# **BASALOID SQUAMOUS CELL CARCINOMA OF THE LARYNX: A CASE** REPORT

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Basaloid squamous cell carcinoma is a highly aggressive tumor. The aim of this study was to present a case of a 60 year-old man having progressive hoarseness that lasted for six months. Indirect laryngoscopy and histopathologic examination detected an exophytic growth that involved the left false vocal fold. The patient underwent a leftsided, vertical partial hemilaryngectomy. Patient had no signs of tumor recurrence or metastases eighteen months later. Acta Medica Medianae 2013;52(1):39-42.

Key words: basaloid squamous cell carcinoma, larynx, laryngectomy

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### Introduction

Squamous cell carcinoma is the commonest tumor of larynx, accounting for about 99% of laryngeal malignancies. Wain et al. in 1986 described 10 cases of basaloid squamous cell carcinoma of the head and neck, hypopharynx and larynx (1). Basaloid squamous cell carcinoma is a histologically distinctive, rare, highly aggressive variant of squamous cell carcinoma. It is aggressive tumor composed of both basaloid and squamous components with a high mitotic index. This malignancy has a predilection for the upper aerodigestive tract, and the most common sites are larynx, hypopharynx, and the base of the tongue (2). The most frequent site of occurrence in the larynx is the supraglottis. Other sites include the floor of the mouth, tonsils, nasal cavity, paranasal sinuses, nasopharynx, palate, buccal mucosa, esophagus, and trachea (3). Histologically identical tumors have been recognized at the anus (4), cervix uteri (5), penis (6) and urinary bladder (7). This malignancy generally affects elderly men in the sixth and seventh decades of life who are smokers and/or alcoholics (3). The clinical presentation is similar to other laryngeal carcinomas. Loco-regional metastases are reported in 64% of patients (8) and disseminated spread (lungs, liver, bone, brain and skin) in 22% of cases (9). Treatment options are radical surgery,

chemoradiation or radiation alone. As far we know, very few cases of early stage basaloid squamous cell carcinoma have been described in the literature. The aim of this study was to present a case of early basaloid squamous cell carcinoma of the larynx.

### **Case report**

A 60 year-old man presented with progressive hoarseness that lasted for six months. There were no complaints of difficulty in breathing or taking food. He had a long history of cigarette smoking (30-40 cigarettes/day) and alcohol consumption (100-150 g/day). Medical history was negative. Indirect laryngoscopy detected the presence of an ulceroexophytic growth that involved the left false vocal fold with preserved vocal cords mobility. The right endo-larynx was healthy and the vocal fold mobile. On physical examination, the patient was without a palpable neck mass or lymphadenopathy. A computed tomography (CT) scan of neck and thorax was negative. The patient underwent direct microlaryngoscopy under general anesthesia and the biopsy specimen was taken. Histopathologic examination identified the mass as a basaloid squamous cell carcinoma (Figure 1). Clinical stage: T1N0M0. The patient underwent a left-sided, vertical partial hemilaryngectomy. The surgical margins were free of tumor. After a follow-up period of 18 months the patient had no signs of tumor recurrence or metastases as confirmed by laryngeal endoscopy and CT scan.

### Discussion

Squamous cell carcinoma is the commonest tumor of larynx, however, verrucous, spindle cell and basaloid subtypes are very rare. The term

basaloid squamous cell carcinoma was first used by Wain et al. in their report of 10 cases that had occurred in the tongue, hypopharynx and larynx (1). Thankappan found 36 publications and analyzed 100 cases related to the larynx (9). Basaloid squamous cell carcinoma makes up less than 1% of laryngeal carcinoma.



*Figure 1. Light microscopy revealed an invasive basaloid squamous cell carcinoma. (Hematoxylin-eosin stain, original magnification 100x)* 

Basaloid squamous cell carcinoma arises from the surface epithelium and it is often deeply invasive due to infiltrative growth. This feature makes that the tumor borders are indiscreet. Basaloid squamous cell carcinoma originates from totipotential cells in the basal layer of squamous epithelia and is composed of both basaloid and squamous components (1,10). Basaloid component includes pleomorphic basaloid cells with hypercromatic nuclei and scant cytoplasm, nuclear palisading at the periphery, necrosis, prominent hyalinisation. Squamous component includes at least one of the following features: adjacent foci of conventional squamous cell carcinoma, dysplasia or carcinoma in situ of the overlying mucosa, or focal squamous differentiation within a basaloid component.

Basaloid squamous cell carcinoma expresses cytokeratins and a monoclonal epithelial membrane antigen (EMA); however, there is no specific immunohistochemical pattern to distinguish this tumor from others. However, immunohistochemical markers have been reported to be useful in differentiating these tumors. Coletta et al. have demonstrated the importance of cytokeratins 1, 7 and 14 in the diagnosis of basaloid squamous cell carcinoma and have shown significantly higher AgNOR and PCNA positivity when compared with squamous cell carcinoma (11). Basaloid squamous cell carcinomas are usually negative for neuroendocrine markers such as chromogranin, synaptophysin and CD56, although S-100 protein may be weakly positive in some cases. The tumor is most likely to be confused with adenoid cystic carcinoma and small-cell undifferentiated carcinoma. Emanuel et

al. have found that p63 positivity is partial in adenoid cystic carcinoma but diffuse in basaloid squamous cell carcinoma (12).

To the best of our knowledge only few studies have investigated the use of oncogenic markers as prognostic factors in laryngeal basaloid squamous cell carcinoma. Salerno et al. found the clinical prognostic relevance of p27kip1 low expression, which directly correlated with biological aggressiveness and consequent shortened survival (13). Rodriguez Tojo et al. found that Ecadherin was down regulated in all 11 cases and the lower expression of Ki67/Mib-1 and p53 was related to the better prognosis (14). In contrast, there was no significant correlation of the levels of Ki67/Mib-1 and P53 status with the clinical findings in two small series of BSCC of the larynx (15, 16). Marioni et al. did not find any significant differences in the expression of endoglin (CD105) in the head and neck BSCCs and SCCs (17). These findings need further confirmation in large series and its acceptance and use in daily practice.

The median age of patients with basaloid squamous cell carcinoma is 62 years with a range of 35-85 years with strong male predominance (96%) (9). The supraglottic location of the tumor is predominant and can delay the diagnosis (18). Our patient was 60 years old man with a supraglottic tumor. The clinical presentation is similar to the squamous cell carcinoma i.e. hoarseness and increasing difficulty in breathing followed by difficulty in taking food. It is characterized by a high incidence of early regional metastasis with 45.9% nodal involvement at presentation (9). Winzenburg et al. showed survival of basaloid squamous cell carcinoma with lymph node metastases of 18.6 months and significantly longer (47.6 months) without regional metastases (19).

The absence of metastasis to the cervical lymph nodes cannot be considered to be a favorable prognostic sign because the tumor might have already spread to distant sites. Twenty-two percent of patients develop distant metastases to the lungs, liver, bones, brain, and skin and the lung is the predominant site (9). Therefore, some authors recommend an extensive work-up, including a chest CT and FDG-PET in all cases to rule out early distant metastasis. In our case, the patient showed no clinical or radiographic evidence of lung metastasis. Seidman et al. and Ferlito et.al. found that patients with basaloid squamous cell carcinoma have the high risk for the development of second primary tumors in the upper aerodigestive tract (20, 21). Kunkel et al. demonstrated that FDG-PET was useful in the following patients with basaloid squamous cell carcinoma and able to detect clinically and radiologically invisible recurrence of disease (22). The global prognosis of this type of tumor tends to be poor due to their presentation in advanced stages. Basaloid squamous cell carcinoma is a highly aggressive tumor with the overall five-year survival rate as 47.5% (9).

There is no established consensus for treatment. Treatment consists of radical surgery, radiotherapy, or both, with or without chemotherapy. According to literature, total laryngectomy is the commonest surgery reported. When diagnosed at an early stage, partial surgery can be used. In our case, the patient was treated only with surgery because all of the surgical margins were tumorfree and some of previous studies stressed that an early stage of tumor can be treated more conservatively. Our patient did not receive additional radiotherapy due to their initial stage without lymph node affectation. Erdamar et al. suggest regimens incorporating radiotherapy and chemotherapy taking into consideration the high risk of regional and distant metastasis and tendency for the development of second primary tumors (23).

### Conclusion

Basaloid squamous cell carcinoma is a distinct clinicopathological entity with aggressive clinical behavior. Basaloid squamous cell carcinoma preferentially occurs in the head and neck region. Very often, it is diagnosed at advanced clinical stages and has an unfavorable prognosis because of poor overall patient survival rate. The generally recommended treatment options for basaloid squamous cell carcinoma of larynx include complete surgical excision supplemented with radiotherapy. A larger number of patients must be studied to provide the best possible evidence and recommend the appropriate treatment.

### References

- Wain SL, Kier R, Vollmer RT, Bossen EH. Basaloidsquamous carcinoma of the tongue, hypopharynx, and larynx: Report of 10 cases. Hum Pathol 1986; 17:1158-66. [CrossRef]
- Morice WG, Ferreiro JA. Distinction of basaloid squamous cell carcinoma from adenoid cystic and small cell undifferentiated carcinoma by immuno histochemistry. Hum Pathol 1998;29:609-12. [CrossRef]
- Barnes L, Ferlito A, Altavilla G, MacMillan C, Rinaldo A, Doglioni C. Basaloid squamous cell carcinoma of the head and neck: Clinicopathological features and differential diagnosis. Ann Otol Rhinol Laryngol 1996;105:75-82.[PubMed]
- Chetty R, Serra S, Hsieh E. Basaloid squamous carcinoma of the anal canal with and adenoid cystic pattern. Histologic and immunohistochemical reappraisal of an unusual variant. Am J Surg Pathol 2005; 29:1668–72. [CrossRef][PubMed]
- Brainard J, Hart W. Adenoid basal epitheliomas of the uterine cervix: a reevaluation of distinctive cervical basaloid lesions currently classified as adenoid basal carcinoma and adenoid basal hyperplasia. Am J Surg Pathol 1998;22:965–75. [CrossRef][PubMed]
- Cubilla AL, Reuter VE, Gregoire L, Ayala G, Ocampos S, Lancaster WD, et al. Basaloid squamous cell carcinoma: distinctive human papillomavirus related penile neoplasm. A report of 20 cases. Am J Surg Pathol 1998;22:755–61. [CrossRef][PubMed]
- Vakar-Lo´pez F, Abrams J. Basaloid squamous cell carcinoma occurring in the urinary bladder. Arch Pathol Lab Med 2000;124:455–9.
- Sheen Ts, Chang Y, Ko J, Wu Ct, Lee Sy. Basaloid squamous cell carcinoma of the larynx. Otolaryngol Head Neck Surg 1999;121:647-50. [CrossRef]
- Thankappan K. Basaloid squamous cell carcinoma of the larynx- A systematic review. Auris Nasus Larynx 2012;39(4):397-401. [CrossRef][PubMed]
- Khaldi L, Apostolidis TCh, Pappa DA, Apostolidis MT, Apostolidis TI. Basaloid squamous carcinoma of the larynx. A potential diagnostic pitfall. Ann Diagn Pathol 2006;10:297-300. [CrossRef][PubMed]
- 11. Coletta RD, Almeida OP, Vargas PA. Cytokeratins 1, 7 and 14 immunoexpression are helpful in the

diagnosis of basaloid squamous cell carcinoma. Histopathology 2006;48:773–4. [CrossRef][PubMed]

- 12. Emanuel P, Wang B, Wu M, Burstein DE. p63 immunohistochemistry in the distinction of adenoid cystic carcinoma from basaloid squamous cell carcinoma. Mod Pathol 2005;18:645–50. [CrossRef] [PubMed]
- Salerno G, Di Vizio D, Staibano S, Mottola G, Quaremba G, Mascolo M, et al. Prognostic value of p27Kip1 expression in Basaloid Squamous Cell Carcinoma of the larynx. BMC Cancer 2006;6:146. [CrossRef] [PubMed]
- 14. Rodriguez Tojo MJ, Garcia Cano FJ, Infante Sanchez JC, Velazquez Fernandez E, Aguirre Urizar JM. Immunoexpression of p53, Ki-67 and E-cadherin in basaloid squamous cell carcinoma of the larynx. Clin Transl Oncol 2005;7:110-4. [CrossRef][PubMed]
- 15. Tsubochi H, Suzuki T, Suzuki S, Ohashi Y, Ishibashi S, Moriya T, et al. Immunohistochemical study of basaloid squamous cell carcinoma, adenoid cystic and mucoepidermoid carcinoma in the upper aerodigestive tract. Anticancer Research 2000;20: 1205-11. [PubMed]
- 16. Akyol MU, Dursun A, Akyol G, Edaliota N. Proliferating cell nuclear antigen immunoreactivity and the presence of p53 mutation in basaloid squamous cell carcinoma of the larynx. Oncology 1998;55:382-3. [CrossRef][PubMed]
- 17. Marioni G, Gaio E, Giacomelli L, Marchese-Ragona R, Staffieri C, Staffieri A, et al. Endoglin (CD105) expression in head and neck basaloid squamous cell carcinoma. Acta Otolaryngol 2005;125:307-11. [CrossRef][PubMed]
- 18. Ereño C, Gaafar A, Garmendia M, Etxezarraga C, Bilbao FJ, López JI. Basaloid squamous cell carcinoma of the head and neck: a clinicopatho logical and follow-up study of 40 cases and review of the literature. Head Neck Pathol 2008;2(2):83-91. [CrossRef][PubMed]
- Winzenburg SM, Niehans GA, George E, Daly K, Adams GL. Basaloid squamous carcinoma: a clinical comparison of two histologic types with poorly differentiated squamous cell carcinoma. Otolaryngol Head Neck Surg 1998;119:471–5. [CrossRef]

- Seidman JD, Berman JJ, Yost BA, Iseri OA. Basaloid squamous carcinoma of the hypopharynx and larynx associated with second primary tumors. Cancer 1991; 66:1545-9. [CrossRef]
- 21. Ferlito A, Altavilla G, Rinaldo A, Doglioni C. Basaloid squamous cell carcinoma of the larynx and hypo pharynx. Ann Otol Rhinol Laryngol 1997;106:1024-35. [PubMed]
- 22. Kunkel M, Helisch A, Reichert TE, Bartenstein P, Wagner W. Surveillance of basaloid oral squamous cell carcinoma: the value of [18F]FDG-PET. Oral Oncol 2004;40:56-62. [CrossRef]
- 23. Erdamar B, Suoglu Y, Sirin M, Karatay C, Katircioglu S, Kiyak E.. Basaloid squamous cell carcinoma of the supraglottic larynx. Eur Arch Otorhinolaryngol 2000;257:154-7. [CrossRef][PubMed]

# BAZALOIDNI SKVAMOCELULARNI KARCINOM LARINKSA: PRIKAZ BOLESNIKA

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Bazaloidni skvamocelularni karcinom je vrlo agresivan tumor. Cilj ovog rada bio je da prikažemo bolesnika muškog pola, starog 60 godina, koji se javio zbog progredirajuće promuklosti koja je trajala oko 6 mjeseci. Indirektnom laringoskopijom i patohistološkim pregledom potvrđeno je prisustvo egzofitičnog tumora na lijevom ventrikularnom naboru. Kod bolesnika je urađena lijeva vertikalna hemilaringektomija. Nakon 18 mjeseci od završenog liječenja, bolesnik je bez znakova za postojanje recidiva bolesti i bez udaljenih metastaza. *Acta Medica Medianae 2013;52(1):39-42.* 

Ključne reči: karcinom larinksa, bazaloidni tip, laringektomija