

CASE REPORT

# Basaloid squamous cell carcinoma of the larynx: report of a early laryngeal cancer

*Carcinoma squamocellulare basaloide della laringe: case report di uno stadio precoce*

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## SUMMARY

Basaloid squamous cell carcinoma is a recently recognized, rare and aggressive variant of squamous cell carcinoma with a predilection to occur in base of the tongue, hypopharynx and larynx (especially the supraglottic tract). It is usually diagnosed in advanced stage, frequently with distant metastases, requiring aggressive surgical intervention. The prognosis is remarkably poor even after the association of radiotherapy or chemotherapy. Nevertheless recently it has been reported that in the early stage this neoplasm seems to have a behaviour less aggressive, similar to conventional squamous carcinoma. The therapeutic approach is not clearly defined when the neoplasm is diagnosed at an early stage. We present a case of early stage of basaloid squamous cell carcinoma of the supraglottic larynx.

KEY WORDS: Laryngeal tumours • Supraglottic larynx • Basaloid squamous cell carcinoma • Radiotherapy

## RIASSUNTO

*Il carcinoma squamoso basaloide è una variante, recentemente codificata, rara ed aggressiva del carcinoma a cellule squamose con localizzazione preferenziale a livello della base lingua, ipofaringe e laringe (in particolar modo la porzione sovraglottica). Nella maggior parte dei casi è diagnosticato in stadi avanzati, frequentemente con presenza di metastasi a distanza, che richiedono interventi chirurgici demolitivi. La prognosi è solitamente infastidita anche dopo associazione di terapia chirurgica e radioterapica. Recentemente, tuttavia, secondo vari studi tale neoplasia negli stadi iniziali sembra avere un comportamento meno aggressivo, simile a quello del carcinoma squamocellulare classico. In tali stadi precoci l'approccio terapeutico non è ancora chiaramente definito. Presentiamo la nostra esperienza in un caso di carcinoma basaloide del laringe ad uno stadio iniziale*

PAROLE CHIAVE: Tumori della laringe • Sopraglottide • Carcinoma squamoso basaloide • Radioterapia

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## Introduction

Basaloid squamous cell carcinoma (BSCC) is a high-grade variant of squamous cell carcinoma (SCC), with a frequent localization in head and neck. The most frequent sites of occurrence in the upper aero-digestive tract are oropharynx (base of tongue), hypopharynx (pyriform sinus) and supraglottic larynx<sup>1-4</sup>.

Although BSCC has predilection for cervico-facial region, it can also occur at other sites such as oesophagus, lung, thymus, anus and cervix uteri<sup>5-9</sup>.

Wain et al. recognized the BSCC as a separate variant of SCC in 1986 and since then only few tens of cases of laryngeal localizations have been reported<sup>10</sup>.

It affects mainly men in sixth or seventh decade of life, with frequent cervical node metastases at presentation<sup>11,12</sup>.

The clinical presentation is similar to other laryngeal carcinomas, but especially in supraglottic localizations the

diagnosis is of advanced laryngeal cancer classified by American Joint Committee<sup>8,13,14</sup>.

Metastases in loco-regional nodes are reported in 64% of patients and disseminated spread (lung, liver, bone, brain and skin) in 44% of cases<sup>3</sup>.

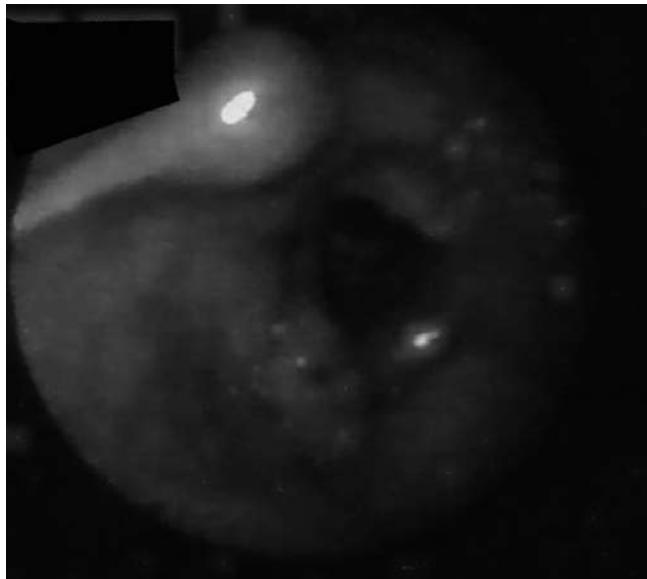
The diagnosis is often delayed so that reasonable treatment options are radical surgery, chemoradiation or radiation alone (5 years survival is reported to be 17.5%)<sup>13,14</sup>.

In early BSCC the neoplasm appears to have a behaviour less aggressive similar to conventional SCC<sup>15,16</sup>.

We would like to report a case of T1 stage BSCC of the supraglottic larynx.

## Case report

S.L., a 50 year-old woman, presented to our ENT department complaining a moderate hoarseness. She was a moder-

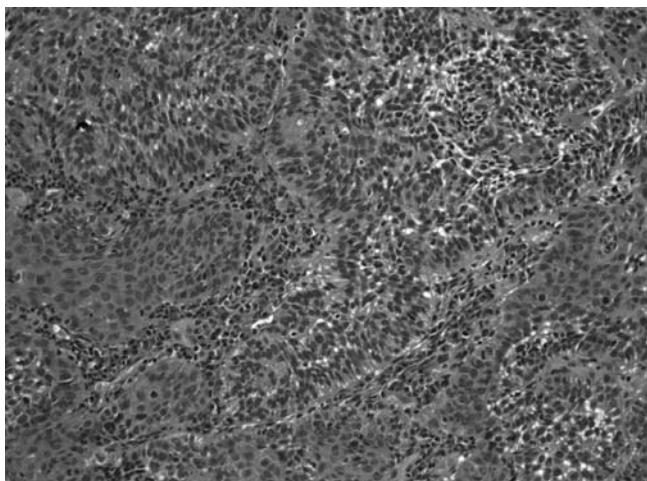


**Fig. 1.** Videolaryngoscopy image showing a polypoid mass of the right false vocal fold.

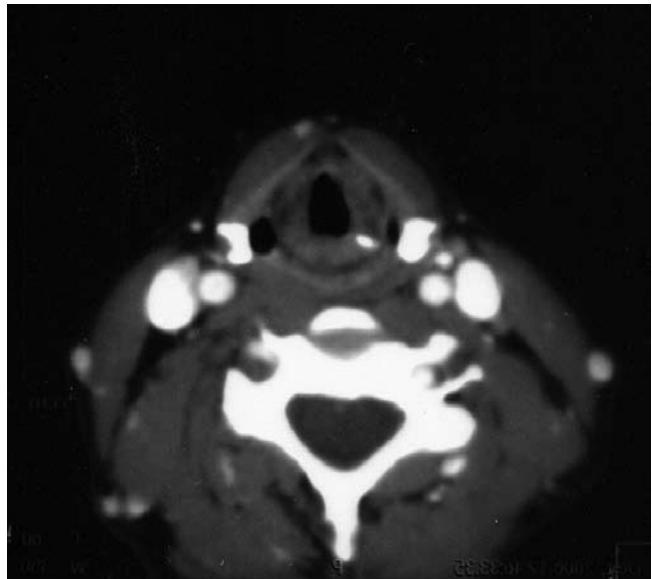
ate smoker by several years; the medical history was negative. A videofibrolaryngoscopy revealed the presence of a polypoid mass of the medial margin right (anterior third) of the right false vocal fold, with an aspect of a papillomatous like lesion (Fig. 1). The laryngeal mobility was normal as well as the other portions of the upper aero-digestive tract. The patient underwent direct microlaryngoscopy under general anaesthesia with macroscopically wide excision of the mass with sharp dissection and bleeding control with monopolar needle dedicated instrument.

Histological examination revealed the presence of a BSCC of the supraglottic larynx (Fig. 2).

A computed tomography (CT) scan of neck and thorax was negative (Fig. 3). We have chosen CT rather than Magnetic Resonance (MRI) considering that the patient complained claustrophobia.



**Fig. 2.** Histological examination revealing the typical aspects of a BSCC of the supraglottic larynx.



**Fig. 3.** Negative computed tomography (CT) scan of neck.

Also a total-body [18F]-2-fluorodeoxyglucose-PET (FDG-PET) was negative for distant metastases. The neoplasm was consequently classified as pT1N0M0 TNM stage.

For the choice of the best therapeutic strategy, considering on one hand the aggressiveness of this kind of tumor and on the other hand the very limited extension and the age of the patient, we have decided, rather than for a surgical option (partial reconstructive laryngectomy), to execute an external radical radiotherapy.

After collegiate evaluation, the patient underwent postoperative treatment with external radical radiotherapy. A CT simulation have been done, after immobilization of the patient with thermoplastic mask, in supine position. We have acquired slices of 5 mm thickness from temporomandibular joint to supraclavicular fossa.

The slices have been contoured using a treatment planning sistem Pinnacle 3 (ADAC Philips).

We have contoured a Clinical Target Volume (CTV), considering as CTV1 the larynx and as CTV2 the nodes of II and III level bilaterally, following the Radiotherapy Oncology Group (RTOG) consensus guidelines (RTOG 91-11).

A total dose 60 Gy for CTV1 and 44 Gy for CTV2 was administered in 30 fractions, both at isocenter.

The treatment was not interrupted with good clinical tolerance; at the end of the therapy we reported Grade 1 mucositis of the larynx and a Grade 1 dermatitis of the neck region (following the RTOG criteria) with a moderate dysphonia, resolved in few weeks<sup>17</sup>.

After a follow up period of 36 months the patient is free from disease as confirmed by laryngeal endoscopy, CT scan and FDG-PET.

## Discussion

The basaloid subtype of SCC represents less than 1% of laryngeal carcinomas; to our knowledge since it was recognized in 1986 as a separate entity approximately 170 cases of BSCL were reported in literature and one fourth of them were located in the larynx, with a predilection of supraglottic tract; very few cases between these, cases with exclusive supraglottic involvement diagnosed at early stage are very rare<sup>15 16 18</sup>.

BSCL has typical histopathologic features; it is considered an highly malignant laryngeal tumor characterized by areas of typical *in situ* and/or invasive SCC associated with nests of small crowded cells. These cells have typically hyperchromatic nuclei, scant cytoplasm, small cystic spaces, necrosis, prominent hyalinisation and peripheral palisading. The overall appearance suggests an attempt of differentiation toward glandular structures<sup>10 13 19-22</sup>.

Many authors agree with Wain et al. that BSCL derives from totipotential cells located at the base of the ciliated columnar epithelium or in the proximal salivary gland ducts, cells that are also precursor of squamous carcinoma, adenocarcinoma, oat cell carcinoma and reverse cell carcinoma<sup>10 19 23</sup>.

Differential diagnosis should mainly include conventional SCC, small cell neuroendocrine carcinoma, adenoid cystic carcinoma, basal cell adenocarcinoma, adenosquamous carcinoma, spindle cell squamous carcinoma, mucoepidermoid carcinoma and adenoid squamous cell carcinoma<sup>1 8 13 15 24</sup>.

Differential diagnosis is relevant because BSCL differ in biological behaviour, prognosis and therapeutic management<sup>1 8 11 14 15 24 25</sup>.

Even if there is some report that BSCL can be diagnosed by fine needle aspiration, it is well recognized the importance of obtaining a biopsy specimen as deep and wide as possible (because basaloid cells could not be included in the specimen and so it should be difficult to distinguish especially between adenoid cystic carcinoma and small cell undifferentiated carcinoma)<sup>3 11 24 25</sup>.

Endoscopically BSCL is indistinguishable from the common forms of squamous cancer or, such happened in our case, even from a papillomatous mass.

The tumor borders are indiscreet because of their infiltrative growth beneath the surface epithelium; this feature make the neoplasm often deeply invasive and consequently multifocal or metastatic even at initial presentation<sup>8 13 19 23</sup>. Becker et al. in 1998 observed in cases of BSCL a distinct radiological aspect at Magnetic Resonance Imaging (MRI) consisting in a typical "lobulated" enhancement pattern on contrast-enhanced T1-weighted Spin Echo images; the authors did not observed this particular aspect in the common form of SCC, which typically shows a relatively homogenous enhancement with or without associated area of ulceration or necrosis<sup>23</sup>.

Another important instrument that can be helpful in detecting, staging and following BSCL of the head and neck area is represented by FDG-PET.

Kunkel et al. demonstrated that FDG-PET screening was able to depict a clinically and radiologically invisible site of recurrence allowing for salvage surgery and that normalized posttreatment glucose metabolism was predictive for tumor control even in the "high risk population of BSCL patients"<sup>26</sup>.

After the diagnosis and staging the suggested treatment in literature is a combination of radical surgery followed by radiation and chemotherapy, especially in presence of metastases, considering that most of reports agree that BSCL is a biologically high grade malignancy with a tendency for locally aggressive behaviour and early regional and distant metastases, with a poor prognosis<sup>1 4 8 10-16 18-20 24 27</sup>. Ferlito, furthermore, found that this neoplasm show a tendency for the development of second primary tumors in the upper aerodigestive tract<sup>13</sup>.

For Erdamar et al. the survival rate of BSCL was poorer (even if not statistically significant) compared with conventional SCC; they determined moreover that, in comparison with the control group, for patients with supraglottic T2 disease and undergoing partial laryngectomy exists a statistically significant differences for local recurrences with the consequence that conservative laryngeal surgery should be employed only with great caution. They concluded that postoperative irradiation should be encouraged as an appropriate therapy against local aggressivity of tumor; in addition to local control, adjuvant chemotherapy should also be considered for prevention of distant metastases<sup>27</sup>.

The poor prognosis of BSCL justifies an aggressive treatment: more specific antibasaloid chemotherapeutic drugs should be sought<sup>18</sup>.

Despite these studies referring to BSCL such us a particularly aggressive pathology, some other authors suggest that behaviour of BSCL, especially in early stage, is similar to conventional squamous cell carcinoma.

A study by Luna et al. revealed that notwithstanding its aggressiveness, the biologic course of BSCL is similar to that of conventional SCC when clinical stage, site, and treatment are matched, emphasizing in particular that survival and incidence of cervical lymph node metastases were similar to those of conventional SCC<sup>28</sup>.

The concept that an early stage of tumor may be regarded as a different category and treated more conservatively is also emphasized in three others studies<sup>15 20 29</sup>.

For Sheen et al. although BSCL of the upper aerodigestive tract is aggressive, an early glottic type of tumor may be regarded as a different category and treated more conservatively<sup>29</sup>.

In its study Erisen et al. found that their early stage cases with no evidence of neck nodes metastases (N0) had a good prognosis. Even if their cases with advanced stage cancer

with pathologically N+ necks had poor prognosis despite aggressive combined treatment, the authors believe that early stage BSCC act similarly to their counterparts in conventional SCC, justifying a more conservative treatment. In the study of Alkan et al., in contrast to the literature, the two cases of BSCC of the larynx reported were both young and had no metastatic spread to cervical nodes even with a presentation in advanced stage (both N0); after a follow up of at least 24 months, following a surgical and radiant treatment, the patients are free of disease<sup>20</sup>.

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Because most cases of BSCC present with advanced stage tumor it is generally believed that histological features were reflective of the neoplasm's aggressive clinical behaviour and poor prognosis.

Very few cases of early stage BSCC are described in literature and at our knowledge there is not a sufficient number of case to evaluate the prognosis of this initial neoplasia; greater number of patients must be studied comparing BSCC and conventional SCC matching site of occurrence, stage and age of presentation.

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