THE PATIENT IS A 59-YEAR-OLD WHITE man with a history of non-productive cough and slight hoarseness of two months' duration. Physical examination is not remarkable.

FIGURE 1

FIGURE 2
DIAGNOSIS:

Osteochondroma of the Trachea

The chest roentgenogram (Fig. 1) revealed what appeared to be a soft tissue mass compressing the trachea on the left and extending approximately 4 cm. laterally at the level of the clavicles. Tomograms through the area (Fig. 2) showed a mass measuring 3 cm. in greatest dimension, which extended into the lumen of the trachea and contained numerous nodular calcifications.

Bronchoscopy disclosed a stony-hard mass arising from the left lateral wall of the trachea at a distance of 17 cm., almost completely occluding the tracheal lumen. An excision of the tumor and tracheoplasty were performed. Histologically, the tumor showed the characteristic pattern of benign osteochondroma, with areas of enchondral bone formation.

In comparison to tumors of the larynx and bronchi, tumors of the trachea are relatively rare. The reason for this apparent sparing of the trachea is not known. Approximately 50 per cent of all tracheal tumors are benign. Although multiple osteochondromas have frequently been reported, a search of the literature in English has failed to uncover any previous report of a solitary osteochondroma of the trachea. The most frequent site for these tumors is the lower third of the trachea, followed by the upper third. They show a predilection for the lateral and posterior walls. Men in the sixth decade are most frequently affected.

Tracheal tumors can present in a number of different ways. The symptoms depend primarily on mechanical factors brought about by the growth of the tumor. The most common symptoms are cough, dyspnea, wheeze, hemoptysis, and hoarseness. The diagnosis is rarely made by x-ray examination.

Because of their rarity and the variety of symptoms which they produce, tracheal tumors are often missed. It is, therefore, important to include them in the differential diagnosis of respiratory diseases.

REFERENCES


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Readers are invited to submit articles for the Roentgenogram of the Month. Please submit a brief abstract of your case to Benjamin Felson, M.D., Department of Radiology, Cincinnati General Hospital, Cincinnati, Ohio.

TOXICITY OF TUBERCLE BACILLI IN TISSUE CULTURE

Normal and BCG-sensitized alveolar macrophages were procured from rabbit lungs and infected with tubercle bacilli in vitro. The mortality of macrophages which engulfed the bacilli, the phagocyte rate and the number of intracellular bacilli were calculated as the indicator of the toxicity of the macrophage or resistance of the macrophages. It was observed that only living virulent tubercle bacilli were toxic to alveolar macrophages and the toxicity was markedly reduced when the bacilli were killed by heat or attenuated by antituberculous agents. Intracellular multiplication of virulent tubercle bacilli was not observed even inside the normal macrophages. The difference in mortality between normal and sensitized rabbit alveolar macrophages was not found when they were inoculated with small dose of bacilli. On the contrary, the mortality of sensitized rabbit alveolar macrophages was markedly increased when they were infected with large doses of virulent bacilli. Such hypersensitive phenomena could be explained by the fact of increased phagocytic activities of sensitized macrophages.