QANUN MEDIKA
JURNAL KEDOKTERAN FKUM SURABAYA
http://journal.um-surabaya.ac.id/index.php/qanunmedika

Case Report

Wide excision of Basal Cell Carcinoma on the upper extremity: A case report

Maylita Sari[1*], Putri Halla Shavira[1], Bagus Haryo Kusumaputra[1], Irmadita Citrashanty[1], M. Yulianto Listiawan[1]

1) Department of Dermatology and Venereology, Faculty of Medicine, Universitas Airlangga/Dr. Soetomo General Academic Hospital, Jl. Prof Dr. Moestopo No. 6-8, Surabaya, 60286, Indonesia.

ARTICLE INFO

Submitted : 8th *July 2022*
Accepted : 3rd *December 2022*
Published : 27th *July 2023*

Keywords:
Female, basal cell carcinoma, upper extremity, wide excision surgery

Correspondence:
sharylita@gmail.com

ABSTRACT

Basal cell carcinoma (BCC) is the most common skin cancer, usually occurring in the sun-exposed area, such as the head and neck, but also seen in less common areas like the upper or lower extremities. The initial treatment of BCC lesions is completing tumor removal. One of the standard therapy for BCC is wide surgical excision, as it is highly efficacious. A 76-year-old female patient complained of a wounded blackish lump on the left upper extremity for about 2 years. It started small, then grew bigger. Complained of itchiness, but no pain. The lump easily bled when accidentally touched. Dermatology examination identified a hyperpigmented nodule about 1.5 cm, with a clear border, irregular raised edges, slightly rough surface, and erosion. A dermoscopy examination showed short-fine telangiectasia, blue-grey ovoid nests, and ulceration. The patient was diagnosed with suspected BCC and underwent biopsy, also wide excision surgery. Histopathology showed pigmented BCC. One month later, surgery proved a good result. Selecting appropriate therapy in BCC should be given to reduce the recurrence rate. The common treatment for BCC is wide surgical excision, because of its association with a low recurrence rate and the ability to confirm residual tumor pathologically. In conclusion, wide excision surgery is one of the effective therapy options for BCC

QANUN MEDIKA
JURNAL KEDOKTERAN FKUM SURABAYA
http://journal.um-surabaya.ac.id/index.php/qanunmedika

INTRODUCTION

Basal cell carcinoma (BCC) which belongs to the non-melanoma skin cancer group, is the most prevalent form of skin neoplasm and the most common type of cancer in humans (Hooshang *et al.*, 2017). Basal cell carcinoma mostly locates on the sun-exposed areas, such as the head and neck. It could also locate on trunks, upper, and lower extremities (Hooshang *et al.*, 2017). Basal cell carcinoma clinical manifestation varies based on its type. However, the common features of BCC are translucent papules or nodules, ulceration, telangiectasias, and the presence of rolled border (Tang *et al.*, 2019).

The incidence of BCC varies and depends on race and geographic factors (Tanese, 2019). In the United States, it is estimated that more than 3 million new cases occur each year (Tang *et al.*, 2019). In Australia, the incidence rate of BCC is about more than 1000/100.000 individuals a year (Tanese, 2019). In Indonesia, particularly in Jakarta, there was a retrospective study between 2014 to 2017, that found the incidence rate of BCC was about 66.9% out of 263 all skin cancer cases (Wibawa *et al.*, 2019). Basal cell carcinoma is more frequent in patients older than 60 years of age. Men are affected slightly more often than women (Tang *et al.*, 2019).

Basal cell carcinoma is diagnosed by medical history, physical examination, and additional examination, such as dermoscopic and histopathology. Patients usually complain of skin lesions such as enlarged moles, bleeding easily, or ulcers. Physical examination shows the classic picture of rodent ulcers, an ulcer with one side that is unevenly shaped, like the picture of a "rat bite". Usually accompanied by hyperpigmentation at the edges and ulcers in the middle (Suyuthie *et al.*, 2022). The dermoscopic examination would improve the diagnosis of suspicious lesions. Further, histopathology essentially confirms the diagnosis of BCC (Tanese, 2019).

Management of BCC is guided by anatomic location and histological features. In the treatment of primary lesions of BCC, the initial goal is to complete removal, whether by Mohs micrographic surgery, surgical excision, curettage, cryosurgery, topical treatment, photodynamic therapy, or radiation therapy. Wide surgical excision is the most commonly used because of its association with a low recurrence rate and its ability to pathologically confirm residual tumors (Campione *et al.*, 2020; Tanese, 2019; Tang *et al.*, 2019). Furthermore, wide excision has a shorter procedure time, high cure rate in primary BCC, non-aggressive type BCC, and low-risk anatomic location of BCC. Also, it does not require interpretation from a dermatopathologist at the same time (Christensen & Leffell, 2019; Volis, 2021). So, it could be used for better diagnosis and therapy (Campione *et al.*, 2020). We would like to report a case of BCC that was successfully treated with wide excision surgery.

CASE

A 76-year-old female patient consulted Dermatology and Venereology Outpatient Clinic, Dr. Soetomo General Academic Hospital as referred by William Booth Hospital due to suspected squamous cell carcinoma with differential diagnosis of melanoma malignant based FNAB (fine needle aspiration biopsy) result. The patient complained of a wounded blackish lump on her left upper extremity for about 2 years. The wounded blackish lump started small as big as a mung bean. Then, it grew bigger. Itchiness followed, but no pain. The patient also informed us that the lump easily bled when accidentally touched. Since young, the patient never used sunscreen, and frequently was exposed to the sun due to daily activity. No lump complaint, tumor, or malignancy in the family.

QANUN MEDIKA
JURNAL KEDOKTERAN FKUM SURABAYA
http://journal.um-surabaya.ac.id/index.php/qanunmedika

Figure 1. Clinical manifestations of the BCC patient.

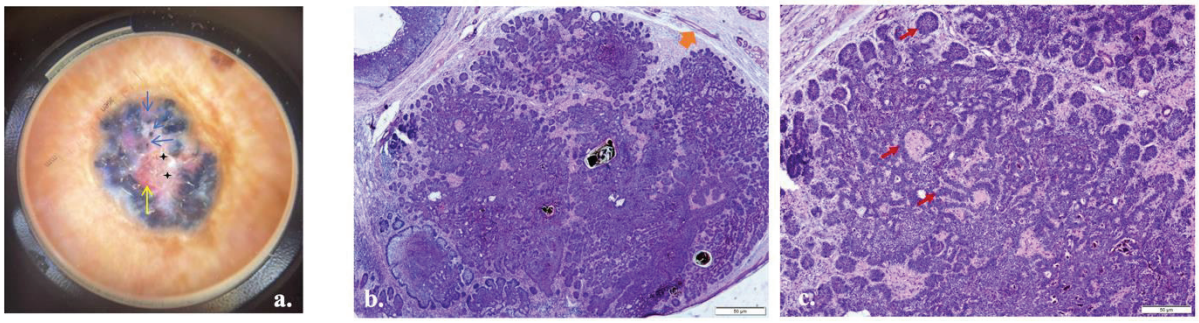

Figure 2. a. Dermoscopy showed short fine telangiectasis (black stars), blue-grey ovoid nests (blue arrows), also ulceration (yellow arrow) **b.** Histopathology showed tumor arranged to form hair follicles (orange arrow; 40x magnification) **c.** Tumor growth is arranged in solid nests, consisting of a proliferation of anaplastic basal epithelial cells with round-oval nuclei, mild pleomorphic, hyperchromatic, narrow cytoplasm. Also, arranged in palisade on the edges (red arrows; 100x magnification)

Based on the dermatological state, there was a hyperpigmented nodule with a diameter of about 1.5 cm on the left upper extremity region. Nodule had a clear border, irregular raised edges, slightly rough surface and there was erosion in the mid of it. Through dermoscopy examination, there were short-fine telangiectasia, blue-grey ovoid nests, and ulceration. According to medical history, physical, and additional examination, the patient was diagnosed with suspected BCC and secondary infection due to erosion in the mid of the nodule, with differential diagnoses of squamous cell carcinoma (SCC) and melanoma malignant. The patient was prescribed a broad-spectrum antibiotic, Cefixime tablets 2x100mg, Paracetamol tablets 3x500mg, and Fusidic acid cream two times daily for secondary infection within a week. After the secondary infection was treated, a biopsy and wide excision surgery were conducted.

QANUN MEDIKA
JURNAL KEDOKTERAN FKUM SURABAYA
http://journal.um-surabaya.ac.id/index.php/qanunmedika

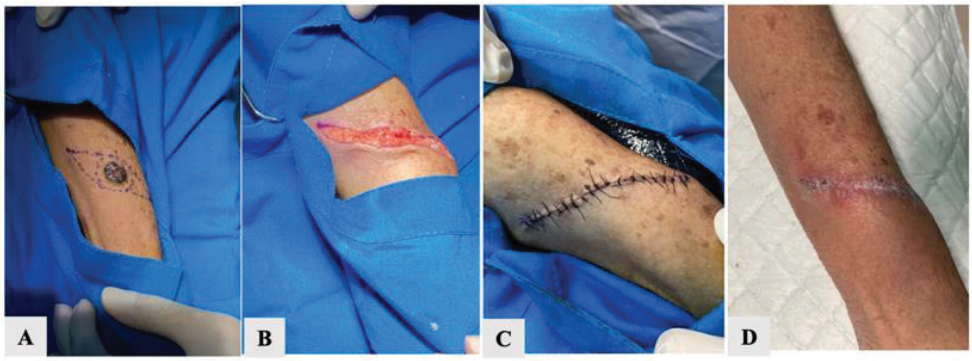

Figure 3. a. Design of wide excision, with elliptic form in 1:3 based on RSTL **b.** Wide excision was based on the design **c.** The patient had a surgical wound length of 10 cm, with 20 sutures **d.** One month after, surgery showed a good result.

DISCUSSION

Basal cell carcinoma (BCC) is the most common skin malignancy worldwide. It is a subtype of nonmelanoma cancer. It is characterized by a constantly increasing incidence in the population older than 60 years old, and because of widespread sun exposure (Fania *et al.*, 2020; Toha *et al.*, 2019) The most affected locations are head and neck. However, other locations, such as trunk, upper, and lower extremities could also be affected (Pratama & Kurnia, 2019) Research by Hooshang *et al.* (2017) mentioned that only 3.85% of 650 patients had BCC on the upper extremity and trunk. This might be due to culture and/or clothing style (Hooshang *et al.*, 2017). Although its mortality rate is not significantly high, this tumor could associate with significant morbidity and cost (Fania *et al.*, 2020; Thomson *et al.*, 2020)

Ultraviolet (UV) radiation is considered a major risk factor for BCC development, particularly the UVB spectrum (290 to 320 nm) which causes mutations in tumor suppressor genes. Other risk factors are old age, male, smoking, fair skin types I and II, arsenic exposure, and immunosuppression (Quazi *et al.*, 2020; Tang *et al.*, 2019). In this case, a 76-old Chinese female, and frequently was exposed to the sun due to daily activities. Also, the patient never used sunscreen. In this case, a 72-old Chinese female had lesions on her left upper extremity. it might due to culture and/or clothing style. She was exposed to UV due to her daily activities, also she never applied sunscreen.

The incidence rate of BCC varies. It depends on race and geographic location, such as latitude and sun exposure. In the United States, BCC incidence had been estimated to reach 4.3 million cases each year and increased 2% within 10 years (Dika *et al.*, 2020). Among Asians living in Singapore, the incidence rate of BCC increased from 1968 to 2006, especially among older, fair-skinned Chinese patients. In Dr. Cipto Mangunkusumo National Central General Hospital, Jakarta, Indonesia there was a retrospective study conducted between 2014 to 2017 that found the incidence rate of BCC was about 66.9% out of 263 all skin cancer cases (Wibawa *et al.*, 2019).

Diagnosis of BCC is based on the medical history, clinical examination, and additional examination, such as dermoscopy and

QANUN MEDIKA
JURNAL KEDOKTERAN FKUM SURABAYA
http://journal.um-surabaya.ac.id/index.php/qanunmedika

histopathology (Suyuthie *et al.*, 2022; Tanese, 2019). Clinical manifestation of BCC varies, it is based on different clinical subtypes. There are some clinical subtypes of BCC, such as nodular BCC, pigmented BCC, superficial BCC, and morphea-form. However, the common clinical manifestations of BCC are translucency nodules, ulceration, telangiectasias, and the presence of a rolled border. The dermoscopic examination could enhance the precision of the diagnostic and provide variants of BCC's certain subtypes. Meanwhile, the final and determined diagnosis is crucially concluded by using a histopathology examination (Litaiem *et al.*, 2020). Dermoscopic examination in BCC is based mainly on the presence of typical vascular and pigmented structures, (arborizing vessels, short-fine telangiectasias, blue-grey globules, and dots, maple leaf-like areas, spoke-wheel structures, in-focus dots) ulceration, and the absence of specific melanocytic structures (Ungureanu *et al.*, 2021). The histopathology features of BCC vary based on subtype, but most BCC share some common histologic characteristics. Basal cell carcinoma has large nuclei and relatively little cytoplasm. Although the nuclei are large, they may not appear atypical. Mitotic figures are absent. Frequently, slit-like retraction of stroma from tumor islands is present, creating peritumoral lacunae that are helpful in histopathologic diagnosis (Adhikari *et al.*, 2019; Niculet *et al.*, 2021; Tang *et al.*, 2019). In this case, the clinical examination showed a hyperpigmented nodule with a diameter of about 1.5 cm on the left upper extremity. Nodule had a clear border, irregular raised edges, slightly rough surface, and there was erosion in the mid of it. Through dermoscopy examination, there were short-fine telangiectasia, blue-grey ovoid nests, and ulceration. A histopathology result was pigmented basal cell carcinoma with adnexa tissue differential. Base and border tissues were free from tumor cells. As a result, this patient was diagnosed with pigmented BCC.

In BCC, although recurrence and metastatic rates are very low, individuals should always be aware whenever there are signs of recurrence. In the United States, a cohort study by Chren *et al.* (2011) reported a recurrence rate of 4.0%. Khan *et al.* (2014) showed that age, tumor size, immune conditions, and modality of therapy were the affecting factors for the recurrence (Chren *et al.*, 2011; Khan *et al.*, 2014).

Wide surgical excision is the conventional technique that is effective for BCC cases. It is because of its association with a low recurrence rate and its ability to confirm the residual tumor (Widiatmoko *et al.*, 2021). The local recurrence rate for surgical excision is 2.3% to 10.1% after 5 years of complete excision (Morgan *et al.*, 2020). It is recommended that a 3-mm margin would clear up the tumor in 85% of cases. A 4-5-mm peripheral margin would increase the clearance rate to 95% (Widiatmoko *et al.*, 2021). However, other treatments, such as curettage, desiccation, cryosurgery, topical treatment, photodynamic therapy, and radiation therapy could also be preferred according to the patient's condition, tumor location, and risk of recurrence (Tanese, 2019; Tang *et al.*, 2019). In this case, it is a primary cause of BCC on the upper extremity, that the affected area did not require cosmetic preservation and a non-aggressive type of pigmented BCC lesion. As a result, wide excision is a good treatment option for the patient. One week before surgery, the patient was treated with antibiotics for a secondary infection. Then, wide excision surgery was performed. The design of the elliptical form in 1:3 was based on relaxed skin tension lines (RSTL). The patient had a surgical wound length of 10 cm long, with 20 sutures. One month after, surgery showed a good result and there were no signs of recurrence.

QANUN MEDIKA
JURNAL KEDOKTERAN FKUM SURABAYA
http://journal.um-surabaya.ac.id/index.php/qanunmedika

CONCLUSION

This report describes a case of BCC on the upper extremity which was successfully treated with wide excision surgery. Accurate medical history and physical examination are essentially needed to enable the diagnosis of BCC. Additional examinations, including dermoscopy and histopathology, are required to confirm the diagnosis of BCC. Surgical treatments, including wide excision of BCC, are the main approach through which the entire tumor mass could be excised. In addition, the cosmetic and functional aspects could be preserved that provide optimal results for the patient. Besides, wide excision is one of the most effective therapeutic options for BCC to prevent recurrence.

REFERENCES

Adhikari, R., Shah, M., & Jha, A. (2019). Histopathological pattern of skin cancer at tertiary referral skin health center. *Journal of Pathology of Nepal*, *9*, 1555–1559.

Campione, E., Di Prete, M., Lozzi, F., Lanna, C., Spallone, G., Mazzeo, M., Cosio, T., Rapanotti, C., Dika, E., Gaziano, R., Orlandi, A., & Bianchi, L. (2020). High-Risk Recurrence Basal Cell Carcinoma: Focus on Hedgehog Pathway Inhibitors and Review of the Literature. *Chemotherapy*, *65*(1–2), 2–10.

Chren, M.-M., Torres, J. S., Stuart, S. E., Bertenthal, D., Labrador, R. J., & Boscardin, W. J. (2011). Recurrence After Treatment of Nonmelanoma Skin Cancer: A Prospective Cohort Study. *Archives of Dermatology*, *147*(5), 540–546.

Christensen, S. R., & Leffell, D. J. (2019). Mohs Micrographic Surgery. In S. Kang, M. Amagai, A. L. Bruckner, A. H. Enk, D. J. Margolis, A. J. McMichael, & J. S. Orringer (Eds.), *Fitzpatrick's Dermatology, 9e*. McGraw-Hill Education. http://dermatology.mhmedical.com/content.aspx?aid=1161346925

Dika, E., Scarfì, F., Ferracin, M., Broseghini, E., Marcelli, E., Bortolani, B., Campione, E., Riefolo, M., Ricci, C., & Lambertini, M. (2020). Basal Cell Carcinoma: A Comprehensive Review. In *International Journal of Molecular Sciences* (Vol. 21, Issue 15).

Fania, L., Didona, D., Morese, R., Campana, I., Coco, V., Di Pietro, F. R., Ricci, F., Pallotta, S., Candi, E., Abeni, D., & Dellambra, E. (2020). Basal Cell Carcinoma: From Pathophysiology to Novel Therapeutic Approaches. In *Biomedicines* (Vol. 8, Issue 11).

Hooshang, E. A., Pedram, N., Ali, S., Sara, H., Maedeh, A., Sara, S., Arghavan, A., & Maryam, N. (2017). Basal cell carcinoma of the lower extremities. *Iranian Journal of Dermatology*, *20*(4), 118–121.

Khan, L., Breen, D., Zhang, L., Balogh, J., Czarnota, G., Lee, J., Tsao, M. N., & Barnes, E. A. (2014). Predictors of Recurrence after Radiotherapy for Non-Melanoma Skin Cancer. In *Current Oncology* (Vol. 21, Issue 2, pp. 326–329).

Litaiem, N., Karray, M., Jones, M., Rammeh, S., & Zeglaoui, F. (2020). Effectiveness of dermoscopy in the demarcation of surgical margins in slow Mohs surgery. *Dermatologic Therapy*, *33*(6), e14196.

QANUN MEDIKA
JURNAL KEDOKTERAN FKUM SURABAYA
http://journal.um-surabaya.ac.id/index.php/qanunmedika

Morgan, F. C., Ruiz, E. S., Karia, P. S., Besaw, R. J., Neel, V. A., & Schmults, C. D. (2020). Factors predictive of recurrence, metastasis, and death from primary basal cell carcinoma 2 cm or larger in diameter. *Journal of the American Academy of Dermatology*, *83*(3), 832–838.

Niculet, E., Craescu, M., Rebegea, L. F., Bobeica, C., Nastase, F., Lupasteanu, G., Jicman Stan, D., Chioncel, V., Anghel, L., Mihaela, L., & Tatu, A. (2021). Basal cell carcinoma: Comprehensive clinical and histopathological aspects, novel imaging tools and therapeutic approaches (Review). *Experimental and Therapeutic Medicine*, *23*(1), 1–8.

Pratama, D., & Kurnia, A. (2019). Wide Excision of Non–Melanoma Skin Cancer at dr. Cipto Mangunkusumo General Hospital, 2012–2015: Recurrence and Prognostic Factors. *The New Ropanasuri Journal of Surgery*, *4*(1), 27–30.

Quazi, S., Aslam, N., Saleem, H., Rahman, J., & Khan, S. (2020). Surgical margin of excision in basal cell carcinoma: a systematic review of literature. *Cureus*, *12*(7), e9111.

Suyuthie, H., Harahap, W., Khambri, D., & Rustam, R. (2022). Eksisi Luas dan Rekonstruksi Karsinoma Sel Basal Wajah. *Cermin Dunia Kedokteran*, *49*(1), 27–31.

Tanese, K. (2019). Diagnosis and Management of Basal Cell Carcinoma. *Current Treatment Options in Oncology*, *20*(2), 13.

Tang, J. Y., Epstein Ervin H., J., & Oro, A. E. (2019). Basal Cell Carcinoma and Basal Cell Nevus Syndrome. In S. Kang, M. Amagai, A. L. Bruckner, A. H. Enk, D. J. Margolis, A. J. McMichael, & J. S. Orringer (Eds.), *Fitzpatrick's Dermatology, 9e*. McGraw-Hill Education.

Thomson, J., Hogan, S., Leonardi-Bee, J., Williams, H. C., & Bath-Hextall, F. J. (2020). Interventions for basal cell carcinoma of the skin. *Cochrane Database of Systematic Reviews*, *11*.

Toha, S., Rahman, A., Mochtar, M., Julianto, I., Dharmawan, N., Mawardi, P., Wasita, B., & Setyawan, N. (2019). Kejadian Karsinoma Sel Basal di RSUD Dr. Moewardi Surakarta Berdasarkan Subtipe Histopatologi menurut Jenis Kelamin, Usia, Lokasi Anatomi, Diameter Tumor. *Cermin Dunia Kedokteran*, *46*(4), 256–260.

Ungureanu, L., Cosgarea, I., Şenilă, S., & Vasilovici, A. (2021). Role of Dermoscopy in the Assessment of Basal Cell Carcinoma. In *Frontiers in Medicine* (Vol. 8).

Volis, M. (2021). Dermatology Technique: Mohs Micrographic Surgery. *Mako: NSU Undergraduate Student Journal*, *2021*(1), 1–6.

Wibawa, L., Andardewi, M., Krisanti, I., & Arisanty, R. (2019). The epidemiology of skin cancer at Dr. Cipto Mangunkusumo National Central General Hospital from 2014 to 2017. *Journal of General-Procedural Dermatology & Venereology Indonesia*, *4*, 11–16.

Widiatmoko, A., Murlistyarini, S., & Rahmi, M. (2021). Excision surgery with rotation flap on pigmented basal cell carcinoma. *Journal of Dermatology, Venereology and Aesthetic*, *2*(1), 8–14.