Primary Adenoid Cystic Carcinoma of the Skin with Multiple Local Recurrences

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Key Words

Adenoid cystic carcinoma · Cyndroma · Skin

Abstract

Primary adenoid cystic carcinoma (PACC) of the skin is a rare tumor with fewer than 70 cases studied in detail in the English literature. This type of tumor shows a prolonged course and a growth pattern usually manifested by multiple local recurrences and has a low potential for distant metastases. The most important modality for primary treatment is surgical resection followed by radiotherapy. We report a woman aged 43 years at the time of diagnosis, who presented with a slow-growing nodule in the right axilla without lymph node enlargement. A wide local excision was performed, and the histology revealed an adenoid cystic carcinoma. During the next 24 years, another four local recurrences were excised (the last one in 2015) and confirmed histologically to be adenoid cystic carcinoma. The patient was given 44 Gy of radiotherapy after the second surgery in 1996. PACC of the skin is a rare tumor with insufficient data concerning the efficacy of the surgical technique and chemotherapy and radiotherapy treatment, even more so in the case of multiple recurrences. After the last recurrence, the patient was offered an active follow-up based on the long tumor-free intervals in the past and because the site of the primary tumor allowed further surgical excisions in future recurrences.

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Introduction

Adenoid cystic carcinoma (ACC) is a malignant tumor which develops in areas with secretory glands, most commonly in the head and neck region [1]. Rarely, ACC arises in the airways, breast, vulva, and skin. It was first described by Theodor Billroth as ‘cylindroma’ in 1859 [2]. The name cylindroma originated from the specific appearance of the tumor cells with cylindrical pseudolumina or pseudospaces. Primary ACC (PACC) of the skin is a rare tumor first described by Boggio [3] in 1975, of which fewer than 70 cases have so far been studied in detail and reported in the English literature [4]. PACC has a low potential for distant metastases but has a very aggressive infiltrative growth pattern, frequent perineural invasion, and a high risk of local recurrence after excision [5]. The treatment depends on its size and location. Surgical techniques are reported as first-choice therapy for lesion excision. The high risk of local recurrence after surgery suggests that postoperative radiotherapy should be administered [6].

Case Report

In 1991, a 43-year-old woman presented to the dermatologist with a 10-year history of an enlarging nodule in the right axilla. In the previous couple of years, there were several episodes of inflammation. Clinical exam showed a 2-cm nodule on the midaxillary line. The nodule was flesh-colored and mildly painful. There were no palpable lymph nodes in the axillary area. The patient had no significant medical history to report. A wide excision was performed, and the histological result showed ACC of the skin. Perineural invasion was not described. Macroscopically, the tumor nodule was solid and covered with connective tissue. In 1996, a similar nodule occurred on the postoperative cicatrix, and another excision was made. The histology result showed ACC – a local recurrence. Radiotherapy was offered and performed with 44 Gy administered.

In 2000, a local recurrence was suspected in the area of the previous surgical treatments, but postexcision histology showed connective tissue only. In 2006 and 2010, excisions were made after local recurrences of tumor formation in the operative cicatrix, which were diagnosed as ACC. All of the laboratory and imaging tests during the 24-year history of the disease were within normal ranges, and no metastatic disease was diagnosed. In March 2015, once again, growth in the postoperative cicatrix in the right axilla appeared. The entire postoperative cicatrix was excised, and a 1.5/1.5-cm nodule was found. Histology revealed an ACC (fig. 1), with the tumor cells arranged in multiple variously sized lobules. They showed an overall cribriform appearance of the tumor (fig. 2). The chest CT scan showed no pulmonary metastases, and the patient was offered an active follow-up.

Discussion

PACC of the skin is a rare tumor with fewer than 70 cases reported in the English literature [4]. This type of carcinoma is commonly diagnosed in elderly and middle-aged patients. The average age at diagnosis is 59 years. It equally affects males and females, with a slight prevalence in females (54%) [7–9]. In 44% of the cases, there was a documented local recurrence with a follow-up period of 58 months. Metastases in other organs are rare and, in the event that they occur, the lung and lymph nodes are commonly affected sites [5]. The reported patient presented with PACC of the skin, first diagnosed in 1991, with four histologically

confirmed local recurrences. There were no detailed case reports in the accessible literature on such series of local recurrences, only reports on a high risk of such recurrences. All four recurrences were surgically treated; after the second one, a decision for radiotherapy was made, and the latter was administered at a dose of 44 Gy. The last local recurrence we described was diagnosed in March 2015 and was treated only surgically. ACC of the skin most often presents a treatment challenge due to the rarity of the lesion [10]. Surgical resection is a primary treatment, usually followed by radiotherapy; chemotherapy is used in select cases. Wide excision is the most common surgical technique, which was performed in the reported patient as well. The recurrence rate after traditional wide excision is about 44%. There are reports of several cases managed with Mohs micrographic surgery. Xu et al. [5] reported 7 cases treated with Mohs micrographic surgery without local recurrences during the follow-up period. Nevertheless, the authors admit that the limited number of cases and the insufficient follow-up period do not allow drawing a definitive conclusion on the superiority of Mohs micrographic surgery over wide local excision. There are no studies in the literature indicating the best surgical approach, and there are no sufficient follow-up data in cases with multiple local recurrences either. Again, because of the rarity of PACC of the skin, there are no studies in the literature about the efficacy of radiotherapy and chemotherapy. Nevertheless, there are a few reports debating that radiotherapy in PACC of the skin can help in achieving locoregional control when given postoperatively [11]. Chemotherapy is usually reported in PACC of the skin in cases with advanced disease. Cisplatin-containing regimens (cisplatin and 5-fluorouracil, cisplatin and anthracyclines, cisplatin and vinorelbine) showed some response in isolated cases [12–14].

The reported patient presented with PACC of the skin, with multiple local recurrences treated with wide local excisions and radiotherapy, and without imaging evidence of metastatic disease. After the last local recurrence, the patient was offered an active follow-up, the decision being based on the long disease-free intervals between the local recurrences. Surgery remains a possible future option for treatment, as the localization of the tumor allows further excision in case of recurrences. Chemotherapy is not curative and could be reserved for metastatic disease, whereas radiotherapy could be used for future local control.

Statement of Ethics

The corresponding author acknowledges that he is responsible for complying with ethical requirements and declares that the patient was correctly informed and written informed consent was obtained; the confidentiality of the patient was strictly preserved; the patient was informed about the submission of the manuscript and will be acquainted when the article is published, and the Principal of the Complex Cancer Center, Plovdiv, was informed and the manuscript was written according to the Ethical Codex of the institution.

Disclosure Statement

There is no conflict of interest regarding the publication of this paper.

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Fig. 1. Low-powered view of a hematoxylin-eosin stained tumor specimen. The tumor reaches deep into the dermis, without any connection to the epidermis. It infiltrates the subcutaneous fat and is composed of solid alveolar structures consisting of uniform cells scattered around mucinous secretion, forming cribriform structures.

Fig. 2. Low-powered view of a hematoxylin-eosin stained tumor specimen. Small, uniform cells prevail, with rounded and oval nuclei and scarce cytoplasm. The lobules are surrounded by a thick hyaline membrane. The mitotic activity is low with a mitotic index of 2, 3 ($\times 10$). There is no perineural invasion.