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Basal cell carcinoma in the elderly

Cryosurgery or surgery – a case study with reference to the literature

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ABSTRACT

Introduction
The aging of society leads to an increase in the occurrence of basal cell carcinoma (BCC). BCC includes both superficial and nodular lesions with a good prognosis as well as foci that are difficult to treat and require a multidisciplinary approach. There are two basic methods of treating BCC, surgery to remove the tumor and cryosurgery. The paper presents a case of an 82-year-old female patient suffering from BCC in a non-advanced stage of the disease with the presentation of subsequent stages of treatment.
Aim of the study

An attempt was made to confront an alternative method of BCC treatment by cryosurgery with the first-choice procedure - surgical excision of the tumor with a margin of healthy tissues.
Description of the case

An individual clinical case study including the patient's medical records.
Conclusions
The work emphasizes the importance of comprehensive care for a patient diagnosed with BCC. Individualization of the diagnostic and therapeutic process is the basis for dealing with the elderly patient.

Keywords: Carcinoma, Basal Cell; Cryosurgery; General Surgery

Introduction

Basal cell carcinoma (BCC) is the most common skin cancer in the world [Figure 1]. It extremely rarely metastasizes to internal organs that is in less than 0.1% of cases [1]. The molecular basis of tumor development is the activation of the Hedgehog signaling pathway [2]. BCC development factors include chronic, intermittent exposure to ultraviolet radiation, fair skin, age over 50 with a peak incidence over 75, male gender, immunodeficiencies, and some hereditary diseases such as Gorlin-Goltz syndrome or parchment skin [3]. Basal cell carcinomas are a heterogeneous group of neoplasms, including superficial and nodular lesions with a good prognosis, as well as foci difficult to treat, requiring consultation of multidisciplinary teams [2]. Advanced tumors, i.e. those that have metastasized to local or distant lymph nodes and organs, or locally invasive tumors that massively infiltrate important structures such as eyes, nose and brain, currently account for approximately 1-10% of BCC. A special form of BCC characterized by an increased risk of malignancy is giant basal cell carcinoma (GBCC), described as an aggressive tumor with the largest transverse dimension exceeding 5 cm. In 1% of cases, GBCC develops on the basis of BCC [4].

Primary health care plays a key role in the initial differentiation of skin lesions. When BCC is suspected, the patient is referred to a dermatology clinic where it is possible to exclude other malignant skin tumors, e.g. melanoma. It should be remembered that BCC covers approximately 80% of non-melanoma skin tumors [5]. A quick diagnosis and the use of appropriate therapy enable the majority of patients with BCC to be cured [6].

The first-line treatment for BCC is surgical resection with a margin of healthy tissue or Mohs surgery. Alternative methods of treatment mainly include cryosurgery, brachytherapy, photodynamic therapy and chemotherapy [2].

The prognosis of advanced basal cell carcinoma of the skin has improved with the development of systemic drugs targeting the Hedgehog signaling pathway (vismodegib, sonidegib). The indications for the use of these medications are BCCs that do not meet the criteria for surgical treatment or radiotherapy, or in the case of recurrence after surgical treatment [7].

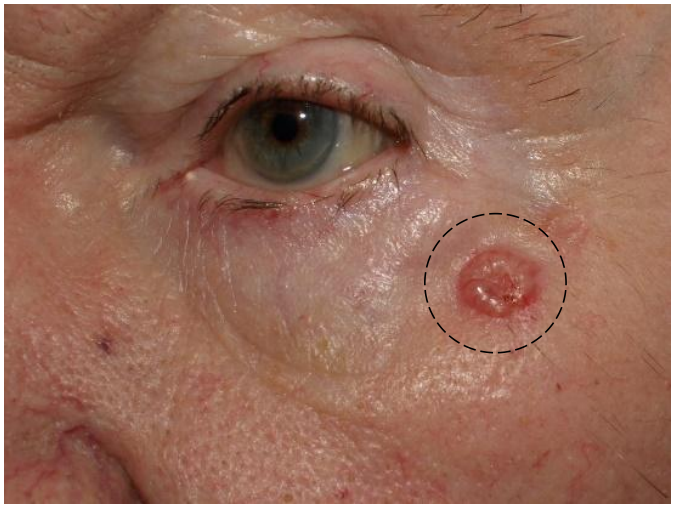

Fig.1. Typical image of basal cell carcinoma of the skin (illustrative photo) [8].

Case presentation

An 82-year-old patient reported to a primary care physician in August 2021 with a tumor located within the right temple, 1x1 cm, roundly framed, without signs of purulent secretion. The woman reported no pain. The patient had a medical history of post-pulmonary embolism and was taking an anticoagulant drug (acenocoumarol at a dose of 3 mg per day). A primary care physician with suspected BCC referred the patient to a dermatology clinic for further diagnosis and treatment.

In August 2021, a dermatologist examined with a dermatoscope and concluded that the skin lesion was a BCC. During the same visit, he performed cryosurgery in the outpatient setting. It should be noted that no lesion biopsy was taken prior to the procedure. The wound was protected with a sterile dressing. A regular change of the dressing was recommended and a follow-up visit was scheduled (one month after the tumor was removed). During the first follow-up visit proper wound healing was observed.

Six months after the procedure, in February 2022, the patient returned to the dermatologist due to bleeding from the site of the primary location of the tumor [Fig. 2.]. The lesion's size increased to 2x1.5 cm. The patient reported no other complaints. The dermatologist recommended surgical excision of the lesion.

Fig. 2. Recurrence of BCC after cryosurgical treatment.

In February 2022 surgical oncologist took a biopsy that confirmed the tumor as a BCC. In April 2022 the lesion was removed within the boundaries of healthy tissues. Five surgical sutures were placed and a daily change of the sterile dressing with the wound washing using an octenidine solution was recommended. 6 months after the surgical procedure (October 2022), no signs of BCC recurrence were found [Fig. 3]. There weren't any indications for adjuvant treatment in the form of brachytherapy.

Fig. 3. The scar after surgery. No BCC features.

Discussion

The choice of appropriate treatment for non-advanced BCC has been a controversial issue for many years. Many dermatology offices are equipped with equipment for cryosurgery, as one of the basic methods of combating common and plantar warts, anogenital warts, molluscum contagiosum or seborrheic warts. The low operating costs of this type of procedure and the possibility of obtaining a quick therapeutic effect encourage dermatologists to use this method also in the treatment of tumors [Fig. 4.], [9].

Fig. 4. "Cryogun" used to atomize liquid nitrogen [10].

The procedure is performed on an outpatient basis and does not require the discontinuation of anticoagulant drugs or bridging therapy necessary during preparation for surgery. However, cryosurgery is an alternative treatment for BCC. The first-choice method remains surgical excision within healthy tissues after histopathological diagnosis of the lesion [11].

Dermoscopy is an excellent tool for the initial diagnosis of malignant skin neoplasms, but it does not replace histopathological examination, the result of which determines the final diagnosis of the disease [12]. Only a mutual dialogue between the two diagnostic methods enables a comprehensive BCC qualification according to the Sabbatsberg model [Fig. 5].

A modification of traditional cryosurgery turns out to be freezing after taking a histopathological biopsy, according to Swedish scientists Oscar Finskas et al. The application of the procedure is limited to the diagnoses of Glas IA and IB and II according to the Sabbatsberg model, i.e. BCC with a low risk of malignancy [13].

It should be remembered that the result of a standard biopsy does not provide the doctor with details of the Glas II stage, therefore it seems reasonable to direct patients with histopathological diagnosis of BCC directly for surgery under local anesthesia.

<table>
<tr><td>GLAS IA – non agressive</td><td>GLAS IB – non agressive</td></tr>
<tr><td>1. growth pattern: nodular or nodulo-ulcerative</td><td rowspan="4">multifocal appearance, superficial, often cell-sparse tumors with histologic appearance with above according to 3-4.</td></tr>
<tr><td>2. invasion depth: not involving subcutaneous tissues, cartilage, musculature, or bone</td></tr>
<tr><td>3. invasion front: round distinct border zone against underlying tissue</td></tr>
<tr><td>4. size and appearance: relative cell-rich tumors, distinct rounded border zones. obvious palisading appearance</td></tr>
<tr><td colspan="2">GLAS II – intermediate forms between I and III</td></tr>
<tr><td colspan="2">GLAS III</td></tr>
<tr><td colspan="2">1. growth pattern: infiltrative</td></tr>
<tr><td colspan="2">2. invasion depth: subcutaneous tissue, cartilage and bone involving</td></tr>
<tr><td colspan="2">3. invasion front: irregular diffuse invasion without a clear border</td></tr>
<tr><td colspan="2">4. size and appearance: relative cell sparse clusters of cells with pointy irregular offshoots. no palisading appearance. many cell clusters 1-2 cells thick, here and there wedge-shaped appearance</td></tr>
</table>

Fig. 5. Histological definition according to Sabbatsberg's model [14].

Conclusions

In this case, cryosurgery did not stop the development of the disease. Finally, 8 months after freezing, the patient was qualified for surgical treatment. The procedure was performed with a margin of healthy tissues under local anesthesia without complications, and after another 6 months no signs of BCC recurrence were found. In this case, the use of cryosurgery extended the diagnostic and therapeutic process of BCC. Immediate histopathological biopsy of the tumor could significantly shorten the path from the final diagnosis to long-term elimination of the lesions. The choice of treatment method for BCC should take into account the general condition of the patient, the progression of the neoplastic disease and the patient's preferences. Referring elderly patients for BCC cryosurgery, as if by choice, without taking into account additional prognostic factors, seems to be an unjustified therapeutic procedure.

Conflicts of Interest

The authors have declared no conflict of interest.

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