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**PROFILE OF ORAL TUMORS AT ULIN HOSPITAL, BANJARMASIN: A
 RETROSSPECTIVE CROSS-SECTIONAL STUDY**

Amy Nindia Carabelly¹⁾, Gabriel Afreulinta Sembiring Meliala²⁾, Aulia Azizah³⁾, Riky Hamdani³⁾,
 Irham Taufiqurrahman⁴⁾

¹⁾Department of Oral and Maxillofacial Pathology, Faculty of Dentistry, Lambung Mangkurat University,
 Banjarmasin, Indonesia

²⁾Dentistry Programme, Lambung Mangkurat University, Banjarmasin, Indonesia

³⁾Departement of Public Health, Faculty of Dentistry, Lambung Mangkurat University, Banjarmasin, Indonesia

⁴⁾Departement of Oral Surgeon, Faculty of Dentistry, Lambung Mangkurat University, Banjarmasin, Indonesia

ABSTRACT

Background: Oral tumors are excessive cell growths in the oral cavity and rank 16th worldwide in incidence. However, Indonesian Health Surveys and Profiles do not yet include data on oral tumors. Ulin Hospital is the referral hospital for oral tumor cases in South Kalimantan. **Purpose:** A retrospective cross-sectional study to analyze the profile of oral tumor cases at Ulin Hospital, Banjarmasin, in 2019-2021. **Methods:** A retrospective cross-sectional study of the medical records of patients diagnosed with oral tumors at Ulin Hospital between 2019 and 2021. Inclusion criteria were all patient medical records with complete variables. The variables were age, gender, tumor type, tumor location, and therapy. Chi-square analysis was used. **Results:** Oral cavity tumors are predominantly malignant, with squamous cell carcinoma (SCC) being the most common. SCC most commonly occurs in people aged 36–65 years, with the tongue being the most common location. There was no significant association between the year of incidence and tumor type ($p > 0.05$), but there was a significant association between gender and tumor type ($p < 0.05$). The most frequently administered therapy was chemotherapy. The most common benign oral tumors were pleomorphic adenoma (in 2019 and 2021) and fibromatous epulis (in 2020). **Conclusions:** Oral cavity tumors at Ulin Hospital are predominantly SCC, with gender being a significant factor in tumor type. Therefore, early detection and accurate diagnosis are crucial to improving patient prognosis.

Keywords: Benign Tumor, Chemotherapy, Malignant Tumor, Oral Tumor, Squamous Cell Carcinoma

Correspondence: Amy Nindia Carabelly, Department of Oral and Maxillofacial Pathology, Faculty of Dentistry, Lambung Mangkurat University, Banjarmasin, Veteran Street No. 128B Banjarmasin, amy.carabelly@ulm.ac.id, +6282153308244.

INTRODUCTION

Oral tumors are excessive cell growth in the oral cavity; they can be benign or malignant.¹ Most benign tumors of the oral cavity are not life-threatening but are recurrent.² Oral cancer or malignant tumors of the oral cavity are ranked 16th in terms of tumor incidence in the world.³ The incidence rate of oral cancer in 2022 was 389,485, and around 188,230 deaths occurred.³ Oral cancer ranks 17th for the most new cases in Indonesia in 2020, with a total of 5,780 cases.¹ However, the 2023 Indonesian Health Survey and the 2024 Indonesian Health Profile have not yet included data on oral tumor profiles.^{4,5}

The incidence of oral tumors can increase with age, gender differences, and tumor location.^{3,6} Effective management of oral tumors requires accurate diagnosis, appropriate treatment, and determination of prognosis.³ Most cases of oral tumors are only diagnosed when they are already in an advanced stage (stage III or IV), resulting in survival rates of only around 20%-50%, depending on the location of the tumor.⁶ Early diagnosis of oral tumors can increase survival rates up to 90% after treatment.³ This makes it crucial to have healthcare facilities that can support examinations and accurate diagnoses of oral tumors. Ulin Hospital is a Type A hospital and a referral hospital for oral tumor cases in South Kalimantan.⁷ Based on this, the purpose of this study is to conduct a retrospective cross-sectional analysis of the profile of oral tumor cases at Ulin Hospital, Banjarmasin, between 2019 and 2021. The results of this study are expected to provide data for consideration by relevant parties regarding the need for oral tumor examination and therapy facilities at Ulin Hospital, thereby improving the prognosis of oral tumor patients.

MATERIALS AND METHODS

Study design

This retrospective cross-sectional study analyzed medical records of patients diagnosed with oral cavity tumors. Patients were examined at Ulin Hospital in Banjarmasin between 2019 and 2021. Ulin Hospital is a Class A tertiary referral hospital for tumor cases. This study has received ethical approval under No. 035/KEPKG-FKGULM/EC/IV/2022.

Study population

The study population consisted of patients who underwent examinations at Ulin Hospital, Banjarmasin, between 2019 and 2021. Inclusion criteria were all medical records of Ulin Hospital patients diagnosed with oral cavity tumors between 2019 and 2021. Medical records were excluded if any key variables were missing, such as name, address, age, gender, tumor type, tumor location, and type of therapy.

Data management and analysis

Data quality checks were conducted by checking the completeness of the main variables: name, address, age, gender, tumor type, tumor location, and type of therapy. The research team conducted a real-time review of medical records and checked for any identifiable errors. Data from the complete medical records for the main variables were then processed descriptively and analyzed using SPSS. The analysis test used in this study was the Chi-square test.

RESULTS

The profile of oral tumor cases at Ulin Hospital, Banjarmasin, in 2019-2021 is shown in Figure 1. The prevalence of oral tumors at Ulin Hospital, Banjarmasin, in 2019 was 94 cases; it decreased in 2020 to 53 cases and increased again in 2021 to 91 cases.

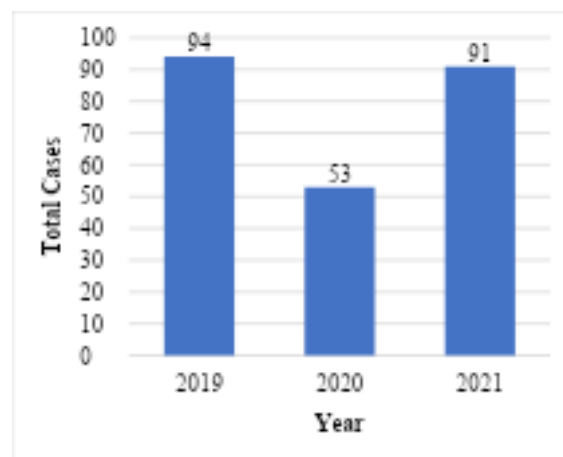


Figure 1. Prevalence of oral tumor cases in Ulin Hospital, Banjarmasin, from 2019 to 2021

Table 1 shows the profile of oral tumors by type at Ulin Hospital in Banjarmasin from 2019 to 2021. During this period, the prevalence of malignant tumors was consistently higher than that of benign tumors. However, Chi-square analysis indicated no significant association between the year of incidence and the type of tumor ($p > 0.05$).

Table 1. Profile of oral tumors by tumor type

Year	Benign Tumors		Malignant Tumors		Total		<i>p value</i>
	N	%	N	%	N	%	
2019	38	40.42%	56	59.58%	94	100	0.052
2020	11	20.75%	42	79.25%	53	100	
2021	32	35.16%	59	64.84%	91	100	

Table 2 shows the oral tumor profile based on benign tumor type from 2019 to 2021 at Ulin Hospital, Banjarmasin. The three most common types of benign oral tumors in 2019 were pleomorphic adenoma (26.32%), fibromatous epulis (15.79%), and ameloblastoma (10.53%). The three most common types of benign oral tumors in 2020 were fibromatous epulis (27.27%), ameloblastoma (18.18%), and epulis granulomatosa (18.18%). The three most common types of benign oral tumors in 2021 were pleomorphic adenoma (28.13%), granulomatous epulis (25%), and fibroma (12.5%).

Table 2. Oral tumor profile based on benign tumor type

Benign Tumors	Year					
	2019		2020		2021	
	N	%	N	%	N	%
Pleomorphic Adenoma	1 0	26.32 %	0	0.00%	9	28.13%
Epulis Granulomatosa	1	2.63%	2	18.18 %	8	25.00%
Fibroma	1	2.63%	0	0.00%	4	12.50%
Fibromatous Epulis	6	15.79 %	3	27.27 %	3	9.38%
Ameloblastoma	4	10.53 %	2	18.18 %	2	6.25%
Cystic Ameloblastoma	0	0.00%	1	9.09%	1	3.13%
Anaplastic Large Cell Lymphoma	0	0.00%	0	0.00%	1	3.13%
Benign Mesenchymal Tumours	0	0.00%	0	0.00%	1	3.13%
Papilloma	2	5.26%	0	0.00%	1	3.13%
Peripheral Giant Cell Granuloma	0	0.00%	0	0.00%	1	3.13%
Parotid Tumors	0	0.00%	0	0.00%	1	3.13%
Adenolymphoma	1	2.63%	0	0.00%	0	0.00%
Adenoma	2	5.26%	1	9.09%	0	0.00%
Plexiform Ameloblastoma	1	2.63%	0	0.00%	0	0.00%
Basalioma	1	2.63%	0	0.00%	0	0.00%
Benign Soft Tissue Tumors	1	2.63%	0	0.00%	0	0.00%
Fibropapilloma	1	2.63%	0	0.00%	0	0.00%
Hemangioma	1	2.63%	0	0.00%	0	0.00%
Myxoma	0	0.00%	1	9.09%	0	0.00%
Peripheral Odontogenic Myxoma	0	0.00%	1	9.09%	0	0.00%
Pyogenic Granuloma	1	2.63%	0	0.00%	0	0.00%
Soft Tissue tumor	1	2.63%	0	0.00%	0	0.00%
Squamous Papiloma	1	2.63%	0	0.00%	0	0.00%
Tumor of the Floor of the Mouth	1	2.63%	0	0.00%	0	0.00%
Gingival Tumor	1	2.63%	0	0.00%	0	0.00%
Tongue Tumor	1	2.63%	0	0.00%	0	0.00%
Total	3 8	100%	1 1	100%	3 2	100.00 %

Table 3 shows the oral tumor profile by malignant tumor type from 2019 to 2021 at Ulin Hospital, Banjarmasin. The most common types of malignant oral tumors in 2019 were Squamous Cell Carcinoma (35.7%), Adenoid cystic carcinoma (7.14%), Adenoid Cystic Carcinoma, Non-Hodgkin's Lymphoma, and Mucoepidermoid Carcinoma (7.14%). The most common types of malignant oral tumors in 2020 were Squamous Cell Carcinoma (54.77%), Non-Hodgkin's Lymphoma (14.29%), Adenoid Cystic Carcinoma, Ameloblastoma Carcinoma, and Maxillary Carcinoma (4.76%). The most common types of malignant oral tumors in 2021 were Squamous Cell Carcinoma (40.69%), Non-Hodgkin's Lymphoma (11.87%), and Parotid Carcinoma and Malignant Lymphoma (6.79%).

Table 3. Oral tumor profile based on malignant tumor type

Malignant Tumor	Year					
	2019		2020		2021	
	N	%	N	%	N	%
Acinic Cell Carcinoma	1	1.79%	0	0.00%	0	0.00%
Adenoid Cystic Carcinoma	4	7.14%	2	4.76%	1	1.69%
Adenocarcinoma	6	10.71%	1	2.38%	0	0.00%
Ameloblastoma Carcinoma	1	1.79%	2	4.76%	2	3.39%
Basal Cell Carcinoma	0	0.00%	0	0.00%	3	5.09%
Carcinoma Ex Pleomorphic Adenoma	0	0.00%	1	2.38%	1	1.69%
Parotid Carcinoma	3	5.36%	0	0.00%	4	6.79%
Gingival Carcinoma	0	0.00%	0	0.00%	2	3.39%
Tongue Carcinoma	2	3.57%	0	0.00%	1	1.69%
Maxillary Carcinoma	1	1.79%	2	4.76%	1	1.69%
Palatal Carcinoma	1	1.79%	0	0.00%	0	0.00%
Oral Cavity Carcinoma	0	0.00%	1	2.38%	0	0.00%
Epidermoid Carcinoma	0	0.00%	1	2.38%	1	1.69%
Fibrosarcoma	2	3.57%	0	0.00%	1	1.69%
Non-Hodgkin Lymphoma	4	7.14%	6	14.29%	7	11.87%
Malignant Lymphoma	2	3.57%	0	0.00%	4	6.79%
Rhabdomyosarcoma	1	1.79%	1	2.38%	2	3.39%
Malignant Cystic Lesion	0	0.00%	0	0.00%	1	1.69%
Metastatic Carcinoma	0	0.00%	0	0.00%	1	1.69%
Mucoepidermoid Carcinoma	4	7.14%	0	0.00%	1	1.69%
Malignant	2	3.57%	0	0.00%	0	0.00%
Malignant Melanoma	0	0.00%	1	2.38%	0	0.00%
Mucinous Carcinoma	1	1.79%	0	0.00%	0	0.00%
Osteosarcoma	0	0.00%	0	0.00%	2	3.39%
Malignant Soft Tissue Tumor	1	1.79%	0	0.00%	0	0.00%
Soft Tissue Sarcoma	0	0.00%	1	2.38%	0	0.00%
Squamous Cell Carcinoma	2	35.70%	2	54.77%	2	40.69%
	0	%	3	%	4	%
Total	5		4		5	
	6	100%	2	100%	9	100%

Table 4 shows the oral tumor profile by gender from 2019 to 2021 at Ulin Hospital, Banjarmasin. In 2019, the highest prevalence of oral tumors by gender was in women (53.19%), while in 2020 and 2021, the highest prevalence was in men (64.15% and 57.4%).

Table 4. Oral tumor profile based on gender

Sex	Period					
	2019		2020		2021	
	N	%	N	%	N	%

	4	46.81	3	64.15	5	57.14
Male	4	%	4	%	2	%
Female	5	53.19	1	35.85	3	42.86
	0	%	9	%	9	%
Total	9	100%	5	100%	9	100%
	4		3		1	

Table 5 shows the oral tumor profile by age from 2019 to 2021 at Ulin Hospital, Banjarmasin. In 2019, the most common age group for patients with oral tumors was the early elderly group (46-55 years) (28.72%). In 2020, the most common age group for patients with oral tumors was the late elderly group (56-65 years) (22.64%). In 2021, the most common age group for patients with oral tumors was the late adult group (36-45 years) (27.47%).

Table 5. Oral tumor profile based on age

Age	Year					
	2019		2020		2021	
	N	%	N	%	N	%
Toddlers (0-5 Years)	2	2.13%	3	5.66%	1	1.10%
Childhood (5-11 Years)	0	0.00%	0	0.00%	1	1.10%
Early Adolescence (12-16 Years)	3	3.19%	2	3.77%	2	2.20%
Late Adolescence (17-25 Years)	6	6.38%	3	5.66%	4	4.40%
Early Adulthood (26-35 Years)	7	7.45%	6	11.32%	8	8.79%
Late Adulthood (36-45 Years)	18	19.15%	10	18.87%	25	27.47%
Early Elderly (46-55 Years)	27	28.72%	11	20.75%	18	19.78%
Late Elderly (56-65 Years)	20	21.28%	12	22.64%	15	16.48%
Seniors (>65 Years)	11	11.70%	6	11.33%	17	18.68%
Total	94	100.00%	53	100.00%	91	100.00%

Table 6 shows the relationship between gender and type of oral cavity tumors in 2019-2021 at Ulin Hospital, Banjarmasin. Table 6 shows that males experienced a higher number of malignant tumors, with 45 cases (55.56%), while females experienced a higher number of benign tumors, with 96 cases (61.15%). The chi-square test results indicate a relationship between gender and type of oral cavity tumor.

Table 6. Relationship between gender and type of oral cavity tumor

Sex	Benign Tumor		Malignant Tumor		Total		<i>p value</i>
	N	%	N	%	N	%	
Male	36	44.44%	45	55.56%	81	100	0.020
Female	96	61.15%	61	38.85%	157	100	

Table 7 shows the profile of oral tumor therapy in 2019-2021 at Ulin Hospital, Banjarmasin. The most common oral tumor therapies used in patients were chemotherapy, excision, and surgery. In 2019-2021, the most common oral tumor therapy was chemotherapy (44.69%, 56.60%, and 54.94%).

Table 7. Profile of oral tumor therapies from 2019 to 2021

Therapy	Period					
	2019	%	2020	%	2021	%
Chemotherapy	42	44.69%	30	56.60%	50	54.94%

Therapy	Period					
	2019	%	2020	%	2021	%
Excision	27	28.72%	7	13.21%	21	23.08%
Surgery	23	24.49%	15	28.30%	18	19.78%
Radiotherapy	0	0.00%	1	1.89%	2	2.20%
Enucleation	0	0.00%	0	0.00%	0	0.00%
Pharmacotherapy	1	1.05%	0	0.00%	0	0.00%
Incision	1	1.05%	0	0.00%	0	0.00%
Total	94	100%	53	100%	91	100%

Table 8 shows the profile of oral tumor locations from 2019 to 2021 at Ulin Hospital, Banjarmasin. The locations of oral tumors detected in patients were the salivary glands, gingiva, tongue, mandible, maxilla, buccal cavity, oral cavity, palate, and tonsils. In 2019 and 2021, the most common location of oral tumor lesions was the salivary glands (34.04% and 26.37%, respectively), while in 2020, they were found on the tongue (22.65%).

Table 8. Profile of oral tumor locations from 2019 to 2021

Locations	Period					
	2019	%	2020	%	2021	%
Salivary Glands	32	34.04%	10	18.87%	24	26.37%
Gingiva	15	15.96%	8	15.09%	13	14.29%
Tongue	16	17.02%	12	22.65%	12	13.19%
Mandible	7	7.45%	9	16.98%	9	9.89%
Maxilla	11	11.70%	5	9.43%	7	7.69%
Buccal Mucosa	3	3.19%	2	3.77%	7	7.69%
Oral Cavity	1	1.06%	3	5.66%	7	7.69%
Palate	3	3.20%	2	3.77%	7	7.69%
Lip	6	6.38%	1	1.89%	4	4.40%
Tonsils	0	0.00%	1	1.89%	1	1.10%
Total	94	100%	53	100%	91	100%

Table 9 shows the profile of oral benign tumors by gender from 2019 to 2021 at Ulin Hospital, Banjarmasin. In 2019 and 2021, the most common benign tumor was pleomorphic adenoma, with a higher prevalence in women. In 2020, the most common benign tumor was ameloblastoma, with a higher prevalence in men.

Table 9. Profile of benign oral tumors by gender

Benign Tumor	Year											
	2019				2020				2021			
	M		F		M		F		M		F	
	N	%	N	%	N	%	N	%	N	%	N	%
Adenolymphoma	1	5.88%	0	0%	0	0%	0	0%	0	0%	0	0%
Adenoma	0	0%	2	9.5%	1	20%	0	0%	0	0%	0	0%
Ameloblastoma	2	11.77%	2	9.5%	2	40%	0	0%	2	14.29%	1	5.56%
Unicystic Ameloblastoma	0	0%	0	0%	1	20%	0	0%	0	0%	0	0%
Plexiform Ameloblastoma	1	5.88%	0	0%	0	0%	0	0%	0	0%	0	0%
Anaplastic Large Cell Lymphoma	0	0.00%	0	0%	0	0%	0	0%	1	7.14%	0	0%
Basal Cell Adenoma	1	5.88%	0	0%	0	0%	0	0%	0	0.00%	0	0%
Benign Mesenchymal Tumor	0	0%	0	0%	0	0%	0	0%	1	7.14%	0	0%
Benign Soft Tissue Tumor	0	0%	1	4.8%	0	0%	0	0%	0	0%	0	0%
Fibromatous Epulis	2	11.77%	4	19%	0	0%	3	50%	1	7.14%	2	11.1%
Granulomatous Epulis	0	0%	1	4.8%	0	0%	2	33.3%	2	14.29%	6	33.33%
Fibroma	0	0%	1	4.8%	0	0%	0	0%	3	21.43%	1	5.56%
Fibropapilloma	1	5.88%	0	0%	0	0%	0	0%	0	0%	0	0%
Hemangioma	1	5.88%	0	0%	0	0%	0	0%	0	0%	0	0%
Myxoma	0	0%	0	0%	1	20%	0	0%	0	0%	0	0%
Papilloma	0	0%	2	9.5%	0	0%	0	0%	1	7.14%	0	0%
Peripheral Giant Cell Granuloma	0	0%	0	0%	0	0%	0	0%	0	0%	1	5.56%
Peripheral Odontogenic Myxoma	0	0%	0	0%	0	0%	1	16.7%	0	0%	0	0.0%
Pleomorphic Adenoma	4	23.53%	6	28.5%	0	0%	0	0%	3	21.43%	6	33.33%
Pyogenic Granuloma	1	5.88%	0	0%	0	0%	0	0%	0	0%	0	0%
Soft Tissue tumor	0	0%	1	4.8%	0	0%	0	0%	0	0%	0	0%
Squamous Papilloma	1	5.88%	0	0%	0	0%	0	0%	0	0%	0	0%
Tumor of the Floor of the Mouth	0	0%	1	4.8%	0	0%	0	0%	0	0%	0	0%
Gingival Tumor	1	5.88%	0	0%	0	0%	0	0%	0	0%	0	0%
Tongue Tumor	1	5.88%	0	0%	0	0%	0	0%	0	0%	1	5.56%
Parotid Tumor	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total	17	100%	21	100%	5	100%	6	100%	14	100%	18	100%

Table 10 shows the profile of oral malignant tumors by gender from 2019 to 2021 at Ulin Hospital, Banjarmasin. In 2019 and 2020, the most common malignant tumor was squamous cell carcinoma, with a higher

prevalence in women. In 2021, the most common malignant tumor was squamous cell carcinoma, with a higher prevalence in men.

Table 10. Profile of malignant oral tumors by gender

Malignant Tumors	Year											
	2019				2020				2021			
	M		F		M		F		M		F	
	N	%	N	%	N	%	N	%	N	%	N	%
Acinic Cell Carcinoma	0	0%	1	3.70%	0	0%	0	0%	0	0%	0	0%
Adenocarcinoma	4	13.79%	2	7.41%	1	3.45%	0	0%	0	0%	0	0%
Adenoid Cystic Carcinoma	2	6.9%	2	7.41%	1	3.45%	1	7.69%	1	2.6%	0	0%
Ameloblastoma Carcinoma	0	0%	1	3.70%	2	6.9%	0	0%	1	2.6%	1	4.76%
Basal Cell Carcinoma	0	0%	0	0%	0	0%	0	0%	3	7.9%	0	0%
Gingival Carcinoma	0	0%	0	0%	0	0%	0	0%	2	5.3%	0	0%
Tongue Carcinoma	0	0%	2	7.41%	0	0%	0	0%	0	0%	1	4.76%
Maxillary Carcinoma	1	3.45%	0	0%	1	3.45%	1	7.69%	1	2.6%	0	0%
Palatal Carcinoma	1	3.45%	0	0%	0	0%	0	0%	0	0%	0	0%
Parotid Carcinoma	3	10.33%	0	0%	0	0%	0	0%	3	7.9%	1	4.76%
Carcinoma ex Pleomorphic Adenoma	0	0%	0	0%	0	0%	1	7.69%	1	2.6%	0	0%
Oral Cavity Carcinoma	0	0%	0	0%	1	3.45%	0	0%	0	0%	0	0%
Epidermoid Carcinoma	0	0%	0	0%	1	3.45%	0	0%	0	0%	1	4.76%
Fibrosarcoma	1	3.45%	1	3.70%	0	0%	0	0%	1	2.6%	0	0%
Non-Hodgkin Lymphoma	2	6.9%	2	7.41%	4	13.79%	2	15.38%	3	7.9%	4	19.06%
Malignant Lymphoma	1	3.45%	1	3.70%	0	0%	0	0%	3	7.9%	1	4.76%
Malignant	1	3.45%	1	3.70%	0	0%	0	0%	0	0%	0	0%
Malignant Cystic Lesion	0	0%	0	0%	0	0%	0	0%	0	0%	1	4.76%
Malignant Melanoma	0	0%	0	0%	1	3.45%	0	0%	0	0%	0	0%
Metastatic Carcinoma	0	0%	0	0%	0	0%	0	0%	1	2.6%	0	0%
Mucoepidermoid Carcinoma	2	6.9%	2	7.41%	0	0%	0	0%	1	2.6%	0	0%
Mucinous Carcinoma	0	0%	1	3.70%	0	0%	0	0%	0	0%	0	0%
Osteosarcoma	0	0%	0	0%	0	0%	0	0%	1	2.6%	1	4.76%
Rhabdomyosarcoma	0	0%	1	3.70%	1	3.45%	0	0%	2	5.3%	0	0%
Squamous Cell Carcinoma	1 0	34.48 %	1 0	37.05 %	1 6	55.16 %	7	53.86 %	1 4	36.8 %	1 0	47.62 %
Malignant Soft Tissue Tumor	1	3.45%	0	0%	0	0%	0	0%	0	0%	0	0%
Soft Tissue Sarcoma	0	0%	0	0%	0	0%	1	7.69%	0	0%	0	0%
Total	2 9	100%	2 7	100%	2 9	100%	1 3	100%	3 8	100%	2 1	100%

DISCUSSION

The oral tumor profile at Ulin Hospital in 2019-2021 was dominated by malignant tumors/oral cancer, namely squamous cell carcinoma (SCC). Chi-square test results showed no significant association between the year of incidence and tumor type. Oral cancer was more prevalent in this study because it can grow and spread rapidly, causing symptoms that significantly affect patients. In contrast, benign tumors typically grow slowly and are often asymptomatic.^{8,9}

In this study, SCC occurred in approximately 35.7% in 2019; 54.77% in 2020. and 40.69% in 2021. SCC is the most common type of cancer in the oral cavity; approximately 90% of oral cancer cases are SCC.¹⁰ SCC often occurs in patients over 40 years of age, as observed in this study, which states that most oral tumors are found in the age range of 36-65 years.¹⁰ SCC is more common in males.¹⁰ This is also in line with the results of the Chi-square test in this study, which stated that there is a relationship between gender and the type of oral cavity tumor, namely that men are more likely to suffer from malignant tumors. The primary site of SCC is the tongue.¹⁰ This is in line with the results of this study, which show that the tongue is the most common location found in Ulin Hospital patients, namely 22.65%.

The most common type of therapy in this study was chemotherapy, representing for 44.69% in 2019, 56.60% in 2020, and 54.94% in 2021. It is consistent with the majority of cases found, which were predominantly malignant tumors/oral cancer. Chemotherapy is the primary treatment if surgery is not an option.³ Chemotherapy can also be used as induction therapy before definitive treatment, as postoperative adjuvant therapy, or in combination with chemoradiotherapy.³

SCC shows cellular and nuclear pleomorphism, lacks keratin, and contains immature cells. making initial identification difficult.⁸ In addition. SCC is also growing and spreading rapidly.⁸ Early and accurate examination is necessary to detect SCC and improve the patient's prognosis. The Ki-67 protein marker is one of the facilities Ulin Hospital needs to provide for accurate diagnosis, staging, and prognosis of SCC.⁸

The most common type of benign oral tumor found at Ulin Hospital in 2019 and 2021 was pleomorphic adenoma. This finding echoes research by Araya and Sentyaningrum, which found that pleomorphic adenoma is the most common benign oral tumor.^{11,12} Pleomorphic adenoma is a benign tumor located in the salivary glands. The World Health Organization (WHO) reports that salivary gland tumors amount to 3–6% of all tumors in the head and neck region.⁹ Pleomorphic adenoma can occur at any age, but it has its highest prevalence in the fourth to sixth decades of life.⁹ The results of this study indicate that the most cases of oral tumors in 2019 and 2021 occurred in early old age (46-55 years) and late adulthood (36-45 years). Based on gender, pleomorphic adenomas are more common in women than in men.⁹ It also aligns with the results of the Chi-square test in this study, which showed a relationship between gender and the type of oral tumor, with women having a higher risk of developing benign tumors. The most common location of oral tumors found at Ulin Hospital in 2019 and 2021 was in the salivary glands. It turns out that the tumors found in this area were pleomorphic adenomas.

Pleomorphic adenoma grows slowly, is asymptomatic in the early stages, and expresses pleomorphic or mixed characteristics.⁹ It complicates diagnosis; therefore, diagnostic tools are needed to support diagnostic accuracy. CT scans and specific biomarkers such as PLAG1 and HMGA2 can be performed annually at Ulin Hospital, given that this was the most common case in 2019 and 2021.^{9,13}

The most common type of benign oral tumor found at Ulin Hospital in 2020 was fibromatous epulis, amounting to 27.27%. Fibromatous epulis is a tumor localized to the gingiva.¹⁴ The cause of this lesion is local chronic irritation, such as calculus or trauma to the gingiva.¹⁴ Chronic irritating factors, such as calculus, that contribute to fibromatous epulis are influenced by oral health behaviors. Only about 6.2% of Indonesians brush their teeth twice daily at the correct frequency.¹⁵

A limitation of this study is that we did not describe the profiles of the supporting examinations used to diagnose oral tumors. We also did not describe the histopathological profile of oral tumor cases. This study concludes that the profile of oral cavity tumors at Ulin Hospital in 2019–2021 was dominated by malignant tumors, especially SCC, with the most common location being the tongue, and more common in men aged 36–65 years. There was no correlation between the year of incidence and tumor type, but there was an association with gender. The most frequently used therapy was chemotherapy. The most common benign tumors were pleomorphic adenoma and fibromatous epulis. which tend to grow slowly and are asymptomatic. Early detection and accurate diagnostic testing are crucial to improving patient prognosis.

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