Malignant Mediastinal Chemodectoma*


A 20-year-old man with a posterior mediastinal mass and erosion of the rib proved to have a malignant chemodectoma. The case is of interest because of the rare location and malignant fatal course.

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Chemodectomas commonly arise from the carotid bodies and are usually benign. The occurrence of this tumor in the mediastinum and a fatal course are exceedingly rare. Hence, the following case is reported.

CASE REPORT

A man aged 20 years was hospitalized on May 11, 1973 for progressive brachial neuralgia of six months' duration. Clinical examination revealed dullness and diminished breath sounds in the right infraclavicular region. There was no evidence of a primary neoplasm in the neck or abdomen. A roentgenogram of the chest showed a rounded opacity in the right upper chest with erosion of the first rib (Fig 1).

The white blood cell count was 9,650/cu mm. The differential count was 64 percent polymorphonuclear leukocytes, 34 percent lymphocytes, 2 percent eosinophils, and 2 percent monocytes. The hemoglobin level was 14.3 gm/100 ml, and the erythrocytic sedimentation rate was 49 mm/hr. The levels of serum electrolytes, blood urea, and blood glucose, as well as the bleeding time, clotting time, and urinalysis results were normal. The patient's blood group was O. The results of barium meal and intravenous pyelogram studies were normal.

Right thoracotomy on May 13, 1973 revealed an extra-pleural mass in the apex of the chest. The tumor was very vascular and was found to be infiltrating the brachial plexus. As much tumor tissue as possible was resected.

The excited specimen was a poorly circumscribed, lobulated vascular tumor, 3 x 3 in, with areas of necrosis. The tumor was composed of large cells arrayed in an organoid pattern with groups of five to ten cells separated by strands of fibrocollagenous tissue containing small blood vessels (Fig 2). The blood vessels showed no endothelial proliferation. The cells were large epithelioid type with polyhedral and irregular shapes. The cytoplasm was abundant and eosinophilic, with occasional vacuolations. The nuclei were single and large with vesicular to deep-staining properties. Mitotic figures were occasionally seen. The cells were weakly chro- maffin-positive, and the PAS stain was negative. There was reticulin around the blood vessels and in the stroma separating the groups of cells. There were no rosettes, neuroblasts, or ganglion cells. The classic organoid pattern and epithelial cell appearance, with no evidence to suggest a secondary neoplasm, led to the diagnosis of chemodectoma.

The immediate postoperative course was uneventful. The patient was given cobalt therapy, but the brachial neuralgia persisted, and a mass appeared in the supraclavicular area.

**Figure 1.** Chest roentgenogram showing mass in right upper lung field.
There was also a local intrathoracic recurrence. The patient was given multiple-drug therapy using cyclophosphamide (Endoxan), mitomycin, 5-fluorouracil, and vinceristine. The general condition of the patient deteriorated rapidly, and he died five months later. An autopsy was not done.

**DISCUSSION**

Various names, such as paraganglioma and chemodectoma, are used to describe tumors of the carotid body and related structures. The latter term was coined by Lattes and Waltner to designate tumors arising from paraganglion cells constituting the chemoreceptors. Chemodectomas usually arise from the carotid bodies but have also been reported in the glomus jugulare, vagus nerve, ganglion nodosum, mediastinum, lungs, abdomen, ciliary body, femoral canal, mandible, retroperitoneal region, and extremities.

Intrathoracic chemodectomas are usually subpleural and intrapulmonary. Pulmonary thromboemboli have been incriminated in their pathogenesis. They may also arise from chemoreceptor tissue in relation to the thoracic aorta. Mediastinal chemodectomas are exceedingly rare. Tama et al have reported 13 cases of mediastinal chemodectoma of which six occurred in males and seven in females. In three of the cases, there was a cervical mass extending into the mediastinum. Chemodectomas are usually benign but locally invasive. Metastatic lesions are exceedingly rare. The most common site of visceral metastasis seems to be the lungs. Among 179 cases of carotid body tumors, Fanning et al found 25 cases of chemodectoma with metastasis. These tumors are capable of secreting catecholamines. Chemodectomas are radioresistant, and none is known to have undergone spontaneous regression. Surgical excision remains the treatment of choice.

The rare location of the tumor and the exceedingly rare fatal malignant course are of interest in the present case.

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**REFERENCES**


**Palliative Esophageal Intubation for Carcinoma**

**A Combined Push-Pull Method**

F. Lawrence Hanson, M.D., F.C.C.P.,** and Carl E. Bredenberg, M.D.***

The use of prosthetic tubes for palliation of esophageal carcinoma can be carried out with safety using a combined push-pull method. The advantages of simultaneous endoscopy and laparotomy are illustrated in two cases. For safe durable palliation, emphasis must be placed upon seating the tube under direct vision as well as upon the firm fixation of the tube to the abdominal wall to prevent its subsequent migration.

Pneumatic intubation relieves the most disabling symptom of nonresectable esophageal carcinoma—severe dysphagia. Of the available prostheses, the Southar tube can be introduced at esophagoscopy and "pushed" through the obstructing tumor. This technique avoids laparotomy, but has the risks of esophageal perforation and of inadequate fixation and subsequent migration of...