

Non-Epidermoid Cancer of the Larynx

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NON-EPIDERMOID cancers of the larynx are uncommon lesions. At Memorial Hospital from 1940 to 1965, there were 31 of nearly 2,500 laryngeal cancers so classified (1%). Several features of non-epidermoid cancer of the larynx are characteristic and deserve mention since the diagnosis may be clinically suspected prior to biopsy.

Classification

The histologic classification of the 31 tumors is given in Table 1. Various forms of adenocarcinoma of minor salivary gland type represent the single largest group in this series, comprising 17 of the 31 cases. Five of these were further classified as either adenoid cystic carcinoma or mucoepidermoid carcinoma. The remaining 14 lesions are disparate histologically and difficult to describe as a group. A brief review of articles describing these sarcomas is given.

Clinical Features

The 17 patients with laryngeal adenocarcinomas ranged in age from 38 to 79 years with a median age of 62 years. Fifteen of the 17 patients were males. The presenting symptoms included hoarseness

(nine), pain (five), sensation of a throat mass (one), dysphagia (one) and the presence of a neck mass in one patient. Historically, these symptoms had been present from 3 weeks to 48 months prior to establishment of the diagnosis. On examination, 12 of the tumors were in the extrinsic larynx and five were in the intrinsic larynx. Seven patients had palpably enlarged cervical lymph nodes (Table 2). Similar features were noted in the group of sarcomas, although 12 of the 14 were clinically localized on initial examination. Characteristically, these tumors present minimal or no ulceration of the overlying mucosa.

Treatment and Results

The methods of treatment utilized are tabulated in Table 3. Fourteen of 17 patients with adenocarcinoma died with disease from 1 to 76 months following treatment. Eight of these deaths occurred within 25 months. Of the three remaining patients, one died, free of disease, in 9 months, and there is no evidence of disease in the other two, 120 months and 72 months, following treatment.

Survival figures are meaningless for such a heterogeneous small group as the sarcomas. Four of 14 patients were apparently cured, one lymphoma after radiation therapy, both chondrosarcomas and one rhabdomyosarcoma after partial or total laryngectomy.

The six patients surviving are listed with the form of original therapy in Table 4. Five are indeterminate, that is, living free of disease or dead without evidence of disease less than 5 years after treatment. All others, 20, are dead of disease.

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Pathology

Pathologic examination of the adenocarcinomas showed masses ranging from 1 to 4.5 cm. in greatest diameter. Some lesions were fungating and largely exophytic while others were non-ulcerating with prominent submucosal extension. Microscopic examination of the 12 adenocarcinomas—type not otherwise specified—showed similar histologic features. In these, the tumor was composed of moderate sized epithelial cells arranged in a poorly formed glandular pattern with varying amounts of intervening fibrous stroma (Fig. 1). The microscopic pictures of the adenoid cystic carcinomas and mucoepidermoid carcinomas (Fig. 2) were characteristic of these well known entities.

Case Report

E. O., a 57-year-old man, entered Memorial Hospital with a symptom of the sensation of food lodged in his throat. One month prior to admission, after swallowing a peach, the symptoms began. He was seen by two physicians, examined by indirect mirror laryngoscopy, and no abnormalities were seen. He specifically denied the use of alcohol or tobacco. Physical examination was remarkable only in that a bulky, non-ulcerated mass was seen filling the left pyriform sinus. No cervical adenopathy was found. On 10/14/59 total laryngectomy and left radical neck dissection were performed. Pathologic report was: "Minor salivary gland adenocarcinoma Grade II and III. Negative lymph nodes at all levels." At the most recent followup six years after operation, the patient was active and free of disease.

Discussion

New and Erich in 1941⁶ reported six cases of adenocarcinoma in 1,300 malignant laryngeal tumors at the Mayo Clinic. They described these as "usually of the mixed tumor type" and five of the six arose in the subglottic area. They also described one "pedunculated dark reddish tumor" which may have been a melanoma rather than adenocarcinoma. Two hundred and thirty-five cases of laryngeal cancer at New Haven Hospital were reported in 1953 by Kirchner and Malkin.² Five per cent, or

TABLE 1. *Non-Epidermoid Cancer of the Larynx*
1940-1965

Adenocarcinoma—minor salivary gland type	17
Adenocarcinoma—not otherwise specified	12
Adenoid cystic carcinoma	3
Mucoepidermoid carcinoma	2
Melanoma	4
Lymphoma	3
Rhabdomyosarcoma	3
Chondrosarcoma	2
Sarcoma	1
Plasmacytoma	1
	31

TABLE 2. *Non-Epidermoid Cancer of the Larynx*
1940-1965

	Adeno- carcinoma of Minor Salivary Gland	Various Sarcomas
Age		
Range	38 to 79 yrs.	45 to 87 yrs.
Median	62	58
Sex		
Males	15	11
Females	2	3
History		
No use of alcohol or cigarettes	5 of 17	
Symptoms		
Hoarseness	9	8
Sore throat pain	5	2
Dysphagia	1	1
Mass in throat	1	1
Mass in neck	1	0
Cough or hemoptysis	0	2
Location		
Extrinsic larynx	12	9
Intrinsic larynx	5	5
Appearance		
Non-ulcerated, pedunculated Pigmented, or "atypical"	4	7
Clinical extent of disease		
Localized	9	12
Cervical lymph nodes	7	2
Distant metastases	1	0
Survival		
5 years \bar{c} disease "Cure"	2 2	1 4

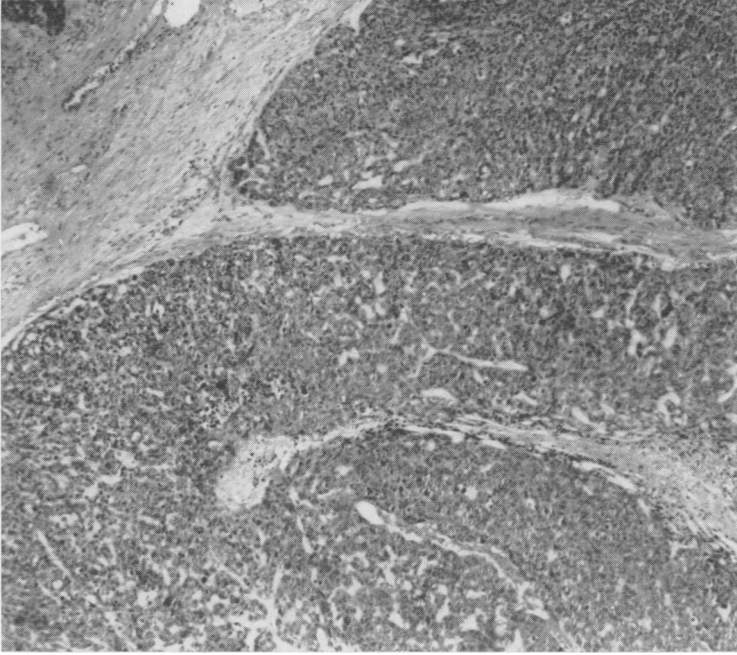


FIG. 1. Adenocarcinoma-minor salivary gland type. Hematoxylin and Eosin 63X.

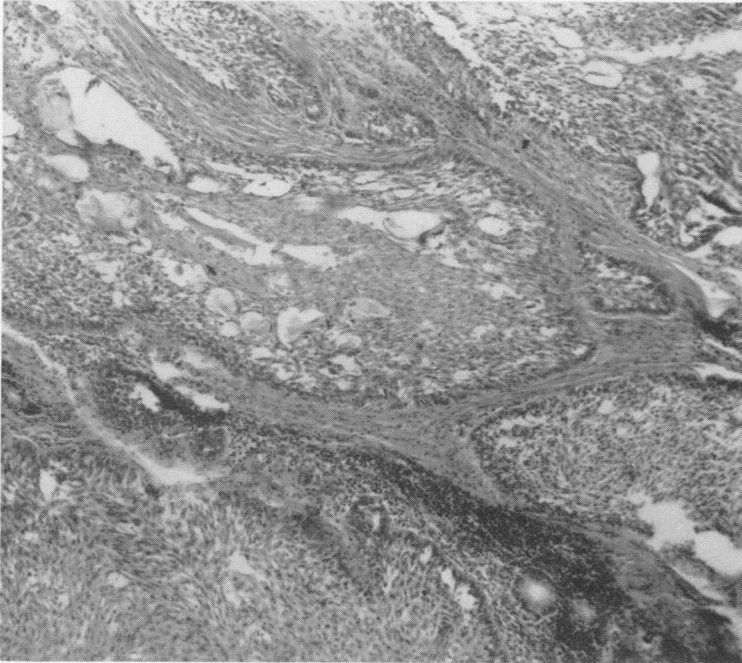


FIG. 2. Mucoepidermoid cancer. Hematoxylin and Eosin 63X.

13 cases, were non-epidermoid. Histologic types were not specified. They pointed out, however, that five of the 13 were in women. Thus, in their series, 27% of women with laryngeal cancer had non-epidermoid lesions. This was true in only 4% of men.

McDonald⁵ reported 339 cases of salivary gland cancers of the head and neck from Mayo Clinic in 1948. Only five were in the larynx, two adenoid cystic carcinomas, two malignant mixed tumors, and one adenocarcinoma.

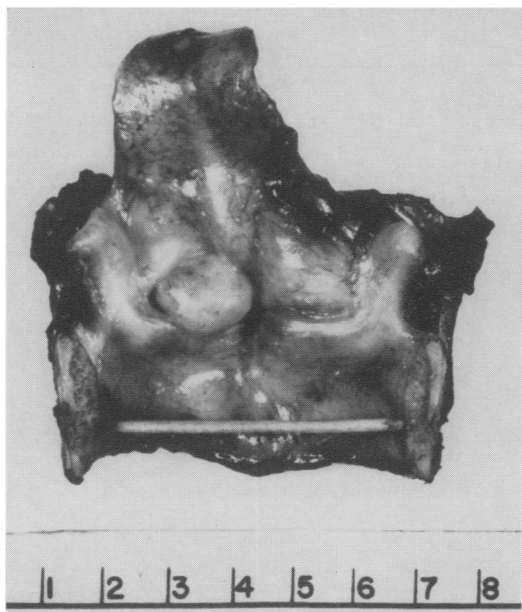


FIG. 3. Rhabdomyosarcoma of intrinsic larynx.

Rosenfeld *et al.*¹⁰ reviewed 184 cancers of salivary gland origin and found only three originating in the larynx, all were adenoid cystic carcinomas.

Smith *et al.*,¹¹ and Soboroff¹² recently reported a series of adenoid cystic cancers of the upper respiratory tract.

Sarcomas of the larynx were reviewed by Krotz and Ritterhoff⁸ in 1961. They found 45 cases of which one-half were labelled fibrosarcomas. Lymphosarcoma was reported 3 times and rhabdomyosarcoma twice. A plasmacytoma was also recorded. One-third of the patients were women. Orton in 1938⁷ reported 102 cases of laryngeal cancer of which one was myxosarcoma, one melanoma and four "basal cell carcinomas."

Putney and Moran⁹ reported two cases of chondrosarcoma of the larynx. Both arose from the cricoid cartilage. They pointed out the clinically benign course of these histologically malignant lesions. Review of the literature disclosed no instances of metastasis, although a tendency for local recurrence was notable.⁴

Pantazopoulos⁸ reviewed the literature

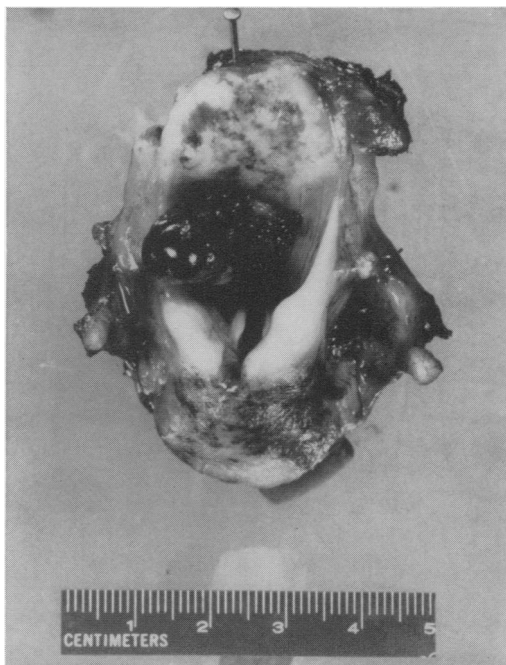


FIG. 4. Malignant melanoma with melanosis of intrinsic larynx.

in 1964 and found only seven primary malignant melanomas of the larynx.

Bergstedt¹ described a case of solitary metastasis to the larynx from a renal cell carcinoma, the primary previously being undiagnosed. This rare situation was reported on other occasions for various cancers.

Conclusions

Accurate biopsy diagnosis is essential, since radiation should play no part in the initial management of non-epidermoid cancer of the larynx with the exception of lymphosarcomas. Standard surgical treatment should be total laryngectomy. However, for minor salivary gland adenocarcinoma, radical neck dissection should be included on the side of primary involvement for all stages of disease. The rationale for this proposal is that of 17 cases eight initially with clinical cervical lymph node metastases on one or both sides and of the nine with clinically negative cervical lymph nodes prior to operation, five later de-

TABLE 3. *Non-Epidermoid Cancer of the Larynx*
1940-1965

Primary treatment	
Total laryngectomy	12
Total laryngectomy with radical neck dissection	6
Adenocarcinoma	5
Synovial-like sarcoma	1
Radiation	
Adenoid cystic carcinoma	2
Mucoepidermoid carcinoma	1
Lymphoma	2
Plasmacytoma	1
Partial laryngectomy	
Melanoma	1
Lymphoma	1
Chondrosarcoma	1
Partial laryngectomy + radical neck dissection	
Adenocarcinoma	2
Melanoma	1
Total laryngectomy with bilateral neck dissection	
Adenocarcinoma	1

veloped metastases. Thus, 13 of 17 patients developed cervical lymph node metastases.

The three patients with melanomas followed for more than 1 year also developed neck metastases. No other pathologic types developed cervical metastases.

Summary

A group of 31 cases of non-epidermoid cancer of the larynx is described. This is the largest collection of such uncommon and varied lesions. It is noteworthy for containing such a large number of salivary gland cancers.

The prognosis is poor in the pathologic types described and generally corresponds to the prognosis of similar histologic types found in other anatomic areas. Aggressive surgical management of minor salivary gland cancers in the larynx is recommended to improve survival. Total laryngectomy with radical neck dissection on the side of the primary lesion should be strongly considered even for small lesions.

TABLE 4. *Non-Epidermoid Cancer of the Larynx*
1940-1965

Cures	
Minor salivary gland adenocarcinoma	Total laryngectomy and neck dissection; nodes negative
Mucoepidermoid carcinoma	Total laryngectomy
Lymphoma	Radiation therapy
Chondrosarcoma	Total laryngectomy
Chondrosarcoma	Partial laryngectomy
Rhabdomyosarcoma	Total laryngectomy
Survived 5 years but dead of disease	
Minor salivary gland adenocarcinoma	Total laryngectomy and neck dissection; nodes negative
Adenoid cystic carcinoma	Radiation therapy
Melanoma	Partial laryngectomy

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