



NTP Nonneoplastic Lesion Atlas

Ear – Proteinaceous fluid

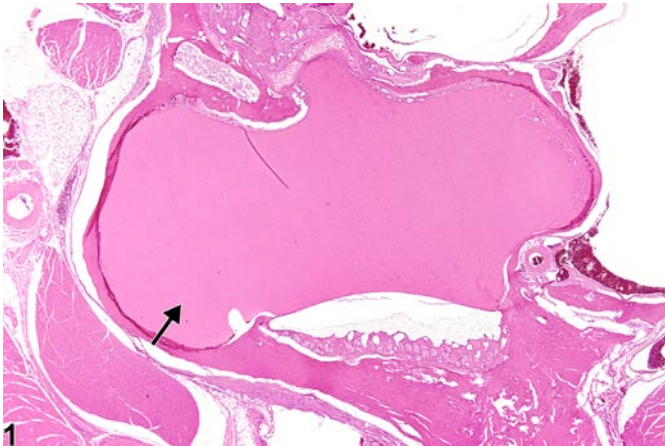


Figure Legend: **Figure 1** Ear, Middle ear - Proteinaceous fluid in a male Fischer 344/N rat from a chronic study. There is acellular, eosinophilic, proteinaceous fluid in the tympanic cavity of the middle ear.

Comment: Proteinaceous fluid may accumulate in the inner, middle, or external ear canals as the result of mild to moderate vascular damage. Proteinaceous fluid in the ear canals is characterized by eosinophilic, homogeneous material with few to no inflammatory cells (Figure 1).

Recommendation: Proteinaceous fluid should be diagnosed and assigned a severity grade. An appropriate site modifier (e.g., middle ear or external ear) should be used in the diagnosis to indicate the location of the fluid. If the fluid is the result of an inflammatory process (i.e., there is other evidence of inflammation in the surrounding tissues), inflammation should be diagnosed and the proteinaceous fluid described in the pathology narrative.

References:

Maeda K, Hirano T, Ichimiya I, Kurono Y, Suzuki M, Mogi G. 2004. Cytokine expression in experimental chronic otitis media with effusion in mice. *Laryngoscope* 114:1967-1972.

Full-text: <http://onlinelibrary.wiley.com/doi/10.1097/01.mlg.0000147930.29261.51/full>

National Toxicology Program. 1997. NTP TR-459. Toxicology and Carcinogenesis Studies of t-Butylhydroquinone (CAS No. 1948-33-0) in F344/N Rats and B6C3F₁ Mice (Feed Studies). NTP, Research Triangle Park, NC.

Abstract: <http://ntp.niehs.nih.gov/go/6062>



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References:

Piltcher OB, Swarts JD, Magnuson K, Alper CM, Doyle WJ, Hebda PA. 2002. A rat model of otitis media with effusion caused by Eustachian tube obstruction with and without *Streptococcus pneumoniae* infection: Methods and disease course. *Otolaryngol Head Neck Surg* 126:490-498. Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/12075222>

Yoshitomi K, Brown HR. 1990. Ear and pinna. In: *Pathology of the Fischer Rat: Reference and Atlas* (Boorman GA, Eustis SL, Elwell MR, Montgomery CA, MacKenzie WF, eds). Academic Press, San Diego, CA, 227-238. Abstract: <http://www.ncbi.nlm.nih.gov/nlmcatalog/9002563>

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