Squamous cell nose and a synchronous in-situ vocal cord carcinoma: a case report

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Abstract. Squamous cell nose and a synchronous in-situ vocal cord carcinoma: a case report. Reports indicate that the incidence of multiple primary tumours in head and neck cancers is high. However, most of these tumours are either metachronous primary or secondary tumours of the same histopathological type. The development of a synchronous primary squamous cell skin cancer of the nose and an in-situ vocal cord carcinoma is something unusual.

We present the case of a patient with a primary neoplasm along the lateral side of the nose up to the bone of the pyramid, including the skin of the inner side of the nose and an infiltration of the inferior nasal concha on the right side, together with a small synchronous primary lesion of the left vocal cord.

To the best of our knowledge the case described is the first in the English medical literature and we discuss the complete management of synchronous head and neck malignancies, emphasising the importance of panendoscopy in the prevention of pitfalls in diagnosis and the therapeutic procedure.

Introduction

Various studies have suggested that patients with head and neck malignancies have a high risk of developing second primary tumours (SPT). The majority of SPTs were found in the aerodigestive tract (oropharynx, oral cavity, hypopharynx). The second most common site was the lungs and oesophagus, with areas other than the aerodigestive tract being the third most common location. SPTs of the facial bones, the nasopharynx and the larynx were rare. In the same studies, the initial primary tumour – the one that was diagnosed first – was often located in the oropharynx, the oral cavity, the hypopharynx, and the larynx, and less often in the nasopharynx, the facial bones, the salivary glands or outside the ear, nose, and throat region.

Multiple primary tumours are usually squamous cell carcinomas and they are thought to be metachronous more often. The diagnosis of a primary squamous cell skin cancer of the nose, and a synchronous second primary tumour of the same histological type in the larynx, is a very rare phenomenon.

In this report, we present a rare case of this kind. We discuss the problems associated with the diagnosis and treatment of synchronous cancers.

Case report

A 64-year-old farmer was admitted to the ENT department of the Medical School of Democritus University of Thrace, Alexandroupolis, Greece in February 2004, with a six-month history of a neoplasm along the skin of the right lateral cartilaginous section of the nose. The patient also complained about hoarseness during the last three months before admission. He had been a heavy smoker for the past 45 years and a heavy drinker for 25 years.

The ENT examination with classic anterior rhinoscopy and endoscopy revealed a neoplasm along the lateral side of the nose up to the bone of the pyramid and the skin of the inner side of the nose and an infiltration of the inferior nasal concha on the right side, together with a small synchronous primary lesion of the left vocal cord. There were no palpable cervical lymph nodes. A CT scan of the nose confirmed a mass of approximately 1.8 cm diameter that was in contact with the inferior nasal concha and that expanded into the nasopharynx to the right of the nose. There was no evidence of neck node involvement (radiological T3-N0 stage; AJC staging system).

Histological examination of the skin nose lesion and left vocal
cord showed a typical well-differentiated squamous cell carcinoma in the skin of the nose and an in-situ carcinoma in the left vocal cord (Figures 1, 2).

After these findings, an operative procedure was decided on that included a combination of an open external unilateral rhinectomy and endoscopic surgery. Moreover, we conducted a lateral right-sided rhinotomy up to the bony border of the inferior limit of nasal pyramid (Figure 3). Then we proceeded with a total nasal tip right-sided resection through endoscopic surgery as far as the anterior border of the Eustachian entrance. The histopathological findings indicated that excision of the tumour was complete. The patient was also given postoperative radiotherapy, receiving 66Gy (2Gy per fraction) to the nasal cavity and nasopharynx using conformal techniques with a 6MV linear accelerator endowed with a multi-leaf collimator. The larynx was also irradiated with localised oblique fields to a total dose of 54Gy (2.7Gy per fraction).

**Discussion**

Since Theodor Billroth presented the first well-documented case of more than one independent malignant tumour developing in the same person, second or multiple primary lesions have become well recognised in the specialty of head and neck oncology. Several factors may contribute to the emergence of second primary malignancies in the same individual. Carcinogenic insults, such as cigarette smoking and alcohol use, are the most important factors contributing to multiple-tumour cases, particularly of the head and neck. Andre et al. found that people who smoked more than one packet of cigarettes a day were 13 times more at risk than non-smokers, and that people who drank more than one and a half liters of wine per day were 34 times more at risk of developing head and neck cancer. Age at onset (less than 18 years of age) and the duration of smoking (more than 35 years) were also high risk factors. Stopping smoking reduced the risk, but only casual smokers (fewer than 7 cigarettes per day) could hope to have the same risk as non-smokers within a period of 15 years. We believe that these factors act as carcinogens on the whole epithelium, increasing the likelihood of the development of multiple independent malignant foci. The attributable risk has been estimated to be 95%. Alcohol proved to have a greater carcinogenic effect on parts of the digestive tract such as the oral cavity, hypopharynx, epilarynx and even...
the oropharynx, whereas tobacco affected the digestive and airway passages (endolarynx). In our case, the patient had been a heavy smoker for the past 45 years and heavy drinker for 25 years. In addition, as a 64-year-old farmer with high UV-exposure, he also had a clearly increased risk for a non-melanoma skin cancer on the exposed face skin, which is the most common type of cancer affecting the Caucasian population. Approximately 80% of these cancers are basal cell carcinomas and 20% are squamous cell carcinomas. It should therefore be noted that the coincidental occurrence of these pathologies is possible because of the combination of high risks for our patient.

Other studies also refer to common genomic aberrations and the latent result of treatment (chemotherapy, radiation therapy or combined modality treatment) as other important predisposing factors for several types of second primary malignancies. In 1932, Warren and Gates first defined the criteria for the diagnosis of multiple primary malignant tumours that were modified by Schwartz et al. On the basis of these criteria, we describe our patient as a case of multiple primary cancers. Multiple primary tumours have been described as synchronous or metachronous, depending on the time interval between two malignancies; synchronous primary malignant tumours are defined as secondary primary neoplasms occurring at the same time or within six months of the appearance of the primary lesion, as in our patient. After six months, second primaries are considered to be metachronous. The differentiation in diagnosis between synchronous and metachronous primary tumours is of great importance, both for patient survival and for the therapeutic approach.

Various studies are based on the principle of diagnosing multiple primary tumours according to anatomical location. These studies found clinical signs in only 42.7% of synchronous cancers, with 26.9% of patients being asymptomatic. In 16.9% of cases, the second cancer was revealed by endoscopy. The anatomical location of the SPT was very important in the diagnosis of second primaries. In our case, the diagnosis of the second primary tumour was based on clinical signs and particularly on endoscopy. Even though the efficiency and cost-effectiveness of panendoscopy are matters of some dispute among scientists, we believe that it should be a part of the routine work-up in any patient, symptomatic or asymptomatic, with head and neck cancer, even if there has been a negative barium contrast study. We must emphasise the fact that, if the histological findings are identical in both tumours – for example squamous cell carcinoma – it is difficult to determine whether one is a metastasis of the other. A diagnosis of a multiple focus has to be made clinically in such cases, as indeed happened with our patient.

A relationship between head and neck malignancies and second primary tumours, either metachronous or synchronous, has been estimated to range from 5% to 26%. The incidence of this relationship has been reported by many authors, including Schwartz et al. (19%), Gluckman and Crissman (14% or 9.2%), Strigens et al. (16.7%), Panosetti et al. (9.4%) and Cooper et al. (11.9%). These studies found that the initial primary tumour – arbitrarily defined as the one diagnosed first – was located more often in the oropharynx, the oral cavity, the hypopharynx and the larynx, and less often in the nasopharynx, the facial bones and the salivary glands. Similarly the majority of second primary cancers were detected in the hypopharynx, the oropharynx, the oral cavity, the oesophagus and the lungs. Second primary cancers were rarely found in the facial bones, the larynx and the nasopharynx. In general, topographical studies of the occurrence of multiple cancers revealed that synchronous cancers occurred in anatomical locations near the first cancer, while metachronous localisations occurred preferentially along one of two axes: the digestive tract and the respiratory system. We understand that skin cancer of the nose as the initial tumour is a rare event, while the appearance of a synchronous squamous cell vocal cord carcinoma is still rarer. Ours is the first reported case of synchronous primary squamous cell skin cancer of the nose and a second primary squamous cell vocal cord carcinoma to date.

The treatment of synchronous tumours involves, in the majority of cases, radiotherapy or surgery in association with radiotherapy rather than primary surgery alone. Some of the newer therapies include new methods such as induction chemotherapy and immunomodulation. However, the importance of these new therapies has not yet been demonstrated in terms of survival or morbidity. In our case, the actual treatment took into consideration both cancers, the first and the second primary. The treatment we chose was a
combination of surgery in the form of a wide local excision followed by radiotherapy. We understand that simultaneous cancers need a global approach to the treatment of the two cancers. In the case of metachronous cancers, a second treatment phase must be instituted for the second cancer. Panosetti et al. demonstrated, in a large series of patients, that the discovery of a synchronous second primary tumour altered the treatment approach in 50% of the patients in their series.

Synchronous cancers have a very poor prognosis, characterised by an extremely aggressive, plurifocal cancerisation. The 5-year actuarial survival rate is 18%, compared with 55% for patients with metachronous tumours, with variations according to treatment. This rate rises to 28% when the two cancers are diagnosed at the same time as the localisation of the first tumour and when second cancers are diagnosed before starting treatment of the first cancer. After 2 years of follow-up, our patient is doing well, with no recurrence or metastases.

Conclusions

The key idea that should be retained is that head and neck cancer is not a regional mucosal disease, but rather a panmucosal disease of the aerodigestive tract. This means that, in any case of head and neck malignancies, we must not limit our approach to the initiation of therapy for the first primary cancer, and that we should perform a thorough ENT examination with panendoscopy (classic anterior rhinoscopy, endoscopy, indirect laryngoscopy, endoscopy of the larynx, oesophagoscopy, bronchoscopy) throughout the head and neck area, and not only in the area of the initial tumour, looking for a possible second primary tumour. Panendoscopy may result in the detection of a second primary lesion while it is quite small and often asymptomatic. Early diagnosis of a synchronous second primary tumour before starting the treatment for the first cancer, as well as the differentiation in diagnosis between synchronous and metachronous primary tumours, is very important in establishing the best therapeutic approach and improving the patient's survival rate. Early detection of synchronous primary lesions allows all therapeutic options to be considered and employed appropriately. Furthermore, if one accepts the field cancerisation concept, and given that survival rates after cancer benefit from early treatment, periodic panendoscopy should be considered as a routine follow-up screening test in all patients with a history of head and neck malignancies who continue to smoke and to drink alcohol. We therefore believe that panendoscopy is an important component of follow-up for these patients and that it should also be conducted immediately after the period of treatment.

References


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