Photoclinic

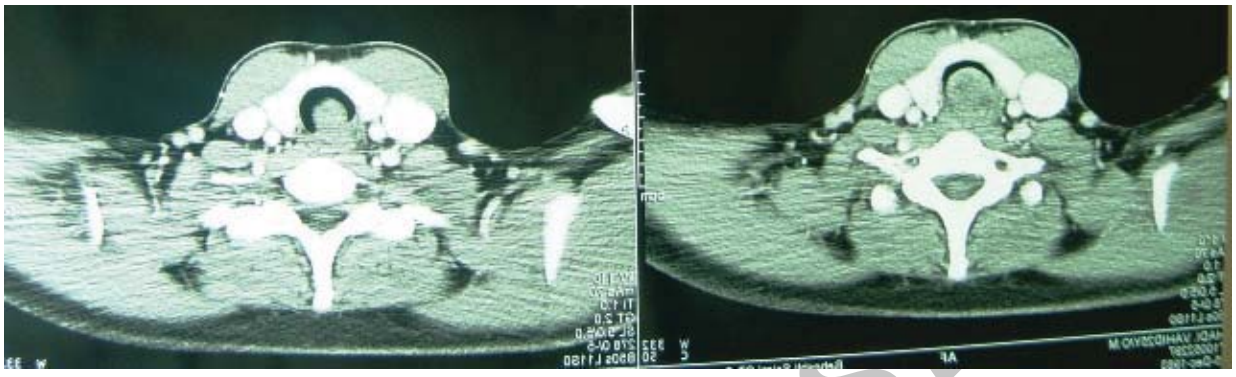

Figure 1. CT-scan of the neck showing an intra-tracheal mass.

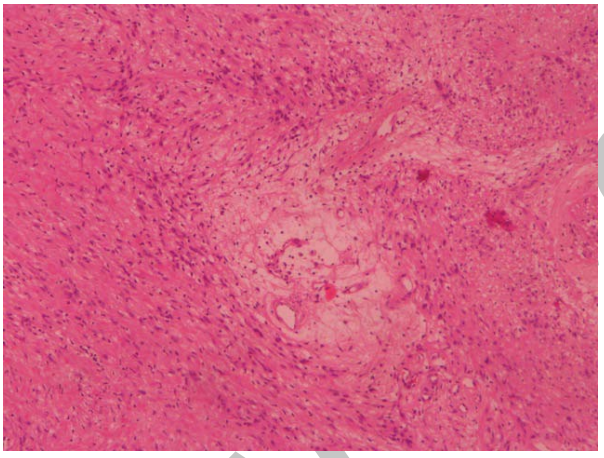

Figure 2. Antoni A tissue (cellular, consists of spindle shaped cells) and Antoni B tissue (myxoid matrix) in the center (10x).

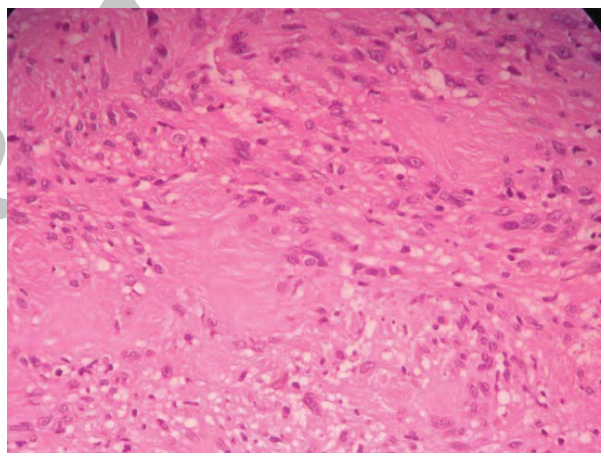

Figure 3. Positive H & E staining for Verocay body (40x).

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A previously healthy 20 year-old male presented with cough and shortness of breath for several months. He had no significant past medical history and took no medications. In the physical examination, bilateral expiratory stridor mimicking wheezing was present. His chest X-ray was normal, and the patient was placed on asthma medications. His symptoms persisted and he returned to the private facility where he was admitted and was started on intravenous antibiotics. In addition, a CT-scan of the chest and neck was performed, which showed a mass in the upper portion of his trachea (Figure 1).

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What is your diagnosis?
See the next page for diagnosis

Photoclinic Diagnosis: **Expiratory Stridor Mimicking Bronchial Asthma**

The patient was transferred to our institution for further evaluation and treatment. Flexible bronchoscopy confirmed the presence of a mass in the upper portion of his trachea that caused a partial obstruction. The patient was taken to the operating room, where rigid bronchoscopy confirmed the presence of a mass in the upper portion of the trachea. The mass did not appear amenable to endotracheal treatment or resection, thus the patient underwent tracheal intubation. In the thyroidectomy position and with a collar incision, the trachea was inspected and the mass was visualized within the trachea.

The trachea was vertically incised over the third and forth ring, and general anesthesia continued via a tracheostomy tube. A sessile mass (1×2 cm) was located over the second and third ring of the trachea, which obstructed about 70% of the lumen. Intra-operative pathologic evaluation favored schwannoma and confirmed following complete resection with a negative margin on the trachea (Figures 2, 3).

His postoperative course was uneventful and he was discharged on the 7th postoperative day. He was seen six weeks and six months postoperatively and had recovered well without any adverse sequelae.

Neurogenic tumors comprise 15% – 25% of primary mediastinal tumors. Less than half of these tumors are schwannomas.[1] Endobronchial, or bronchial wall schwannomas are very rare and account for only a miniscule percentage of pulmonary neoplasms. They may be difficult to diagnose due to their non-specific symptoms. Most symptoms result from airway obstruction secondary to tumor size and location. The differential diagnosis for endobronchial tumors includes a variety of benign and malignant neoplasms including, but not limited to: hamartomas, carcinoids, fibrous histiocytomas, fibrous polyps, squamous papillomas, leiomyomas, and inflammatory pseudotumors. Ultimately, diagnosis is confirmed by histopathologic evaluation of the tumor.

These benign tumors (also known as neurilemmomas or neurinomas) although rare, are the most common peripheral nerve tumors. The neurofibroma can occur in the trachea as a primary tumor, but it is not associated with generalized neurofibromatosis. This tumor can invade the wall of trachea, which then segmental resection would be the treatment of choice. Primary neurilemoma (schwannoma) of the trachea is a very rare neurogenic tumor. These tumors derive from Schwann cells and are slow-growing. Pang presented two cases of primary neurilemoma (schwannoma).[2] They occur most often in the third decade of life and may be seen in patients with neurofibromatosis type 2. Approximately 50 cases of pulmonary schwannoma have been reported in the Japanese literature. Kasahara and colleagues classify these tumors as central when they are located in the trachea, or proximal bronchus and peripheral when they cannot be reached or detected by bronchoscopy. The central type is then further subdivided into intraluminal or combined (both intra- and extra-luminal) types.[3] Our patient had a central type of endotracheal schwannoma. The standard treatment for endobronchial schwannoma is surgical resection. For patients who will tolerate it, bronchoscopic treatment with electrosurgical snaring or yttrium-aluminum-garnet (YAG) laser has been utilized in some cases.[4,5] This tumor usually has a broad base and complete removal by bronchoscopy would be difficult.

Complete resection should be confirmed pathologically to minimize the chance for local recurrence. For pedunculated and partially obstructing endobronchial tumors, tumors located in the trachea, or in patients with marginal cardiopulmonary function, bronchoscopic resection may represent a reasonable treatment option. This tumor can recur with malignant potential, and segmental tracheal resection is the treatment of choice. If it is malignant at initial diagnosis segmental resection with adjuvant radiation would be the treatment of choice.[6] Total positive margins are recorded as tumors that involve or approach to within 1 mm of either the radial or tracheal surgical margin. Our patient underwent segmental resection with free margins. At the one year follow-up he was in good condition.

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