

## Fibrosarcoma Arising from Pyriform Sinus

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*Fibrosarcoma is a rare malignant tumor in the larynx. It is quite different from epidermoid carcinoma seen most frequently in the larynx in the aspect of invasive behavior, metastatic route and treatment modality. This paper presents a case of pyriform sinus fibrosarcoma with a brief review of literature.*

**Key Words:** Fibrosarcoma, pyriforms sinus.

Fibrosarcoma is an uncommon malignant tumor in the head and neck. It as a category of soft tissue tumor accounts for less than 1 percent of all laryngeal cancer. Anatomical distribution of fibrosarcoma is: lower limb, trunk, and head and neck in order of frequency. In head and neck region, it accounts 15% of all fibrosarcoma and we see this tumor at soft tissue of face and neck, maxillary antrum, other paranasal sinus, and nasopharynx.

By 1969, 32 histologically recorded laryngeal fibrosarcoma had been reported. The majority arise from anterior part of the larynx such as anterior cords or commissure. But reported pyriform sinus fibrosarcoma is extremely rare. In the aspect of involvement site, invasive behavior, metastatic pattern, and treatment modality, it is defferent from epidermoid tumor. Recently we experienced a case of pyriform sinus fibrosarcoma, so we report our case with a brief review of literature.

### CASE HISTORY

A 23 years old male soldier was admitted to our hospital on Dec. 16, 1985 with complaints of

dysphagia and lump sensation in the throat. He didn't smoke or drink alcohol. There was no history of laryngeal trauma or radiation exposure. Indirect laryngoscopy demonstrated a white, smooth surfaced round mass in right pyriform sinus measuring 2cm in diameter and both true cords were normal in shape and mobility. There was no enlarged cervical lymph node. Laryngography showed well defined mass

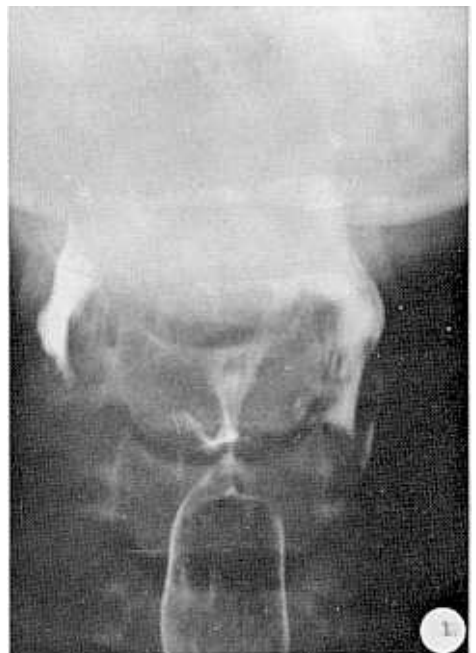


Fig. 1. Laryngography showing distorted filling defect of right pyriform sinus.

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Fig. 2. Esophagography showing esophageal deviation due to smooth extrinsic compression.

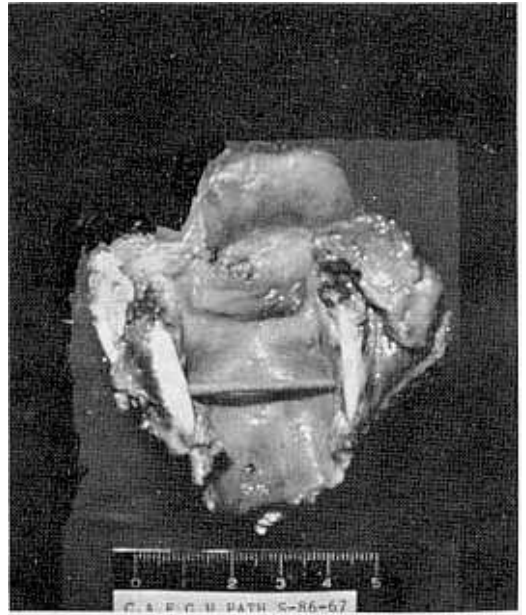


Fig. 3. Posterior view of the resected specimen showing tumor of the right pyriform sinus.

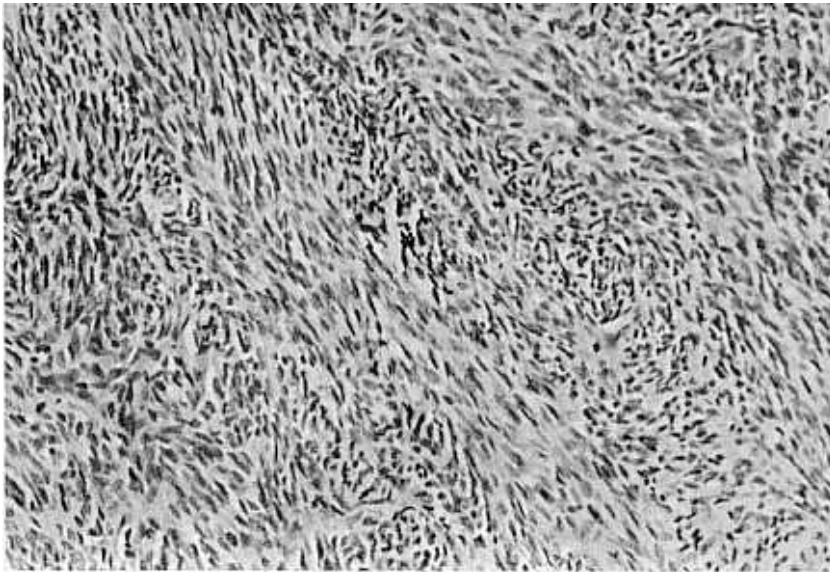
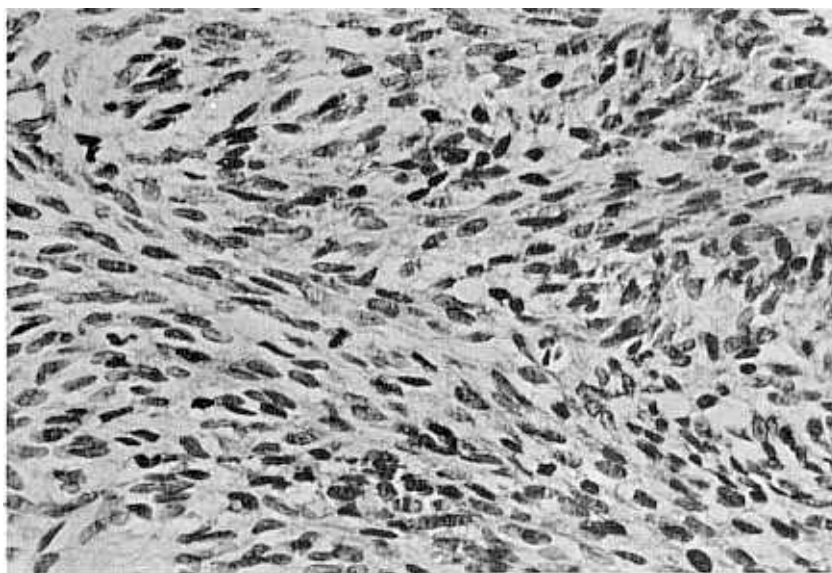


Fig. 4. Photomicrograph of the tumor shows spindle tumor cells arranged in typical "herring-bone" pattern (H-E,  $\times 100$ ).

shadow on the midline of supraglottic area and filling defect of right pyriform sinus (Fig. 1). Upper part of esophagus was deviated posteriorly due to diffuse, smooth, extrinsic compression (Fig. 2). There was no distant metastasis on lung and bones examined by the chest X-ray and whole body bone scan. Several days

after admission, this mass began to be necrotic and to bleed. So we performed lateral thyrotomy in emergency to control bleeding and to obtain specimen.

After tissue diagnosis was made, wide-field laryngectomy was done. Five months after surgery,



*Fig. 5. High power view of the tumor cells show coarse clumped nucleus with mitosis (H-E,  $\times 400$ ).*

perihilar lung metastasis was noted and recurrence was developed at right submandibular area.

## PATHOLOGIC FINDINGS

**Gross:** The resected specimen was a product of total laryngectomy. On opening through the posterior midline, the inner mucosa of the larynx was glistening and intact. There was a round tumor mass at the right pyriform sinus area measuring  $2 \times 2.5$  cm in size. Cut surface of the mass shows gray white tumor tissue with interspersed fresh hemorrhage due to previous surgery (Fig. 3)

**Microscopic:** The mucosa of the larynx including glottic, sub and supraglottic region showed well preserved stratified squamous epithelium without anaplasia and atypicality. The tumor tissue at the right pyriform sinus area showed spindle shaped tumor cells arranged in parallel bands forming typical "herring-bone" patterns (Fig. 4). The individual tumor cells showed spindle shaped nucleus with coarse clumped chromatin pattern and frequent mitotic figures (Fig. 5). Also noted was infiltrative growth of the tumor cells and fresh hemorrhage.

## DISCUSSION

Fibrosarcoma constitutes only 0.5% of all malignan-

cies and 5.5% of the malignant soft part sarcomas (Schwarz, 1968). The head and neck constitutes about 15% of all fibrosarcoma and the sites of origin, in order, are soft tissues of the head and neck; maxillary antrum; other paranasal sinuses; and nasopharynx. But larynx is uncommon (Batsakis, 1979).

Conley (1967) said that only 2 cases occurred in larynx among 84 fibrosarcoma in head and neck in his excellent review. The total frequency of supporting tissue neoplasm among laryngeal tumor does not exceed 2% (Batsakis, 1970). The majority of laryngeal fibrosarcoma occurs in the anterior cords or commissure, or both; others are found at the level of the cricoid cartilage or ventricle.

Approximately 70% of the patients were over 50 years of age, with male predominating in a ratio of 4:1. The majority present as nodular or pedunculated masses (Davies, 1969). Singh (1967) have quoted the following characteristics of sarcoma of the larynx. 1) They are most often primary in true cords. 2) Usually the tumor is pedunculated and lobulated. 3) Ulceration of the tumor's surface is not usual. 4) Laryngeal sarcomas tend to be more localized and less infiltrating than carcinomas. 5) Metastasis from laryngeal sarcomas longer delayed than from laryngeal carcinomas.

The recommended treatment of fibrosarcoma of larynx is radical en bloc excision (wide-field laryngectomy). Conley (1967) emphasized that local recurrences mean incomplete or inadequate primary resection. So it is mandatory that all of the tumor must

be removed at the first surgical intervention (Batsakis, 1979).

Histologically, fibrosarcomas are described as of a differentiated or undifferentiated character. Differentiated type manifests as an interwoven texture of differentiated cells and fibers. The cells appear uniform in size and shape. They are arranged in bands and bundles. Moderately differentiated fibrosarcomas are more cellular and present a "Herring-bone" pattern of their spindle cells. A differentiated fibrosarcoma infiltrates and recurs after removal, but only rarely spreads by metastasis. The undifferentiated type, in addition to locally aggressive, also metastasize frequently (Batsakis, 1979).

From a clinical stand point local recurrence is the main problem encountered in the management of fibrosarcoma, it has ranged from nearly 30 to 60% (Thompson, 1971). It has been stated that fibrosarcomas have highest rate of recurrence of all soft tissue sarcomas. Second problem is metastasis. Laryngeal fibrosarcomas rarely metastasize to cervical lymph nodes, and this tendency is shared by it in other foci. Spread is vascular and Conley (1967) reported an 18% incidence of hematogenous metastasis to lung, abdominal cavity and bone. Swain (1974) stated that in general because of paucity of node metastasis, prophylactic neck dissection is not indicated in the treatment of this disease.

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