

Spindle cell carcinoma: Two instances mistaken for vocal polyps

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1. Introduction

Spindle cell carcinoma is a variant of squamous carcinoma, with behavior that is apparently more aggressive than that of squamous carcinoma and that can produce distant lymphatic metastasis.

It was first described by Virchow in 1864 [1], but the origin of the tumor is still not clear. The tumor is biphasic, with an epidermal component and a sarcomatous component involving spindle cells; transition zones between these components can be found [2–5]. In part due to this peculiar and complex nature, the tumor has accumulated various names since it was first described: sarcomatoid tumor, carcinosarcoma, pleomorphic carcinoma, collision tumor, etc. [2,5,6].

1.1. Clinical case 1

Case 1 concerns a 67-year-old man who came to our otolaryngology department with dysphonia that had started six months previously. The dysphonia was not accompanied by any other symptoms. The patient had already been evaluated by various specialists, who had indicated a range of treatments: resting the voice, corticosteroids, inhalations, etc., which had not resulted in any significant improvement.

The patient had previously been a smoker (approximately 20 cigarettes a day). He was not a habitual drinker of alcohol.

Endoscopic exploration revealed a polyp-like lesion on the mid-anterior third of the right vocal fold. Also, there was slight edema of the vocal folds and signs of chronic laryngitis, suggestive of pharyngolaryngeal disease resulting from gastroesophageal reflux. Extirpation

of the polypoid lesion was proposed.

The lesion was extirpated during direct laryngoscopy with orotracheal intubation and general anesthesia. The report of the histopathological study concluded that the lesion was epithelial hyperplasia and hyperkeratosis in association with a chronic ulcer.

The patient was followed up with programmed check-ups, and 18 months later a similar lesion to the original one was observed. The patient underwent endolaryngeal microsurgery for a second time. The histopathological determination was that the resected piece was granulation tissue of the vocal fold.

The patient continued having periodic check-ups, every three months. Initially, he progressed well, but after a few months his voice began to deteriorate, and the polyp-like lesion was again found on the anterior third of the right vocal fold (Fig. 1).

Further endolaryngeal microsurgery was proposed, and this was carried out five months after the previous surgery. This time the anatomic pathologist observed that the mucosa was ulcerated and partially coated with flat non-keratinizing stratified epithelium. The resected piece was described as being an ulcerated tumoral growth with the appearance of a polyp comprised of spindle cells with intense basophilic cytoplasm and oval, hyperchromatic nuclei. The tumor was noticeably vascularized. The growth contained other areas in which there were rounded cells with intense basophilic cytoplasm. In the epithelium adjacent to the ulcerated area, cells were focally organized in an atypical manner across the whole thickness of the epithelium; this disorganized proliferation was comprised of cells with large, hyperchromatic nuclei. Immunohistochemically, the spindle-cell component

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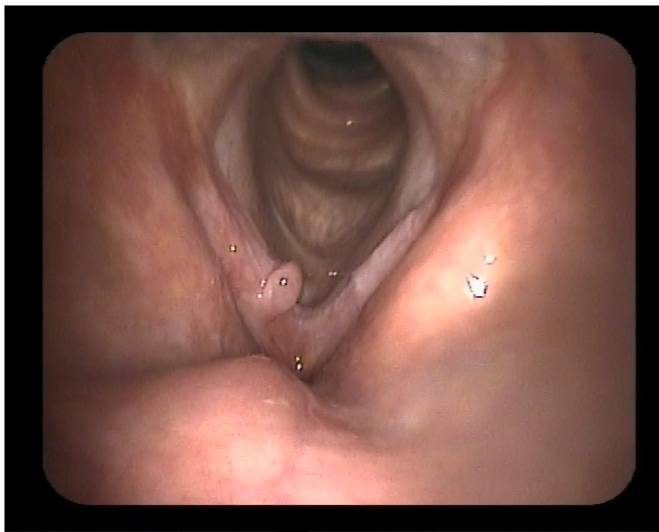


Fig. 1. Image of the videoendoscopy. A polyp-like lesion is seen in the anterior third of the right vocal cord.

of the tumor was strongly positive for vimentin and cytokeratin 3/12 (Fig. 2) but negative with all other antibodies tested (for immunohistochemical markers AE1/AE3, CAM 5.2, cytokeratin 5/6, cytokeratin 3/2, high molecular weight cytokeratin, EMA, desmin, Melan-A and p63).

The definitive diagnosis was spindle cell carcinoma.

Six years have now passed since the third resection. The patient attends periodic check-ups, every three months for the first two years and every six months after the second year, and there has been no further recurrence of the lesion.

1.2. Clinical case 2

Case 2 is of a woman of 64 years of age who came to our otolaryngology department because she had been suffering from severe dysphonia, pyrosis and pain in her throat. Nasopharyngolaryngeal video endoscopy revealed a polyp-like lesion on the middle of the left vocal fold. There was also a small granuloma on the posterior part of the left vocal fold (Fig. 3).

Two months later, the polyp-like lesion was extirpated by endolaryngeal microsurgery. The histopathological diagnosis was spindle cell carcinoma and vocal fold ulceration. Immunohistochemically, the atypical stromal component of the resected tissue was positive for vimentin and cytokeratin 3/12 (Fig. 2).

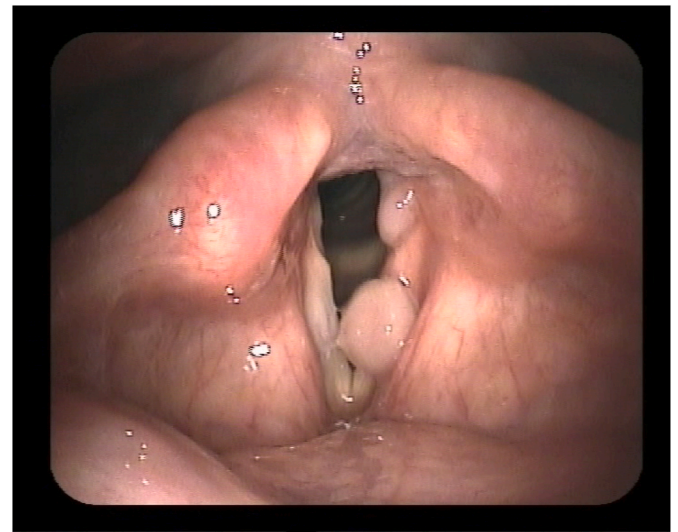


Fig. 3. Image of the videoendoscopy. A polyp-like lesion is seen in the middle third of the left vocal cord. A small granuloma is also observed in the posterior part of the left vocal cord.

Since undergoing surgery five years ago, the patient has attended periodic check-ups, in the same way as in the previous case, and there has been no recurrence of the lesion.

2. Discussion

Spindle cell carcinoma appears most frequently in men in their fifties and sixties, the most important risk factors being, as with squamous carcinoma, smoking and alcohol consumption [11–13]. It is a tumor that appears in the upper aerodigestive tract, and in almost half of cases the tumor is located on the larynx [2,12,14], especially in the glottic region, particularly on the anterior commissure but also on the supraglottis [6]. Spindle cell carcinoma accounts for 2% of laryngeal cancers [12]. [15] [16].

In most cases, at the time of diagnosis, the tumor is staged as T1 or stage 1 and produces symptoms such as a hoarse voice (most frequent), changes in the voice, dyspnea, dysphagia, odynophagia, cough, and also respiratory alterations during sleep [15] [12].

As previously mentioned, spindle cell carcinoma is complex in nature, and no clear cause of its origin is known. In the specialist literature there are various theories, such as, that it is based on a malignant reaction towards an adjacent epidermoid carcinoma, that it develops from

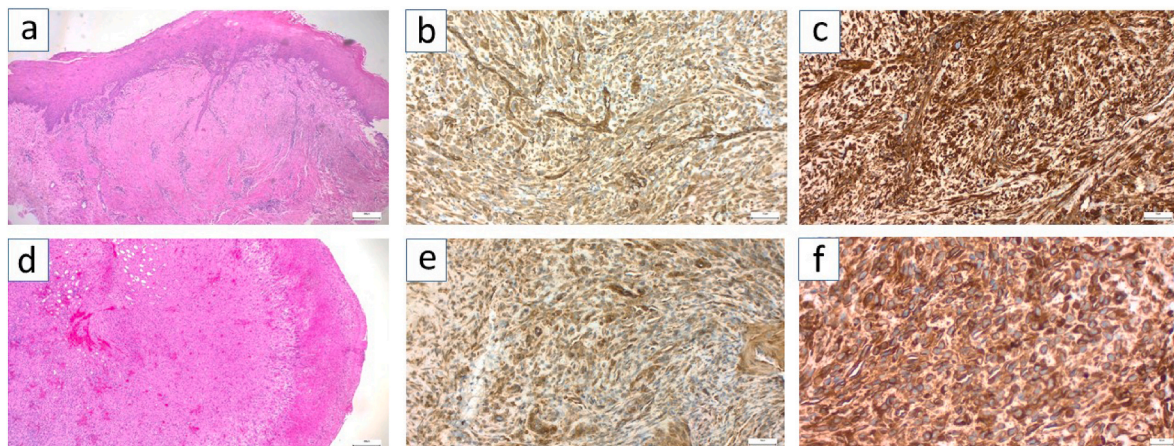


Fig. 2. Histological and immunohistochemical characteristics of the lesions. The images in the upper row correspond to case 1 and the lower ones to case 2. (a & d: Hematoxylin-Eosin); (b & e: Cytokeratin 3/12); (c & f: Vimentin).

the remains of embryonic epithelial and mesenchymal tissue, and that is a true sarcoma that arises from an epithelial cell that has lost its ability to express keratin [4,7–10]. The most-accepted theory suggests that the origin of the carcinoma is epithelial, and that there is transformation from epidermoid carcinoma to spindle cell carcinoma and *vice versa* [3,5,10].

Macroscopically, the tumour looks like a polyp. Microscopically, there is a mesenchymal spindle-cell component and another component comprising squamous-cells with dysplasia, carcinoma *in situ* or invasive carcinoma [2,11].

It is important to take these characteristics into account when applying diagnostic techniques because superficial biopsies or a partial biopsy from just one part of the lesion can give rise to errors as a result of missing one of the components of the tumoral tissue [2].

Due to its biphasic character, diagnosis requires immunohistochemical methods. By means of these methods, it can be established whether the majority of the epidermal cells of the tumor are positive for cytokeratin and the majority of spindle cells are positive for vimentin, although spindle cells may also be positive for cytokeratin [2–4,12].

Spindle cell carcinoma is more aggressive than squamous carcinoma: the rate of recurrence is high and there is a greater tendency towards distant lymphatic metastasis [3–5,17–19].

Factors indicative of a good prognosis include low tumoral stage at diagnosis, the tumor having a polyp-like appearance, the tumor being located in the glottic region, presence of spindle cells on the surface of the tumor, and the patient not having been previously exposed to radiation [11].

With regard to disease management, as a result of the histological and clinical variability, there is little consensus on the best treatment. Tumor location and stage are the two most important factors to take into account when planning management [12,20]. Surgery seems to be more successful than radiotherapy [2] [18].

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