

Tracheopathia osteoplastica

Carla R. Penner, DDS

Lester D.R. Thompson, MD

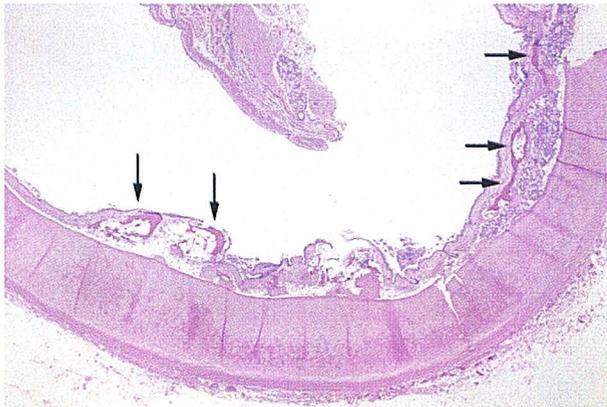


Figure 1. Low-power view shows the tracheal cartilages with associated bone and cartilage in the submucosa (arrows).

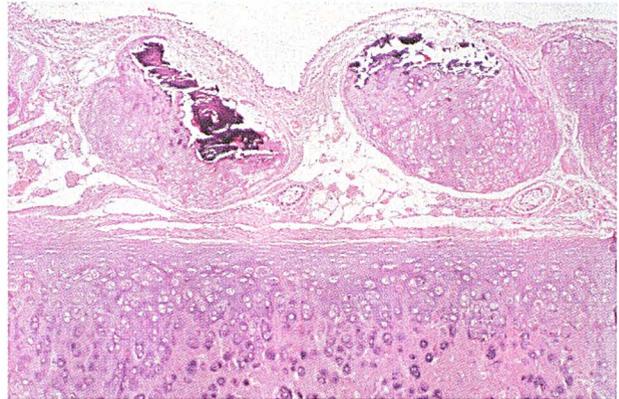


Figure 2. Medium-power view shows the normal cartilage (bottom) and submucosal nodules of cartilage. The nodules have focal areas of calcification ("broken" areas at the top of the nodules).

Tracheopathia osteoplastica (tracheobronchopathia osteochondroplastica) is a segmental degenerative disorder of the tracheobronchial tree. It is characterized by multiple submucosal cartilaginous and osseous nodules of various sizes that cause a narrowing of the upper respiratory tract. This disorder is most common in elderly men, and it is occasionally associated with chronic inflammation or with trauma. Tracheopathia osteoplastica can manifest clinically as nonspecific signs and symptoms, although stridor and dyspnea are common. Radiologic studies may suggest the diagnosis if scalloped nodular calcified opacities are seen in the submucosa. The diagnosis is confirmed after endoscopic and pathologic examination.

Histologically, metaplastic cartilage and bone are found in the submucosa, often in continuity with the inner surface of the tracheal cartilage (figure 1). The overlying mucosa is intact and may appear to be normal or metaplastic. The bony lamellae may protrude into the mucosa, which is the characteristic appearance on bronchoscopy. The irregular bony spicules have thin walls surrounding

fatty marrow (figure 2). The histologic diagnosis is difficult only when the biopsy is small and not obtained from the whole lesion or when information about the radiographic studies is unknown. The clinical differential diagnosis includes tracheobronchomegaly and tracheomalacia, both of which manifest as a softening, flexibility, or dilation of the trachea, as opposed to the rigidity of tracheopathia osteoplastica.

Localized disease may not require treatment, but significant narrowing may require laser removal and dilation. Meticulous tracheobronchial hygiene is imperative in long-term clinical management.

Suggested reading

Birzgalis AR, Farrington WT, O'Keefe L, Shaw J. Localized tracheopathia osteoplastica of the subglottis. *J Laryngol Otol* 1993;107:352-3.

Thompson LDR. Laryngeal pathology. In: Fu YS, Wenig BM, Abemayor E, Wenig BL, eds. *Head and Neck Pathology: With Clinical Correlations*. New York: Churchill Livingstone, 2001:369-455.