* 82:1371–1377.  
Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/1778760>

Murai T, Mori S, Machino S, Hosono M, Takeuchi Y, Ohara T, Makino S, Takeda R, Hayashi Y, Iwata H, Yamamoto S, Ito H, Fukushima S. 1993 Induction of renal pelvic carcinoma by phenacetin in hydronephrosis-bearing rats of the SD/cShi strain. *Cancer Res* 53:4218–4223.  
Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/8364917>

### Authors:

John Curtis Seely, DVM, DACVP  
Senior Pathologist  
Experimental Pathology Laboratories, Inc.  
Research Triangle Park, NC

Abraham Nyska, DVM, Diplomate ECVP, Fellow IATP  
Expert in Toxicologic Pathology  
Visiting Full Professor of Pathology  
Sackler School of Medicine, Tel Aviv University  
Timrat Israel