The Radiologic Findings in Posterior Mediastinal Chordoma

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Abstract. A 14-year-old girl with a posterior mediastinal chordoma is described. Computed tomography is helpful in defining the extent of the soft tissue mass. Osseous changes related to the presence of the chordoma are described. A review of the pertinent literature is presented.

Key words: Mediastinum – Neurogenic tumor – Chordoma – Computed tomography.

Chordomas are unusual tumors arising from residual notochordal rests. They are most often located in the spheno-occipital area, the sacro-coccygeal region, or in the upper cervical spine [3]. Rarely, a chordoma may present as a prevertebral or paravertebral soft tissue mass [2-5]. Recently we had the opportunity to study a patient who presented with a posterior mediastinal mass and associated vertebral body erosion. A pathologic diagnosis of chordoma was made. This case and a brief review of the literature are presented.

Case Report

B.G., a 14-year-old girl presented in December 1978 at the Thomas Jefferson University Hospital complaining of productive cough. Physical examination revealed rhonchi over the lower right chest. Laboratory examination included a complete blood count, sedimentation rate, and a Sequential Multiple Analyzer-12® (SMA-12, Technicon Inc.) evaluation. These studies were normal.

Fig. 1. Posterior-anterior chest radiograph shows a widened posterior-superior mediastinum with tracheal shift to the right.
Chest radiographs revealed a well defined posterior mediastinal mass measuring $6 \times 7$ cm. The mass was neither calcified nor cavitatated (Fig. 1).

An esophagram in the anterior-posterior and oblique views showed anterior and right sided displacement of the esophagus (Fig. 2A and B). There was anterior displacement of the trachea. Computed tomographic studies showed the mass to best advantage. The mass was directly anterior to the 3rd and 4th dorsal vertebral bodies and there was scalloping of the anterior border of the vertebral bodies suggesting bone erosion (Fig. 3). Linear tomography of the dorsal spine revealed anterior erosion of T3 and T4 vertebral bodies consistent with a slowly growing extrinsic mass (Fig. 4).

At thoracotomy, the mass appeared cystic and was readily separated from the esophagus. It was, however, densely adherent to the anterior spinal ligament. Several portions of the cyst wall were submitted for frozen section and no tumor was seen. The adherent portion of the cyst was not removed. Subsequent permanent sections revealed the mass to be a chordoma.

The patient underwent a second thoracotomy and a resection of the residual tumor together with a partial en block resection of the anterior portion of the vertebral bodies was performed. Pathologic examination revealed a small focus of residual tumor involving the anterior spinal ligament with focal bony invasion. Postoperative recovery was uneventful.

Discussion

The differential diagnosis of posterior mediastinal soft tissue masses include primarily lesions of neurogenic,