CASE REPORT

The squamous cell carcinoma at the level of the cephalic extremity: epidemiological, clinical and histopathological aspects

ANCA BORDIANU1), I. P. FLORESCU1), ANCA MUREŞAN2), ELENA BERNAD3), M. CRAINA3), IZABELLA ŞARGAN4)

1)Department of Plastic Surgery and Reconstructive Microsurgery, "Carol Davila" University of Medicine and Pharmacy, Bucharest
2)Department of Pathology
3)Department of Obstetrics and Gynecology
4)Department of Anatomy–Embryology
"Victor Babes" University of Medicine and Pharmacy, Timisoara

Abstract
Malignant tumors represent one of the most important medical problems, due to the increased mortality rate, life quality alteration, and the lack of a curable treatment. Skin neoplasm ranks first most frequent top primary tumor, summing a higher percentage than any other neoplastic location. It is also known, the fact that, in our country, gastric adenocarcinoma represents the most encountered tumor of the digestive tube. Our case, male, 49-year-old, comes from a rural area, was diagnosed with and surgically treated, within one year, for gastric adenocarcinoma (intestinal type gastric carcinoma) and squamous cell carcinoma (at the level of the lower lip). A high number of etiologic agents are associated with different risks in developing a carcinoma with squamous cells at the level of the head and the neck, and a gastric carcinoma (our patient is known to suffer from gastric ulcer and Helicobacter pylori, for more than 20 years, and he is a chronic consumer of alcohol and nicotine).

Keywords: squamous cell carcinoma, high degree of keratinization, gastric carcinoma, histochemical reactions.

Introduction
Skin cancer affected more than 1 million persons, in the USA only. Although this disease represents only 4% of the cancer cases, it has a mortality rate of 75%. One of 25 men, and one of 38 women suffer from skin cancer until the age of 75, the illness incidence rate is 0.37% among women aged 50 years maximum. The incidence is rated at 150/100 000 per year in Europe, with higher rates in the USA (300/100 000) and Australia (1600/100.000) [1–4]. The incidence doubled in the last five years. In Europe, the squamous cell carcinoma (SCC) incidence, varies between 6.7/100 000 men and 3.8/100 000 women in Slovakia, and 28.9/100 000 men and 11.7/100 000 women in Switzerland [5].

In Romania, the incidence of SCC is not, yet, known exactly. Keeping clear records of all SCC patients would allow the exact appreciation of the social and financial impact of skin tumors on society. All these would lead to the implementation of a surgical treatment and common adjuvant, no matter the geographic area, but considering the histopathological staging of the lesion excision.

SCCs are invasive carcinomas, with a high degree of malignancy, developed on the mucous or spinous layer of the skin and mucous; therefore, the name of squamous cell (Krompecher). Tumor cells are characterized by a higher keratinization degree than the one of the normal cells, or by an absence of differentiation. The clinical popularity is given by the strong invasive and recurrent character, and also by the loco-regional metastasis that differentiates them from the basal cell carcinoma [6, 7].

Patient, Methods and Results
Patient, male, 49-year-old, he presented himself at the Department of Plastic Surgery and Reconstructive Microsurgery, “Bagdasar–Arseni” Clinical Emergency Hospital, Bucharest, Romania, having an infected ulcerating tumor, at the level of the lower lip, about 3–4-month-old (Figure 1).

Figure 1 – Ulcerating infected tumor, at the level of the lower lip.

Surgery: tumor excision under extemporaneous histopathological control. The deficiency of the lower lip has been reconstructed by the symmetric advancement of two nasolabial flaps. The final aspect of the intervention is highlighted in Figure 2. The histopathological analysis tracked the histopathological variety, the differentiation grade, the amplitude of the inflammatory infiltrate, the
pattern of the tumor invasion, the presence of a metastatic adenopathy, the presence of perineural invasion, the presence of blood and lymphatic vessel invasion, the presence of residual malignant cells at the level of surgical safety margins.

Figure 2 – Postoperative clinical appearance.

Macroscopic diagnosis: a surgical piece measuring 3.5/2.7/1.6 cm, partially covered in skin and buccal mucosa. At the level of hairy skin can be identified a nodular ulcerating tumor with a diameter of 1.7 cm.

Microscopic diagnosis: SSC moderately differentiated, invasive into the striated muscle structure and at the level of minor salivary glands. The tumor proliferation is accompanied by necrotic zones, and mixed inflammatory infiltrate. The resection limit is tumor free; pT2NxMx, Stage II (Figures 3 and 4).

Of the medical history of the patient, we noticed that eight months ago, he had suffered another surgical intervention for a gastric carcinoma, late diagnosed, because the patient did not see the doctor. It is known the fact that, in our country, the gastric adenocarcinoma is the most frequent tumor of the digestive tube. In men, gastric cancer ranks second after bronchoalveolar lung cancer, while in women it ranks third after breast cancer and cervical cancer.

The histopathological result classified the carcinoma as being intestinal type adenocarcinoma, characterized by the presence of pseudoglandular carcinoma structures, consisting of cells of malignant origin, placed on one or more layers with endoluminal papillary projections; tumor cells are, mainly, well or moderately differentiated, cuboidal or columnar.

The presence of the mucin secretion is more extracellular, because the tumor cells rarely contain inflammatory infiltrate consisting of lymphocytes, plasma cells and eosinophils. In our case, where the tumor necrosis is important, eosinophils is marked, probably as an allergic reaction to its presence (Figure 5). The histochemical reactions for mucins, evidenced the potential secretor or non-secretor feature of the neoplastic cells. The intensity of these reactions depends of the differentiation grade of the respective tumor. The most useful colorations are with AA–PAS, which prove the dominance of the acidic mucins, and of those, of the sulfomucins secreted by the malignant cells (Figure 6).
Discussion

All cancer types have a common feature – the disorder of the normal control over the cell division, growth, and differentiation. The initial clinical manifestations are extremely heterogeneous, yet, there are over 70 years known types of cancer, that, basically, appear in any tissue or organ of the organism. They can be completely asymptomatic, until late in evolution of the disease.

The squamous cell carcinoma ranks second in frequency among skin cancers; it often appears on areas exposed to sun, it may arise de novo, or at the level of some precancerous lesions (actinic keratoses) with metastasis risk [8–11].

Regarding the SCC, it is to notice that 80% of the cases are located on the semi-mucosal lining of the lower lip, and that all forms located on a mucosa (buccal, genital) have an ulcerous aspect from the start [12, 13]. After a few weeks or months from the debut, the carcinoma will either grow outward (exophytic) and/or grow inward (endophytic), causing various clinical forms [14].

Also, there are numerous mitoses and atypical cytoplasmic nucleotide. The tumor invades the dermis, and even the hypodermis, more or less profound, with the presence of an inflammatory infiltrate. The little differentiated feature and a certain grade of neurotropism are factors for a poor outcome.

Knowing the anatomic extension might also be necessary to minimize the secondary effects of the treatment, to improve the diagnosis methods, and, especially, the more exact characterization of the microscopic extension of the disease, that could help to define more homogeneous groups of patients, with similar disease features and similar prognostic factors, for a certain disease.

As such, the etiology implies a complex interaction of the entities, their introduction, as well as their interaction with a host, to produce a malignity. This is an important point, because it underlines the reality that the etiologic agents are necessary or sufficient to produce a certain type of malignity. Therefore, a high number of etiologic agents are associated with different risk rates in developing a carcinoma with squamous cells, of the head and neck [15, 16].

Schlemper RJ et al. state that alcohol and tobacco play a role in the gastric cancer’s genesis. The sulfocyanate in the tobacco smoke is a strong catalyst of the nitrosation reaction [17–20].

One association between alcohol consumption and human cancer was observed in 1910, when a study in Paris showed that 80% of the patients suffering from esophageal cancer were chronic consumers of alcohol [21, 22]. Therefore, the incidence of the head and neck carcinoma is, without doubt, associated with ethanol consumption. In 1998, the International Agency for Research on Cancer (IARC) of the World Health Organization (WHO) concluded that the proofs were enough to prove that alcoholic beverages are cancerous to humans. Even then, some scientists stated that alcohol interaction on mucous is similar with the tobacco’s [23, 24].

The head and neck SCC is most frequently associated with the consumption of alcohol and tobacco. Both case-control and cohort studies showed an association between alcohol and carcinomas of the oral cavity, oropharynx, and larynx. In some studies, the usage of ethanol, as well as tobacco, increased the risk of head and neck cancer a hundred times, affecting the global survival of the patient [25].

Even if a SCC was removed carefully, another one can develop in the same place, or near. The risk of these recurrences is very high in the first two years after the initial surgery. The squamous cell carcinomas developed on the nose, ears, or lips, are especially prone to recurrent.

Our patient consumed daily a “moderate amount” of alcohol, and at least a pack of cigarettes per day, and in terms of professionalism, he exposed himself to UV radiations – the first factor of risk in SCC – because he was a farmer. This alcohol and nicotine consumption are factors that play an important role in developing gastric cancer, factors that increase the risk of getting the disease.

Conclusions

The certainty diagnosis regarding any tumor is based on the histopathological exam of the biopsy, or on the piece completely excised. Recognizing the increased risk of the infection with Helicobacter pylori (oncogene grade 1, according to WHO) in the developing of gastric cancer for populations with a high incidence of this neoplasia, like our country, presents the necessity of discussing the economic efficiency of the screening tests for detecting and eradicating bacterial colonization. The elucidation of the pathogenic mechanisms has a crucial role, that to specify the bacterial strains with the highest carcinogen effect. The contribution of the organism and environment factors cannot be neglected.

References


Corresponding author
Anca Bordianu, MD, Department of Plastic Surgery and Reconstructive Microsurgery, “Carol Davila” University of Medicine and Pharmacy, 8 Eroii Sanitari Avenue, Sector 5, 050474 Bucharest, Romania; Phone +40740–231 424, e-mail: anca.bordianu@gmail.com

Received: June 12, 2013
Accepted: November 21, 2013