



Giant Basal Cell Carcinoma Causing Axillary Contracture: A Case Report of an Unusual Localization of an Advanced Case

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Basal cell carcinoma (BCC) is the most common type of non-melanoma skin cancer. Although BCC arises most commonly in sun-exposed areas of the body, such as the head and neck, it infrequently can be seen in sun-protected parts as well. Axilla is one of the least encountered areas of BCC. Delay in the diagnosis or management alongside negligence of the patient can lead to a tumor reaching a giant size. We report a case of giant axillary BCC in a 59-years old female patient with no known risk factors for skin cancers. The tumor was excised with wide margins, and the tissue defect was reconstructed with latissimus dorsi musculocutaneous flap. A 3-year follow-up did not show any sign of recurrence or metastasis.

Keywords: Basal cell carcinoma, Latissimus dorsi, Neoplasms, Skin cancer

INTRODUCTION

Basal cell carcinoma (BCC) is the most common skin cancer and constitutes 80% of non-melanocytic skin cancers¹. Although most cases are located in head and neck region, 9% can occur in areas of skin not exposed to sun, for example, perineal region, nipple, areola and axilla². BCC located in axillary region is extremely rare, and most of the patients do not show any relevant risk factors for skin cancer³. According to American Journal of Cancer Committee (AJCC), any BCC with a diameter more than 5 cm is known as giant BCC⁴. Less than 0.5% of BCCs reach this size. Giant BCCs most commonly appear in the face and on the back. Here we report a female case with giant BCC in the right axilla. To our knowledge this is the first case of giant axillary BCC reaching this size.

CASE REPORT

A fifty-nine years old female patient presented to us four years ago with an open wound in right axilla for a duration of one year. The condition started as a small mass that was recognized by the patient accidentally. The mass started to increase gradually till three years ago, when it was associated with foul-smelling discharge. Medical history was irrelevant for risk factors of skin cancer. There was no significant family history of skin cancer. On physical examination the patient had an 8×6 cm ulcer with elevated edges in right axillary region (Fig. 1). The base of the ulcer extended deeply into the axilla and it was filled with granulation tissue. There was a brownish discharge with foul smell. Abduction of right arm was limited to 50 degree due to contracture effect of the lesion. Neurovascular examination of upper extremity revealed hypoesthesia of the volar and medial aspects of forearm. No regional lymphade-





Fig. 1. Giant basal cell carcinoma in axillary region.

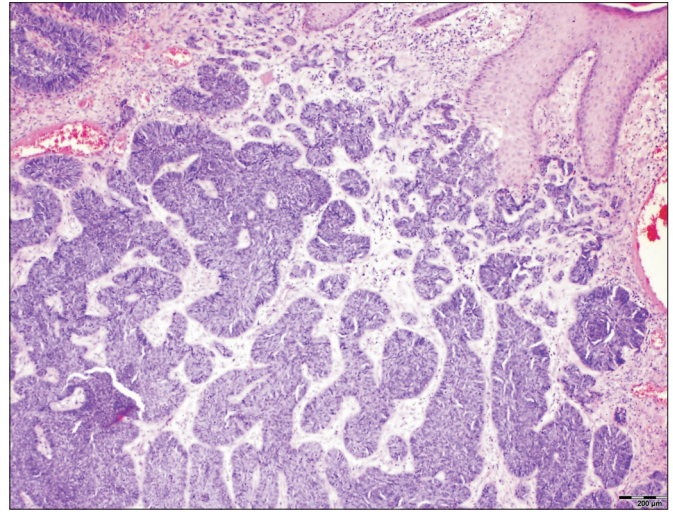


Fig. 2. Histopathology of basal cell carcinoma Atypical basaloid cells with peripheral palisading showing invasion of the dermis in a nodular pattern (H&E, $\times 40$).

nopathy. Laboratory tests, chest radiography and computed tomography (CT) of chest and abdomen were also normal.

Magnetic Resonance Imaging of axillary region showed a local tumoral invasion enclosing brachial plexus and axillary artery and vein. An incisional biopsy was performed and confirmed the diagnosis of BCC. Wide excision and reconstruction with latissimus dorsi musculocutaneous flap was planned. In supine position, tumor excision was done with 1 cm free surgical margins. Level I axillary lymph nodes were included in the same specimen. At the base of the tumor, the lesion was dissected meticulously from underlying neurovascular structures. Immediately following tumor removal, an abduction of 140 degree has been recovered. On lateral position, 7 \times 12 cm ipsilateral latissimus dorsi musculocutaneous flap was elevated and adapted on tissue defect in the axilla. Histopathological investigation confirmed a mixed type BCC with nodular, adenoid and metatypic patterns (Fig. 2). The depth of invasion was 35 mm. There were an extensive ulceration and scattered necrotic areas with no lymphovascular invasion. Histopathological assessment showed a positive surgical margin at the base of the tumor where the lesion was in direct contact with axillary artery while peripheral margins were free of tumoral involvement with least resection margin located 0.8 cm from the lesion. There was no microscopic evidence of nodal metastasis. Patient was consulted to oncology for advanced investigations and adjuvant therapy. The patient had 15 sessions of radiotherapy after the surgery. Simultane-



Fig. 3. (A) Clinical photograph of axilla 6 months after the surgery showing a successful reconstruction. (B) Achievement of 140 degree of shoulder abduction.

ously, the patient was started on Vismodegib (*Erivedge*[®]) on postoperative 1st month at a dosage of 150 mg given orally each day. Furthermore, the patient was consulted to a physiotherapist for shoulder movements. Shoulder abduction of 160 degree was gained after three months of rehabilitation (Fig. 3). The patient was followed-up for 3 years with no sign of recurrence or metastasis.

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will

be made to conceal their identity, but anonymity cannot be guaranteed.

DISCUSSION

The case presented is unique in that it illustrates two rare entities of BCC; the giant dimension and the axillary location of the tumor. Although the ultraviolet radiation exposure is one of the most important risk factors for BCC, this truth does not explain the incidence of these skin cancers in sun-protected parts, like the axilla. Heckmann et al.⁵ proposed a theory explaining why BCC may occur in sun-protected parts. Certain concave parts of the body have numerous skin folds with reduced skin tension. A disturbed cell-matrix interaction in these areas may be a potential risk factor for skin cancers. Strickland et al.⁶ supposed that tumorigenesis in these areas can be explained by the effect of ultraviolet in distant sun-exposed parts leading to decreased immune surveillance.

The total number of axillary BCC barely reached 69 up until February 2014⁷. In a review done by Cohen et al.⁷, axillary BCC presented as asymptomatic nodule in most of the patients. Unlike most of the axillary BCC, our case is presented as an ulcerative lesion. Although giant BCC most commonly appears in the face and on the back, the atypical localization in our case was a prominent feature.

The number of reported cases of giant axillary BCC cases is limited. Wani et al.⁸ reported a similar case with a size smaller than that of our case (8×5 cm). Yii and Niranjana⁹, reported a case of axillary BCC with a size of 6×3 cm, in which the patient had a total of four recurrences within four years all treated with tumor excision and primary closure. To our knowledge, our case is the largest reported giant axillary BCC in the literature.

A skin cancer may reach a giant dimension due to negligence, wrong or delayed diagnosis. The reason behind the giant dimension of our case was patient's negligence despite being of high socioeconomic status. Also, tumors on axilla can be easily hidden, and patients may defer treatment in the early course of the disease.

The risk of distant metastasis in axillary BCC is extremely rare, while in giant BCC this risk is increased with proportion to the size of the tumor. Lesions with diameter more than 5 cm have a 25% risk of metastasis, and the risk is doubled for lesions more than 10 cm in size¹⁰. Systemic investigations in

our patient showed no sign of metastasis.

The mainstay of treatment of giant BCC is surgical. Although there is no clear consensus regarding the adequate margin of excision, some authors advise a 10 mm of free surgical margin¹¹.

Reported cases of giant BCC are mostly localized on the back or extremities where the tissue defect resulting from tumor excision can be covered with various options. The challenge in our case lies in the simultaneous atypical site, the enormous size of the tumor and the associated joint contracture. Reconstruction of joint surfaces necessitates viable tissue coverage in a form of skin flap or skin-muscle flap to provide enough joint mobility. In the case reported by Yii and Niranjana⁹, axillary tissue defect resulting from BCC excision was reconstructed with skin graft that failed to take initially, followed by a second session of successful grafting. Regarding our case, we preferred the use of latissimus dorsi myocutaneous flap as the tissue defect was large enough to necessitate a bulky flap to fill the three dimensional shape of axilla while allowing primary closure of the donor site.

At the time of diagnosis of giant BCC, the incidence of local invasion of extradermal structures like muscles, bones or cartilages, is increased. In our case, an invasion of axillary vessels was seen both in imaging studies and intraoperatively. The tumor was removed with preserving the underlying structures intact. As was expected, the surgical margin of the base was positive for tumor involvement. For this reason, the patient was consulted to the department of oncology for further adjuvant therapies.

Regardless of the margin of excision in cases of giant BCC, the risk of residual tumor is reported to be 68%¹². We feel that the possibility of recurrence in our case is high because of residual tumor that we were unable to remove around vital neurovascular structures. Anyhow, a three-year follow up showed no signs of recurrence. In cases of residual tumor chemotherapeutic agents like vismodegib, imiquimod, methotrexate and cyclophosphamide can be used. Vismodegib is an inhibitor or smoothed homolog protein in the Hedgehog signaling pathway, has been used in locally advanced BCCs when patients are not candidates for surgery¹³.

In summary, we feel that the case presented is quite rare for its combined features of atypical localization and giant size. We believe that latissimus dorsi muscle flap is an advisable option for axillary tissue defects.

CONFLICTS OF INTEREST

The authors have nothing to disclose.

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REFERENCES

1. Rubin AI, Chen EH, Ratner D. Basal-cell carcinoma. *N Engl J Med* 2005;353:2262-2269.
2. Betti R, Brusca C, Inselvini E, Crosti C. Basal cell carcinomas of covered and unusual sites of the body. *Int J Dermatol* 1997;36:503-505.
3. LeSueur BW, DiCaudo DJ, Connolly SM. Axillary basal cell carcinoma. *Dermatol Surg* 2003;29:1105-1108.
4. Beahrs OH; American Joint Committee on Cancer. Manual for staging of cancer. 3rd ed. J. B. Lippincott, 1988.
5. Heckmann M, Zogelmeier F, Konz B. Frequency of facial basal cell carcinoma does not correlate with site-specific UV exposure. *Arch Dermatol* 2002;138:1494-1497.
6. Strickland PT, Creasia D, Kripke ML. Enhancement of two-stage skin carcinogenesis by exposure of distant skin to UV radiation. *J Natl Cancer Inst* 1985;74:1129-1134.
7. Cohen PR. Basal cell carcinoma of the axilla: review of the world literature. *Am J Clin Dermatol* 2014;15:95-100.
8. Wani GM, Ahmad SM, Qayoom S, Khursheed B. Neglected basal cell carcinoma in axilla. *J IMA* 2012;44:44-1-9224.
9. Yii NW, Niranjana NS. Metastatic basal cell carcinoma of the axilla: report of a case and reconstruction with an island lateral pectoral flap. *Ann Plast Surg* 2000;45:78-82.
10. Aldhaban S, Marc S, Eshki M, Girod A, Boissonet H, Chapelier A, et al. Giant basal cell carcinoma with regional lymph node and distant lung metastasis. *Eur J Dermatol* 2011;21:972-975.
11. Zoccali G, Pajand R, Papa P, Orsini G, Lomartire N, Giuliani M. Giant basal cell carcinoma of the skin: literature review and personal experience. *J Eur Acad Dermatol Venereol* 2012;26:942-952.
12. Randle HW, Roenigk RK, Brodland DG. Giant basal cell carcinoma (T3). Who is at risk? *Cancer* 1993;72:1624-1630.
13. Basset-Seguín N, Hauschild A, Grob JJ, Kunstfeld R, Dréno B, Mortier L, et al. Vismodegib in patients with advanced basal cell carcinoma (STEVIE): a pre-planned interim analysis of an international, open-label trial. *Lancet Oncol* 2015;16:729-736.