

CASE REPORT

Skin spiradenocarcinoma – case presentation

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Abstract

Malignant eccrine spiradenoma is an extremely rare skin tumor of sweat gland origin. The available literature data indicates that spiradenocarcinoma nearly uniformly arises from a benign preexisting spiradenoma. Etiology is unknown but previous trauma is believed being an implicated factor. The article presents the clinical observation of a 34-year-old female patient, diagnosed with cutaneous spiradenocarcinoma of the left thigh, treated multidisciplinary: surgery and chemoradiotherapy. The presentation includes clinical, histopathological and therapeutic diagnosis aspects, arisen difficulties of histological diagnosis and literature data regarding treatment options for this type of tumor. In this case, surgery followed by second surgery intervention was performed due to the continuing development of local disease. After surgery, the patient performed external beam radiotherapy (EBRT) to tumoral bed (total dose of 50 Gy) and inguinal lymph nodes (total dose of 50 Gy), followed by six cycles of chemotherapy (CMT) (Carboplatin + Paclitaxel) with complete response. At the moment, the patient shows no evidence of recurrence or metastatic disease during the follow-up.

Keywords: spiradenocarcinoma, diagnosis, surgery, radiation therapy.

Introduction

Spiradenocarcinoma is a serious form [1] of sweat gland carcinoma arising from malignant transformation of a spiradenoma with a long evolution [2], affecting mainly young patients [3]. It is a very rare tumor that can occur in any part of the body but is most commonly seen in the upper extremities and the trunk, in 92% of reported cases [4]. All spiradenocarcinoma contain areas of benign precursor lesion in the center or the periphery and in the absence of a specialist focused on benign tumors can be confused with other malignancies [5]. The clinical course of diseases is aggressive, by appearance of local recurrence and metastasis, it was reported a mortality of 39% in the absence of treatment [6]. Metastases often develop in the lymph nodes, bones, and lungs [4]. As first line, treatment in these types of tumors is radical surgery [2].

In this article, we present the case of a 34-year-old young female patient and we also review the data from the literature regarding this type of tumor.

Case presentation

This study brings up the case of a 34-year-old patient diagnosed with skin spiradenocarcinoma located in the left thigh. The patient was admitted to the Department of Radiotherapy, "St. Apostle Andrew" Emergency Hospital, Galați, Romania, with a lump in left thigh and in the femoral lymphadenopathy, in January 2011, for radiation therapy.

The first signs of disease occurred in August 2010, when patient presented in a surgical department for the of a left thigh tumor, painful, ulcerated, which has changed size and become painful through a minor trauma. The patient denied the existence of skin cancer in any family

member, but described the existence of a painless lump in a post-trauma site since 20 years ago.

In September 2010, in the Department of Surgery, "Dr. Aristide Serfioti" Military Hospital, Galați, surgical excision of the tumor formation and lymphadenectomy of the inguinal nodes was performed. The histopathological (HP) examination conducted reveals the presence of an epidermoid squamous cell carcinoma, moderately to poorly differentiated (G2–G3) and lymph nodes with sinusal histiocytosis (Figures 1–3). Immunohistochemistry (IHC) tests were recommended.

The patient diagnosed with epidermoid squamous cell carcinoma was guided to "Prof. Dr. Alexandru Trestioreanu" Oncological Institute, Bucharest, Romania, for initiating treatment but, in September 2010, the tumor recurrence and the presence of inguinal lymph nodes on the left side were detected. After the interdisciplinary consultation of Oncological Commission, the radical excision of tumor formation was decided.

The IHC tests performed at "Victor Babeș" National Institute for Research and Development in Pathology and Biomedical Sciences (Bucharest), on excision piece from "Dr. Aristide Serfioti" Military Hospital revealed: carcinoembryonic antigen (CEA) negative, BerEP4 negative, cytokeratin (CK) 34βE12 diffuse positive in tumoral cells, epithelial membrane antigen (EMA) positive in tumoral cells, progesterone receptor (PGR) negative, Periodic Acid–Schiff (PAS) positive in tumoral cells, p53 positive. The histopathological aspect correlated with immunohistochemical tests sustains the diagnosis of malignant tumor of sweat glands – spiradenocarcinoma.

In "Colentina" Hospital (Bucharest) it was performed the second surgical intervention with local flap to cover the defect created in the entire thickness of the thigh. The

HP result highlights the spiradenocarcinoma diagnosis. On November 2010, the IHC tests performed in the Department of Pathology, “Colentina” Hospital, reveal that HP layout is compatible with a squamous cell carcinoma (SCC)/SCC moderately differentiated component. Immunophenotype of cell proliferation exclude a SCC developed from squamous epithelium but not exclude a SCC developed in an area of squamous metaplasia. Also,

immunophenotype of tumor proliferation can be interpreted as consistent with a malignant tumor of sweat glands, taking in consideration the modest expression of EMA. In this context, raise these suspicions of diagnosis: either spiradenocarcinoma local recurrence or metastasis of cutaneous squamous cell carcinoma, the starting point being most likely lung or cervix.

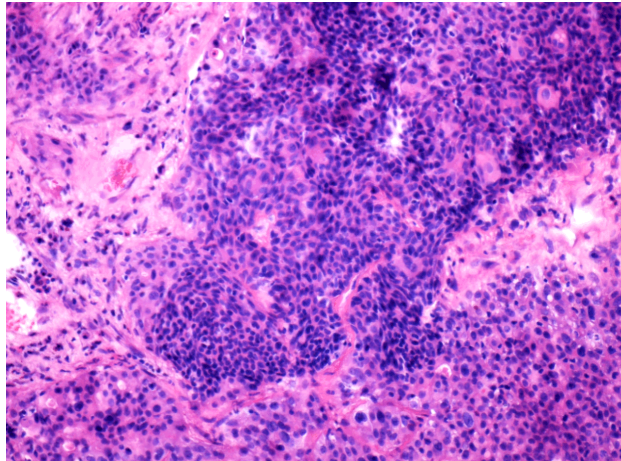


Figure 1 – Squamous cell carcinoma with highly histological grade (G3 – poorly differentiated) with areas of squamoid cells (inferior left side of the image), which are transformed and continued with areas of basaloid cells (superior side of image). HE staining, ×200.

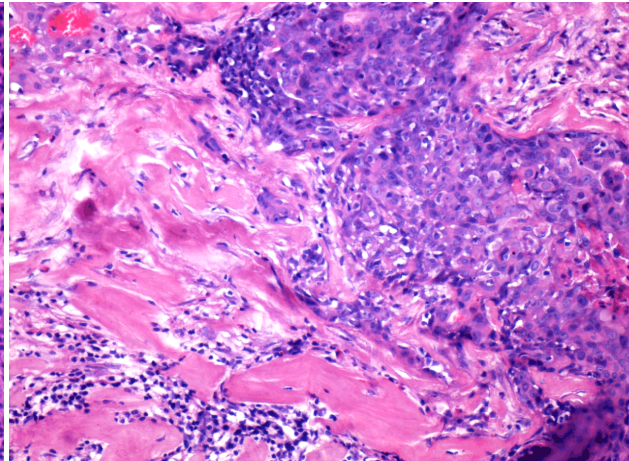


Figure 2 – Squamous cell carcinoma with highly histological grade (G3 – poorly differentiated): area of neoplasia with irregular contour, with different cell characteristics, partial squamous and partial basaloid. HE staining, ×200.

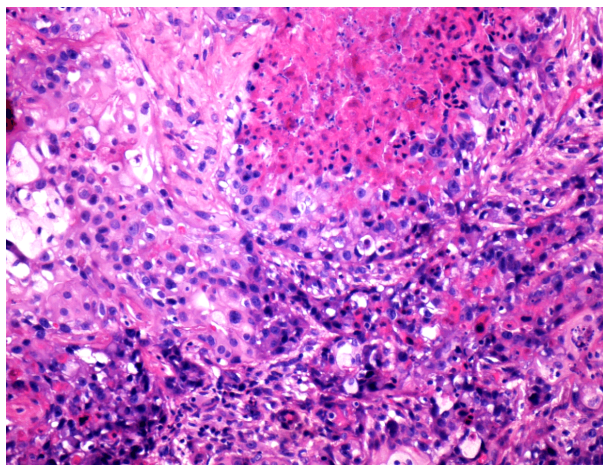


Figure 3 – Squamous cell carcinoma with highly histological grade (G3 – poorly differentiated): squamous areas with tumor necrosis (superior part of the image). Important nuclear and cytoplasmic pleomorphism, typical and atypical mitosis are present. HE staining, ×200.

The patient performs additional imaging tests, gynecological, colposcopic and Pap smear examination, computed tomography (CT) of the thorax, abdomen and pelvis. It requires a second pathological opinion at “Prof. Dr. Alexandru Trestioreanu” Oncological Institute, which concludes in diagnosis: spiradenocarcinoma – related sweat glands, moderately differentiated (G2), two nodes with carcinomatous metastasis over 0.2 cm.

Investigations conducted excluded the possible differential diagnosis suspected: ultrasound examination of the left thigh (March 3, 2011) – no changes and no post-operative left inguinal lymph nodes; Pap smear test – identify smear negative for intraepithelial malignancy

lesion; abdominal and pelvic magnetic resonance imaging (MRI) and CT thorax native with intravenous contrast substance show no signs of abnormality.

In this context, the patient was referred to the “St. Apostle Andrew” Emergency Hospital (Galați) for external beam radiotherapy (EBRT). After signing the informed consent for radiotherapy and for chemotherapy (CMT), it was decided to performed a total dose (TD) of 50 Gy to the tumor bed and TD 50 Gy to the inguinal lymph nodes areas with good compliance, followed by six CMT (Carboplatin + Paclitaxel) with complete response. Now, three years after treatment, the patient is without signs of local recurrence or distant metastases.

Discussion

Spiradenocarcinoma was first described in 1972 by Kersting & Helwig [7]. This type of tumor is an aggressive form of sweat gland carcinoma with bad prognosis [1, 8], resulting in malignant transformation of a long evolving spiradenoma, generally 20–30 years [2], literature reminding possibly malignant transformation mechanism as a possible trauma [6, 9]. It is a very rare tumor, quite aggressive, which can occur in any part of the body but is most commonly seen in the upper extremities, trunk [4], breast [10], scalp [11], eyelid [12] are reported only 18 cases that occurred in the head and neck [1, 13]. The clinical aspects of spiradenocarcinoma are similar in most reported cases: either single node in almost 97% of cases [14], painful or painless, changing its characteristics at a moment in time, or as multiple nodules in approximately 2% of cases [15]. All spiradenocarcinoma contain benign precursor lesion areas in the center or the periphery of malignant lesion and in the absence of a specialist, the

benign tumor can be confused with other malignancies [5], and squamous cell carcinoma, synovial sarcoma, epidermoid sarcoma, metastatic carcinomas. The diagnostic confusion may occur with vascular neoplasia [8] due to increased vascularization within the lesion. In addition, in this case there were questions regarding the diagnosis. Frequently raised questions were: It is a squamous cell carcinoma? It is a metastasis of a cervical cancer or cutaneous metastasis of lung squamous cell carcinoma? All investigations excluded the suspicion of skin metastases of lung primary tumor or starting point in the cervix. Spiradenocarcinoma mainly affects young patients [3], and in this case certifies this statement, with no gender predilection [8]. Clinical course is aggressive, with the appearance of local recurrence and also maybe metastasis, which develops most often in lymph nodes, bones, lungs, brain, and liver [4] and less frequently in a distant site. When distant metastasis occurs, the prognosis is unfavorable [8]. In this case, the patient did not develop metastases, as the chest X-ray and MRI demonstrated, which allowed surgical intervention for recurrence. It is known from the reported cases in the literature, the first intention in the treatment of these types of tumors consists of radical surgery with safety margins of 1–3 cm, with removal of regional lymph nodes [2, 8], in order to prevent recurrence.

Spiradenocarcinoma diagnosis based on histological examination of the lesion correlated with the immunohistochemistry, which in this case had shown a variable expression of CK, CEA, EMA and S100, with an excess of the p53 protein that is associated with malignant transformation [16].

External beam radiotherapy (EBRT) is considered to be useful in preventing local recurrence, but the role of chemotherapy and hormonal therapy is not fully elucidated [17]. Because of the rarity of this type of tumor experience with chemotherapy is limited, Sridhar *et al.* reported symptomatic improvement and reduction in tumor size by hormone therapy with Tamoxifen to a patient with positive estrogen receptors [18]. A recent meta-analysis showed that patients without metastases after radical surgery have a survival rate of 100% without the presence of disease at 33 months and those who had distant metastases, underwent surgical re-intervention, and after EBRT and adjuvant CMT had a median survival of 12–24 months [17].

The study of Granter *et al.* [4] analyses 12 cases of malignant eccrine spiradenoma; seven tumors were located on the trunk, three on the extremities, and two in the head and neck region, all of them being large tumors (average size 7.5 cm). In all cases, continuity between benign eccrine spiradenoma and areas with malignant change was observed. The increased mitotic rate, necrosis, nuclear atypia, pleomorphism, and hyperchromasia, loss of nested and trabecular growth patterns and absence of a dual cell population were characteristics, which evidenced malignancy. One of these patients developed metastases to local lymph nodes five years after the primary tumor was resected but had no evidence of disease 16 months after resection of her lymph node metastases.

Another case report is one of Gómez Oliveira *et al.* [19]. These authors report case of a 75-year-old man

with a lesion in the nasolabial fold. After three surgical excisions, the patient was histologically diagnosed with malignant eccrine spiradenoma, stage IV, with bone metastasis. Palliative treatment with chemotherapy was performed. This case, also presents an extremely uncommon malignancy, difficult to diagnose and the diagnosis is based on histological findings. Frequently, the disease relapses can occur after incomplete tumor excisions and aggressive surgical treatment must be performed even if the tumor is benign [19].

We present this case because of the rarity of this type of malignant tumor in the literature, currently being reported only a few dozen of cases, but also because of diagnostic difficulties that arise, rising suspicion of spiradenocarcinoma starting point *versus* lung metastases or cervix.

At the moment, patient shows no evidence of recurrence or metastatic disease, it returned at three months follow-up in the first year, every six months in the 2nd year and annually thereafter, to track and detect a possible relapse. This requires chest X-ray, abdominal CT or MRI [6, 20].

Conclusions

Spiradenocarcinoma is an aggressive tumor with a poor prognosis that appears on a spiradenoma with a long evolution, whose diagnosis is particularly important because untreated lead to metastases and, eventually, death. First-line therapy should include wide local excision with safety margins of about 1–3 cm, with regional lymphadenectomy, representing the gold standard to decrease the rate of relapse. The role of EBRT and CMT remains unclear and will be determined later. Spiradenocarcinoma patients should be monitored over time to detect early recurrence or metastases. A team approach may be the best option for maximum optimization of managing diagnosis, treatment and monitoring the development of this pathology.

Conflict of interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

Author contribution

All authors contributed equally to this work.

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