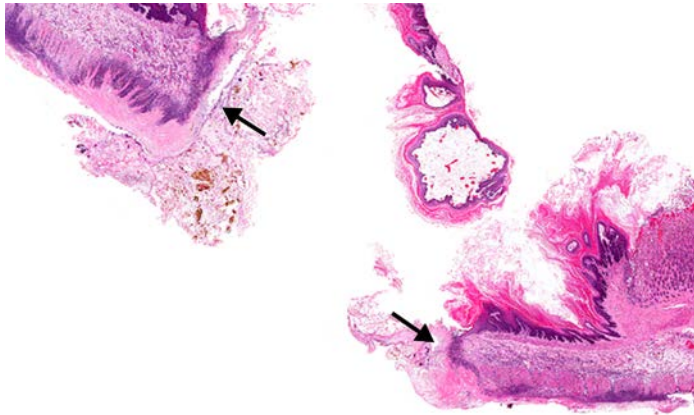




NTP Nonneoplastic Lesion Atlas

Stomach, Forestomach – Perforation



1

Figure Legend: **Figure 1** Stomach, Forestomach - Perforation in a male F344/N rat from a chronic study. The arrows indicate the edges of the perforation.

Comment: A perforation (Figure 1) is a hole in the stomach. The contents of the stomach have access to the peritoneal cavity and generally incite a marked inflammatory response. Adhesions between the stomach and adjacent organs or the abdominal wall may occur with larger perforations that persist for some time. Perforations are often caused by gavage accident or by large, aggressive ulcers that progress through the submucosa, muscularis, and serosa.

Recommendation: Perforation of the forestomach should be diagnosed whenever present, but it is not necessary to assign a severity grade. Secondary lesions, such as inflammation, fibrosis, or adhesions, should generally not be diagnosed separately unless they are prominent components of the lesion. If a perforation is secondary to a foreign body, the foreign body should be diagnosed separately.

References:

Bertram TA, Markovits JE, Juliana MM. 1996. Non-proliferative lesions of the alimentary canal in rats GI-1. In *Guides for Toxicologic Pathology*. STP/ARP/AFIP, Washington, DC, 1-16.

Abstract: <https://www.toxpath.org/ssdnc/GINonproliferativeRat.pdf>

Betton GR. 1998. The digestive system I: The gastrointestinal tract and exocrine pancreas. In: *Target Organ Pathology* (Turton J, Hooson J, eds). Taylor and Francis, London, 29-60.

Abstract: <http://www.amazon.com/Target-Organ-Pathology-Basic-Text/dp/0748401571>



NTP Nonneoplastic Lesion Atlas

Stomach, Forestomach – Perforation

References:

Brown HR, Hardisty JF. 1990. Oral cavity, esophagus and stomach. In: Pathology of the Fischer Rat (Boorman GA, Montgomery CA, MacKenzie WF, eds). Academic Press, San Diego, CA, 9-30.

Abstract: <http://www.ncbi.nlm.nih.gov/nlmcatalog/9002563>

Leininger JR, Jokinen, MP, Dangler CA, Whiteley LO. 1999. Oral cavity, esophagus, and stomach. In: Pathology of the Mouse (Maronpot RR, ed). Cache River Press, St Louis, MO, 29-

Abstract: <http://www.cacheriverpress.com/books/pathmouse.htm>

Puurunen J, Huttunen P, Hirvonen H. 1980. Is ethanol-induced damage of the gastric mucosa a hyperosmotic effect? Comparative studies on the effects of ethanol, some other hyperosmotic solutions, and acetyl-salicylic acid on rat gastric mucosa. Acta Pharmacol Toxicol (Copenh) 47:321-327.

Abstract: <http://onlinelibrary.wiley.com/doi/10.1111/j.1600-0773.1980.tb01567.x/abstract>

Authors:

Linda H. Kooistra, DVM, PhD, DACVP
Pathologist
Charles River 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