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The basaloid squamous cell carcinoma of the nasopharynx*

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SUMMARY

The basaloid squamous cell carcinoma (BSCC) is a very rare and widely unknown malignant tumour of the upper aerodigestive tract. It is considered a particular variant of squamous cell carcinoma (SCC), but much more aggressive. A relatively little number of cases and clinical reports has been published since its first description in 1986 by Wain et al. Only five basaloid squamous cell carcinomas with location in the nasopharynx, where it seems to have a different biological behaviour, are mentioned in the international literature. We present a new case of BSCC with this location, referring to the pathologic and clinical aspects and to the respective literature.

Key words: basaloid squamous cell carcinoma, nasopharynx

INTRODUCTION

The squamous cell carcinoma is the most common malignant tumour of the upper aerodigestive tract, however, variant histologic subtypes including verrucous, non keratinizing, adenoid - cystic, sarcomatoid, adenosquamous carcinoma and, recently, basaloid squamous cell carcinoma (BSCC) (Wain et al., 1986) are not infrequent. The basaloid squamous cell carcinoma is considered a variant of the squamous cell carcinoma with distinct morphological and biological features. It was firstly, accurately described in the head and the neck by Wain et al. in 1986, who also coined the term. In 1991, the World Health Organization included this tumour as a distinctive clinicopathological entity in its *Revised Edition of Histological Typing of Tumors of the Upper Respiratory Tract and Ear* (WHO, 1991). BSCC occurs in many organs, with strong predilection for the upper aerodigestive tract. Other sites are lung (Brambilla et al., 1992), esophagus (Abe et al., 1996), buccal cavity (Cadier et al., 1992; Dougherty et al., 1985; Foster Nora et al., 1997), nasal cavity (Wan et al., 1992), trachea (Saltarelli et al., 1995), anal canal (Dougherty et al., 1985) and uterine cervix (Ferry et., 1988).

Only five cases of BSCC with location in the nasopharynx were mentioned in the international literature up to now, according to our knowledge (Banks et al., 1992; Wan et al., 1992); two of these cases were assigned to the nasal cavity / nasopharynx without any further information about the exact location (Banks et al., 1992). We report a new case of basaloid squamous cell carcinoma located in the nasopharynx, considering, in particular, the clinical aspects.

CASE REPORT

A 45 year old female patient came to our hospital with recurrent pain in her left ear since one year accompanied with hypacusia over the last three months. She also complained of recently arisen snoring during sleep. A chronic inflammation of the eustachian tube was known for 18 years and was treated with drainage of the middle ear and tympanotomy, as well as with various conservative, non-surgical ways. These treatments had a short lasting success. Her clinical history was otherwise free. The patient denied any consumption of alcohol, tobacco and other drugs. Her mother suffered from malignant bladder and gut tumours, of which she had died. Her grandfather died of a tongue carcinoma. The histologic features of all these cancers were unknown.

When she first came to our hospital, she was in a good general condition. During the physical examination, a deflection of the soft palate to the left side was noted, so we had to believe in an infiltration of the glossopharyngeal nerve. On the upper pole of the left tonsil there was a tissue protuberance which continued in the nasopharynx, particularly around the left salpingopalatine fold and the nasopharyngeal roof. Mucosa in this area was thrown up and phlogisticly altered. The free margin of the soft palate up to the uvula showed granulation tissue and was thickened and hardened on palpation.

The tympanic membrane on the same side, i.e. the side of the above reported pathologic alterations and clinical discomfort, offered a normal aspect, but audiometry showed a combined hypacusia with sensory deafness up to 25 dB for the upper

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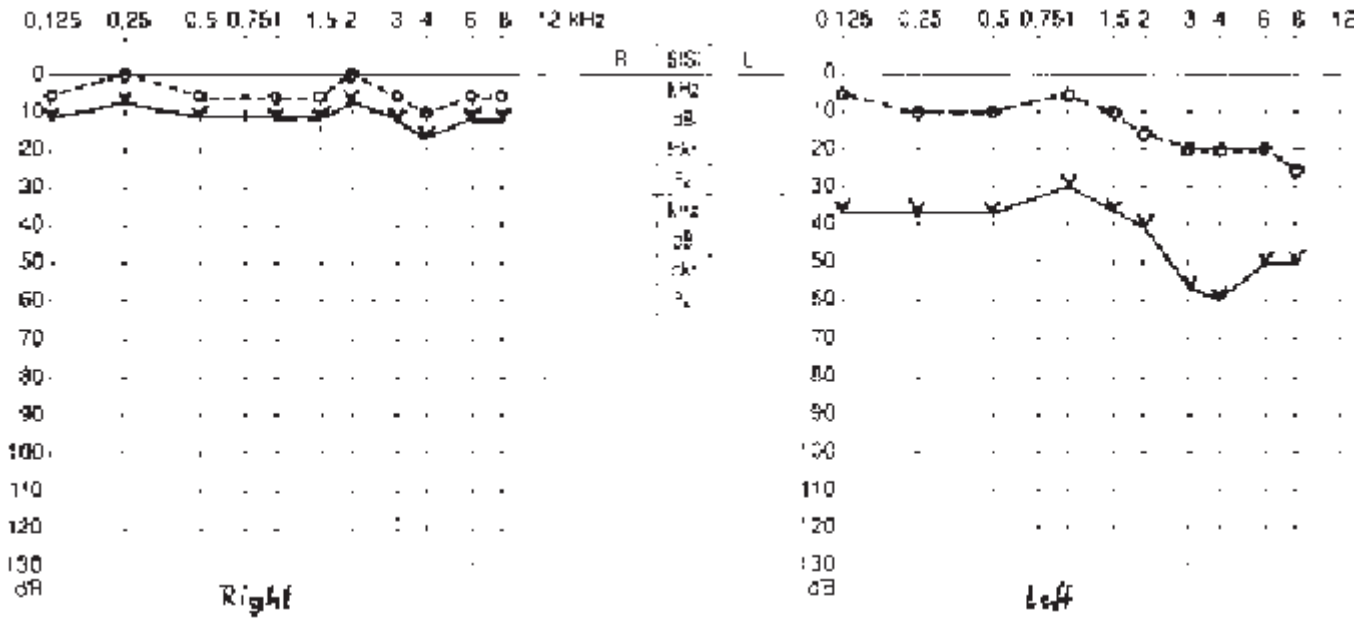

Figure 1. Normacusia on the right ear; combined hypacusia with sensory deafness up to 25 dB for the upper tones and transmission deafness in all frequencies up to 40 dB on the left ear.

tones, and transmission deafness in all frequencies up to 40 dB. On the right side, there was a normacusia (Figure 1).

By magnet resonance imaging (MRI) we found out that the extension of the tumour went from the left wall of the pharynx laterally to the pterygoid muscles and the extracranial part of the arteria carotis interna. Medially the tumour mass reached the lateral base of the soft palate. Two enlarged lymph nodes at the caudal end of the left parotis gland could be found which, postoperatively, on histologic examination, were assessed free from metastasis. These findings of MRI could be confirmed intra operationem, so that the tumour was classified as pT4pN0M0 after microscopic examination and having considered all clinical aspects. The tumour resection was carried out using the transoral access. We made frozen sections in all directions to be sure to have an R0-resection. In addition, functional neck dissection and temporary tracheotomy were executed. A drainage of the middle ear by implanting a tube was necessary to avoid eustachean tubal dysfunction after resection of the salpingopalatine fold. To reduce rhinolalia aperta and to avoid pernasal reflux of ingested food, which both appeared postoperatively, we had a palatal obturator done. The patient was initially feeded by a percutan gastrostoma (PEG).

After sufficient recovery, the tracheostoma was closed and radiation therapy followed. The radiation of the primary area (base of the skull to the base of the tongue) was executed with 66 Gy, the one of the lymphatic drainage of the neck of both sides with 46 Gy. Single doses amounted to 2 Gy to be given five times a week. The overall tolerability of the therapy was good. The skin and the mucosa reacted with grade II/WHO.

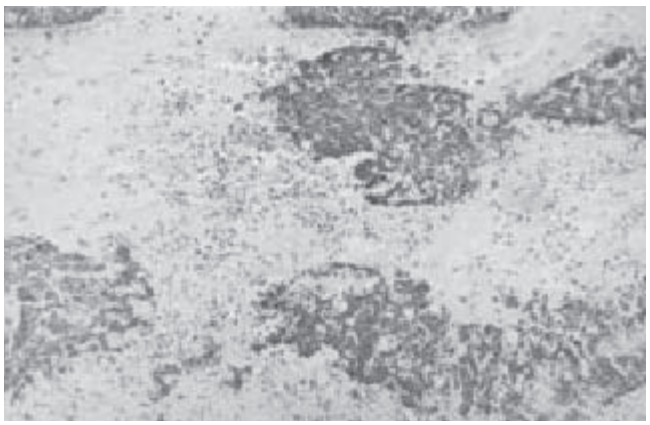

Figure 2. Basaloid squamous cell carcinoma of nasopharynx: nests of small, hyperchromatic cells with with central necrosis (comedo necrosis); HE x 100.

DISCUSSION

BSCC was firstly described by Wain et al. (1986) as an unusual carcinoma involving the mucosa and the underlying tissue of the tongue, hypopharynx and larynx (Wain et al., 1986). Successively BSCC has been reported in a variety of anatomic sites other than head and neck such as anus (Dougherty et al., 1985), thymus (Walker et al., 1990), esophagus (Abe et al., 1996) and uterine cervix (Ferry et al., 1988), but most frequently involved the larynx, supraglottis, piriform sinus and the base of the tongue. It is more frequent among men in their sixth and seventh decade of life and with a history of heavy smoking and alcohol abuse.

About 190 cases of BSCC have been reported in the literature. Only five cases of BSCC with location in the nasopharynx are mentioned in the literature to our knowledge. Three of these five cases referred exclusively to the detection of Eppstein- Barr virus (Wan et al., 1995). The other two cases were listed as tumours of the nasal cavity / nasopharynx by Banks et al. (1992) without further information about their exact location. Seidman et al. (1991) reported a tumour that Campman et al. considered a BSCC of the nasopharynx (Campman et al., 1994), but the tumour in the nasopharynx was a simple squamous cell carci-

noma (SCC) while the BSCC was situated as second primary carcinoma in the vallecula.

Tumours are histologically characterized by a bimorphic pattern with prevalently solid nests, variable in size, of basaloid cells and squamous cells. Basaloid nests showed little cystic spaces containing mucin-like material (PAS and Alcyan Blue positive), comedo-like necrosis and stromal hyalinosis; infiltrating squamous cell carcinoma and/or focal squamous cell differentiation in intimate association with the basaloid cell zones is also present (Wan et al., 1992). The bimorphic pattern, the solid growth pattern, the stromal hyalinosis, the nuclear atypia, frequent mitosis and necrosis are reliable morphologic imprint tools in the differential diagnosis with the usual squamous cell carcinoma, adenoid cystic carcinoma, adenosquamous and mucoepidermoid carcinoma and lastly neuroendocrine cell tumours.

The histochemical and immunohistochemical profiles of the basaloid undifferentiated cells of the BSCC consist of constant PAS and Alcyan unreactivity of cytoplasm; slight and variable reactivity to the low MW cytokeratines, no reactivity to S-100, GFAP, NSE and chromogranin. All these morphologic criteria of BSCC were fulfilled by the case studied by us; the undifferentiated basaloid parts were prevalent and characterized by the histochimical and immunohistochemical identikit reported.

As noted above, the typical patient with BSCC is an older man with a history of heavy smoking and alcohol abuse. Also for typical carcinomas of the nasopharynx, the median age is advanced (in Europe between the 7th and 9th decade of life) with male predominance, but current noxae do not seem to be required for oncogenesis.

BSCC in the nasopharynx is very rare, so that there is no representative information about epidemiology. Our patient is a younger (45 years old) woman who had no abuse of tabacco, alcohol or other drugs. Exposure to chemical agents at work was denied.

Wan et al. (1992) demonstrated the presence of the Epstein-Barr virus in three cases of BSCC of the nasopharynx and deduced a strong tumour association with EBV as is known for the undifferentiated carcinoma of the nasopharynx, in which the virus is almost always present as the major etiological agent. The virus was not present in the case studied by us. This could have an ethnological reason since the three cases reported by Wan et al. (1992) were all encountered in Chinese. This association does not necessarily exist in Europeans.

Other, still unknown factors may play a role in oncogenesis such as familiary- or genetic predisposition. The mother of our patient, for example, had died at the age of 54 of an intestinal cancer while she also had a bladder cancer as a second primary tumour. Her grandfather had died of a tongue carcinoma. The histological identity of these tumours is not known.

Our patient had an 18 years long clinical history for unilateral otalgia, disturbance of the tube function and hypacusia, typical for all tumours of the nasopharynx. It suggests that the oncogenesis is a very long one as known, for instance, for bronchial carcinomas. Biopsies were never carried out prior to the diagnosis,

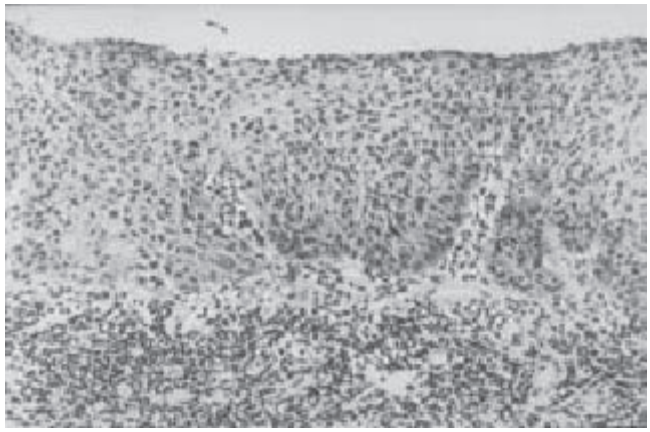

Figure 3. Basaloïd squamous cell carrinoma; mucosal component with thick and irregular multilayer; HE x 150

so we do not know how long the tumour existed or epithelial alterations were present.

Therapy of choice is a combination of surgery and radiation (Larner et al., 1993). Reliable results of an additional chemotherapy, justified by the tendency to give early distant metastasis (mostly to lung, bone and brain), still fail, but chemotherapy seems to be reasonable. Not yet settled is the question about the responsiveness of the basaloid squamous cell carcinoma to chemotherapeutic agents.

Wan et al. (1995) considered the BSCC of the nasopharynx less aggressive than the BSCC in other sites because the median survival of two years calculated for BSCC was clearly exceeded in their three cases and the tumours could be controlled by radiation therapy as it is possible for the undifferentiated nasopharyngeal carcinoma. Our patient is still alive, 36 months after the diagnosis, with no evidence of lymph node or distant metastasis or a second primary malignant tumour. Certainly, it is too early to make statements about the prognosis, but the present clinical course seems to confirm what has been postulated by Wan et al. (1995). The clinical follow up is realized by physical examination and B-scan ultrasound every 4 weeks, by computed tomography (CT) of chest and abdomen and by osseous scintigraphy. Local recurrences were excluded by MR-Imaging and biopsies.

CONCLUSION

The basaloid squamous cell carcinoma is a clearly and unequivocally defined anatomopathologic entity with predilection for the upper aerodigestive tract. Its location in the nasopharynx is very rare and very little is known about its biological behaviour. Some characteristics of the BSCC of the nasopharynx may be evident:

1. younger median age at diagnosis as for other nasopharyn geal carcinomas
2. very slow development before diagnosis
3. other etiological factors than nicotine and alcohol abuse may play a role in oncogenesis
4. presence of Epstein-Barr virus seems not to be correlated with the BSCC of the nasopharynx
5. possibly lower aggressiveness than the BSCC in other sites

6. radical surgical and radiation therapy may control the tumour.

Respecting these points, we conclude that particular attention must be paid to clinical observation. If typical symptoms of pathologic nasopharyngeal processes appear, repeated and careful examination of the nasopharynx, eventually with biopsies, are necessary, even when patients are young. An aggressive therapy is justified by the median age of these patients and the particular behaviour of this tumour in the nasopharynx. Clinical follow up must be meticulous.

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