

HISTOPATHOLOGICAL CHARACTERISTICS OF PATIENTS WITH BASAL CELL CARCINOMA AT NGOERAH HOSPITAL DERMATOLOGY AND VENERELOGY POLYCLINIC: A STUDY FROM JANUARY 2021 TO DECEMBER 2023.

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ABSTRACT

Introduction: Basal cell carcinoma (BCC) is a carcinoma that originates from the basal cells of the epidermis and/or hair follicles. Epidemiologically, basal cell carcinoma is the most common skin malignancy. **Objective:** This study aims to determine the incidence and histopathological characteristics of BCC in patients visiting Prof. Dr. IGNG Ngoerah Hospital Dermatology dan Venereology Clinic. **Methods:** This study used an observational descriptive design with a cross-sectional approach. Data came from secondary data from medical records of basal cell carcinoma patients who sought treatment and control at Prof Dr IGNG Ngoerah Hospital Dermatology dan Venereology Clinic, January 2021-December 2023. The study subjects were taken from the population who met the inclusion criteria, namely patients who had been diagnosed histopathologically and with complete medical record data. Based on the results of collecting and processing patient data, 31 cases were obtained that met the study inclusion criteria. **Results:** The data shows that the incidence rate of basal cell carcinoma has increased from 2020. Based on gender, more were found in women (70.97%). Based on age, most patients were found to be 60-79 years old (61.29%). The face is the most common location for BCC lesions (93.54%). The most common histopathologic feature is nodular BCC (54.85%). **Conclusion:** Based on the results of the study, it was found that basal cell carcinoma often occurs in the female population, age group 60-79 years, with the most common type being low- risk nodular BCC in patients visiting Prof. Dr. IGNG Ngoerah Hospital Dermatology dan Venereology Clinic in the period January 2021 to December 2023

Keywords: skin cancer., malignant., basal cell carcinoma

INTRODUCTION

Basal cell carcinoma (BCC) is the most common type of skin cancer.^{1,2,3} A study conducted in Singapore from 1968 to 2016 identified 12,692 cases of skin cancer, with 65.9% of them being basal cell carcinoma (BCC). The incidence of BCC has been observed to increase each year. Similarly, a study from Cipto Mangunkusumo Hospital covering the years 2014 to 2020 found 263 cases of skin cancer, 66.9% of which were BCC.⁴ BCC can be classified based on the risk of recurrence into low-risk and high-risk categories. The low-risk histopathological types include Nodular BCC, Superficial BCC, Pigmented BCC, Infundibulocystic BCC, and Fibroepithelial BCC. In contrast, the high-risk types include Basosquamous Carcinoma, Sclerosing BCC, Infiltrating BCC, BCC with sarcomatoid differentiation, and Micronodular BCC.^{5,6} This study aims to determine the

incidence and histopathological characteristics of basal cell carcinoma in patients visiting Dermatology and Venereology polyclinic of Prof. Dr. IGNG Ngoerah from January 2021 to December 2023. The data will be analyzed based on age, gender, and histopathological characteristics. The findings of this research are intended to serve as a reference and contribute to scientific knowledge for future studies on similar topics.

RESEARCH METHOD

This study employed a descriptive observational design with a cross-sectional approach. The data were obtained from secondary medical records of patients with basal cell carcinoma who received treatment at the visiting Dermatology and Venereology polyclinic of Prof. Dr. IGNG Ngoerah from January 2021 to December 2023. The study population was determined through total sampling, which included all patients who underwent examinations at Dermatology and Venereology polyclinic of Prof.

Dr. IGNG Ngoerah during the study period. Research subjects were selected from this population based on specific inclusion criteria, which required that patients had been diagnosed histopathologically and had complete medical record data.

RESULTS

Based on the results of data collection and analysis of patients with BCC at the Dermatology and Venereology Polyclinic of Prof. Dr. IGNG Ngoerah Hospital, a total of 31 cases were identified that met the research inclusion criteria. Among these, there were 5 cases in 2021, 14 cases in 2022, and 12 cases in 2023. The patient data revealed that the incidence of BCC was most prevalent in the age group of 60-79 years, accounting for

61.29% of cases, with a higher frequency in females (70.97%). The most common location for BCC was on the face (93.54%), with the nasal area being the most frequently affected site (10 cases, 34.48%). Histopathological analysis indicated that the majority of cases were classified as low-risk KSB (70.98%), with the most common histological type being Nodular BCC (54.85%). Additionally, there were mixed types observed, with 22.57% of cases falling into this category. The most frequent mixed type was nodular pigmented, which accounted for 4 cases (28.57%).

Table 1. Patient Characteristics

Clinical Parameters	Basal Cell Carcinoma case	
	n	%
Total number of cases	31	100
number of cases in 2021	5	16,13%
number of cases in 2022	14	45,16%
number of cases in 2023	12	38,71%
Gender		
Male	9	29,03%
Female	22	70,97%
Age Group		
20- 39	1	3,23%
40- 59	10	32,25%
50- 79	19	61,29%
≥ 80	1	3,23%
Location		
Head, Face, and Neck	29	93,54%
Trunk	1	3,23%
Extremity	1	3,23%

Table 2. Distribution of Histopathological Types of BCC

Histopathologic Features	Basal Cell Carcinoma case	
	n	%
By Risk (n=31)		
Low Risk	22	70,98%
Nodular BCC	17	54,85%
Mixed without aggressive features	5	16,13%
High Risk	9	29,02%
Mixed with aggressive features	9	29,02%
By Histopathological Types (n= 31)		
Single Type	17	58, 85%
Mixed Type	14	45, 15%
2 type	7	22,57%

3 type	6	19,35%
4 type	1	3,23%
Mixed Type (n=14)	14	100%
2 type	7	50%
Nodular, Pigmented	4	28, 57%
Nodular, Infiltrative	3	21, 43%
3 type	6	42, 86%
Nodular, Pigmented, Mikronodular	1	7, 14%
Nodular, Pigmented, Infiltratif	3	21, 44%
Nodular, Superfisial, infiltratif	2	14, 28%
4 type	1	7,14%
Nodular, Infiltratif, Superfisial, Pigmented	1	7, 14%

DISCUSSION

The most common mixed histology type identified in this study was a combination of two types, occurring in 22.57% of cases. The most frequently observed among these was nodular pigmented, with a total of four cases, accounting for 28.57%. Additionally, there was an increase in new cases from 2021 (n=5) to 2023 (n=12). This trend aligns with findings from several studies conducted in other Asian countries, which also reported an increasing incidence of basal cell carcinoma.^{7,8,9} The increase in cases can be attributed to higher public awareness about skin cancer and the end of the COVID-19 pandemic, which has made it easier for patients to visit health facilities.^{4,10} Besides skin type and exposure to ultraviolet (UV) light, age is also a significant risk factor for the occurrence of basal cell carcinoma (BCC).^{11,12,13} This study found that BCC cases were most commonly reported in individuals aged 60 to 79 years, accounting for 61.29% of cases. This finding aligns with various other studies that note BCC is frequently observed in those over the age of 60.^{4,6,7} The higher occurrence of BCC in older adults is linked to the accumulation of mutations from exposure to different forms of radiation, including UV light. The head and face are particularly susceptible to UV exposure, making them common sites for BCC development. Consistent with other research, this study also found that KSB was most often located on the head, face, and neck.^{4,6,14,15} Similar to findings from other studies, BCC was most commonly located in the head, face, and neck areas in this study. Notably, BCC was more prevalent in women, with a female-to-male ratio of 2.4:1. This contrasts with global studies, which often report a higher incidence in men, likely due to their greater exposure to UV radiation from outdoor work.^{5,11} The increased ratio of women in this study may be attributed to several factors.

Women often face significant UV exposure as well—such as those cooking in open kitchens, working as farmers, or selling goods in markets. Moreover, women typically have a greater concern for skin health, which leads them to seek medical attention more frequently.^{4,16} The diagnosis of BCC is based on tissue collection and can be classified according to its histopathological features¹¹. Previous studies have shown that the most common type of low-risk BCC is nodular BCC^{3,8}, which accounts for 54.85% in this study. No other types of low-risk KSB were identified on their own; rather, other low-risk variants were found in combinations. In terms of high-risk KSB, all histopathological results were mixed. This study found that 45.15% of cases were mixed types, a figure that is significantly higher than previous studies, which reported rates ranging from 20.6% to 41.6%.^{4,17,18} The most prevalent mixed type observed was a combination of infiltrative nodular and pigmented nodular BCC. Out of the 14 mixed-type BCCs identified in this study, 10 exhibited aggressive histopathological characteristics. The presence of mixed histological features within a single lesion indicates a higher risk of tumor recurrence.^{4,19,20}

CONCLUSIONS

Basal cell carcinoma is the most common type of skin cancer in Indonesia. This study found that patients diagnosed with BCC at Dermatology and Venereology Polyclinic of Prof. Dr. IGNG Ngoerah Hospital between January 2021 and December 2023 were predominantly female, particularly in the age group of 60 to 79 years. The most frequently observed type of carcinoma was the low-risk nodular basal cell carcinoma.

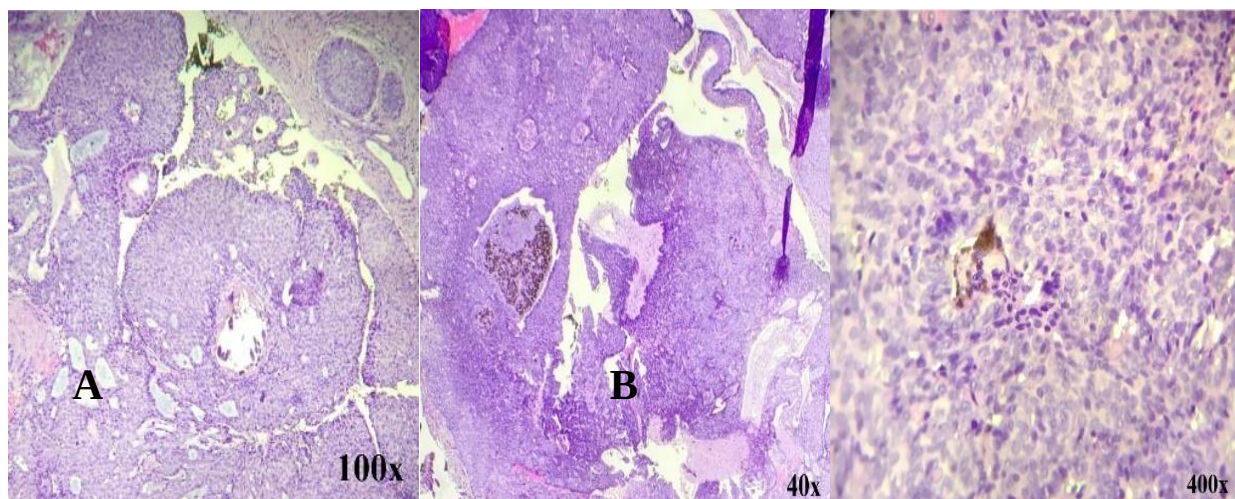


Figure 1 . Histopathologic features of Nodular-pigmented mixed type KSB. There are solid nest (a), nodular pattern (b), and melanin-melanophage pigment infiltrate. (c)

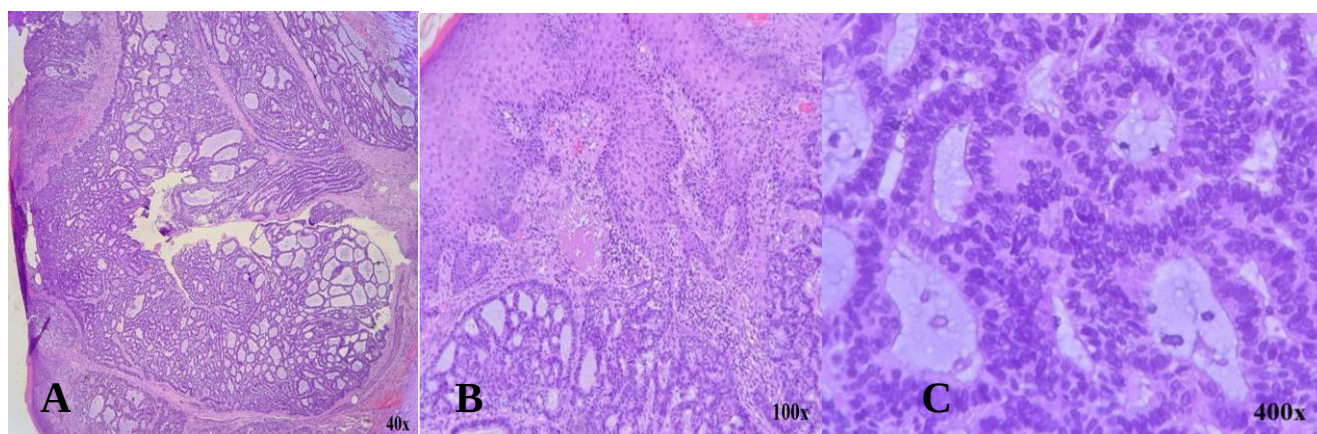


Figure 2. Histopathological features of the nodular type of KSB. The tumor mass is organized in a glandular, solid pattern (a). There is a clear junction between the basal epidermis and the tumor mass (b). The tumor cell nuclei are round, and some exhibit a palisading arrangement (c).

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Conflict of Interest

The authors have no conflicts of interest to declare. All co-authors have seen and agree with the contents of the manuscript and there is no financial interest to report. We certify that the submission is original work and is not under review at any other publication.

Ethics Approval

Ethical approval for this study was obtained from Komisi Etik Penelitian Fakultas Kedokteran Universitas Udayana (0629/UN14.2.2.VII.14/LT/2024)

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