Buletin Kedokteran & Kesehatan Prima
Vol.3 No.2 (2024)
DOI: 10.34012/bkkp.v3i2.5606

ORIGINAL ARTICLE

Histopathological characteristics of soft tissue tumors at Madani General Hospital

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ABSTRACT

Benign tumors were more common than malignant tumors, with a ratio of 1:100. However, in 2019, approximately 13,000 cases of malignant tumors were reported in the United States. Based on data from Cancer Referral Hospitals in Indonesia, soft tissue sarcomas were among the ten most common cancers in 2013, with approximately 75% of cases occurring in the extremity region. This study aimed to describe the histopathological examination results of patients with soft tissue tumors at the Madani General Hospital, Medan City. This study used a retrospective descriptive design by collecting data from the medical records of patients who underwent histopathological examination at the Anatomical Pathology Laboratory of Madani General Hospital (period 2018-2022). Data were analyzed based on the distribution of cases according to age, sex, and tumor type. The results showed that soft tissue tumors were most prevalent in the 41-50 age group with 30 patients (20.3%), the majority were female with 85 patients (57.4%), and based on histopathological diagnosis, lipoma was the most common type of tumor found in 70 patients (47.3%). All cases studied were benign tumors, with a total of 148 patients (100%).

Keywords: soft tissue tumors, characteristics, histopathology

Introduction

Soft tissue tumors are neoplasms that develop in non-epithelial tissues, including the muscle, tendon, connective tissue, fat, and synovial tissue (tissue around joints). These tumors can be benign or malignant and can occur in various locations in the body, from the head to toe.[1] Global studies have shown that soft tissue tumors, including soft tissue sarcoma (STS), are rare but clinically significant. STSs are a heterogeneous group of malignant tumors that originate from the embryonic mesoderm and exhibit variable clinical and histopathological characteristics.[2,3] Globally, the prevalence of STS is relatively low compared to that of other cancers; however, its clinical impact is considerable. In the United States, an estimated 13,000 cases of STS were reported in 2019, with the majority of cases found in the extremities.[4] There are at least 25 histopathological types of soft tissue tumors. In addition, women, Blacks, and other races are associated with a lower chance of early death, which is not specific to cancer.[5]

In Indonesia, data from the Cancer Referral Hospital show that soft tissue sarcomas are among the ten most common types of cancer, with approximately 75% of cases occurring in the extremities.[6] In the national context, efforts to understand and identify the histopathological characteristics of soft tissue tumors remain

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an important focus of research. A study by Pangestika and Wisnu (2021) showed that STS is a rare malignant tumor that requires special attention in diagnosis and management (5). This suggests the need for further analysis of the histopathological features of STS to improve understanding and clinical management at the local level.

At the local level, Madani General Hospital, as one of the health centers in the Medan City area, has important data for further analysis of the characteristics of soft tissue tumors in the area. However, detailed information regarding the histopathological examination results of soft tissue tumors at our hospital is limited. Imaging as a whole has limitations due to its inability to definitively distinguish between benign and malignant lesions; this distinction can only be determined through histopathological examination of the lesion (6). One form of imaging is optical widefield fluorescence, which has been developed and can be used as a traditional clinical examination for screening oral lesions (7). Oral squamous papilloma is a benign mucosal neoplasm that commonly arises in the oral cavity and is associated with HPV, especially types 6 and 11(8).Therefore, this study aims to fill this information gap by conducting an in-depth analysis of histopathology data from the period 2018-2022.

This study aimed to obtain and analyze the histopathological examination results of patients with soft tissue tumors at Madani Medan General Hospital between the period 2018-2022. Specifically, this study will examine the description of the examination results based on the age and sex of the patients, as well as the histopathological diagnoses obtained. In addition, this study will also distinguish between benign and malignant tumors and analyze the relationship between age, histopathological diagnoses, and tumor types.

Method

This descriptive retrospective study aimed to determine the description of benign tumor patients with histopathological examination at Madani Medan General Hospital during the period 2018-2022. The study was conducted at Madani General Hospital, located in the Medan Area Subdistrict, Medan City, North Sumatra. The study was conducted in February 2024.

The population in this study included all medical records of inpatients diagnosed with soft tissue tumors at Madani Medan General Hospital during the period 2018-2022. The sample of this study was obtained using a non-probability sampling or total sampling method from 239 existing data, with a total sample size of 148. Inclusion criteria included patients aged 20 to 70 years, both male and female, who had undergone histopathological examination for soft tissue types such as Fibroma, Lipoma is more often found in the buccal mucosa, which is usually full of adipose tissue because it is adjacent to the buccal fat pad, besides other places where lipomas are common are the lips, tongue, floor of the mouth, sky, palate, vestibule, mandible, and retromolar pad. In contrast, the salivary glands, gingivobuccal folds, parotid, meseteric region and neck, and pharynx/larynx are the most commonly affected areas(9).

Fibroepithelial Polyp, Fibrolipoma, and Squamous Papilloma, Ewing's sarcoma, is one of the tumors shaped like small round blue cells. Ewing sarcoma is most commonly found in various locations such as the trunk, pelvis, spine, chest, and extremities(10). Palmoplantar epidermoid cysts usually have pathophysiological differences from cysts in general (11). If an epidermoid cyst is found to be large, it is suspected that it can interfere with the anatomy and physiology of the food and airways, which can affect the patient's health (12). The spread of tumors on the limbs was registered at the Anatomical Pathology Laboratory. Exclusion criteria are Patients who did not undergo histopathological examination according to predetermined criteria were excluded. Data collection was carried out by submitting a research permit to the Anatomical Pathology Laboratory of Madani General Hospital Medan and by using secondary data from patient medical records. The collected data will be analyzed using SPSS (Statistical Product and Service Solution) application for normality test and presented in the form of a distribution table.

Results

Table 1 shows the characteristics of the patients with soft tissue tumors. The data were based on a sample of 148 patients. The age of the patients ranged from 6 to 79 years. The most common age group was 21-30 years old, with 18.9% of the patients in this group. Of the patients, 57.4% were female and 42.6% were male. The most common tumor diagnosis was lipoma, with 47.3% of patients having this type of tumor. Other common tumor diagnoses included fibromas (36.5 %) and fibrolipomas (11.5%). All cases studied were benign tumors, and 100% of the total sample had no cases of malignant tumors.

Table 1. Characteristics of patients with soft tissue tumors (n=148)

Variable	n	%
Age		
6-20	19	12.8
21-30	28	18.9
31-40	27	18.2
41-50	30	20.3
51-60	29	19.6
61-79	15	10.1
Sex		
Female	85	57.4
Male	63	42.6
Tumor diagnosis		
Fibroma	54	36.5
Lipoma	70	47.3
Fibrolipoma	17	11.5
Sqamous Papilloma	4	2.7
Fibroepithelial Polyp	3	2

Table 2 shows the number of histopathological diagnoses for the various age groups. The most common diagnosis across all age groups was lipoma, followed by fibroma. The least common diagnoses were squamous papilloma and fibroepithelial polyps. In the 6-20 age group, fibroma was the most common diagnosis, followed by lipoma and fibrolipooma. In the 21-30 age group, fibroma and lipoma were again the most common diagnoses. In the 31-40 age group, lipoma became the most common diagnosis, followed by fibroma. In the 41-50 age group, lipoma remained the most common diagnosis. In the 51-60 age group, lipoma was again the most common diagnosis, followed by fibroma. In the 61-79 age group, lipoma and fibroma were diagnosed with similar frequencies.

Table 2. Histopathologic diagnoses by age

Age	Diagnosa Histopatologi					Total
	Fibroma	Lipoma	Fibrolipooma	Sqamous Papilloma	Fibroepithelial Polyp	
6-20	11	4	3	0	1	19
21-30	16	9	2	1	0	28
31-40	7	13	5	2	0	27
41-50	11	15	3	0	1	30
51-60	3	22	2	1	1	29
61-79	6	7	2	0	0	15
Total	54	70	17	4	3	148

Overall, the number of lipoma cases increased with age, while the number of fibroma cases decreased with age. The number of cases of fibrolipooma, squamous papilloma, and fibroepithelial polyps remained relatively constant across all age groups. In conclusion, the table shows that lipoma was the most common histopathological diagnosis across all age groups, followed by fibroma. The number of lipoma cases increases with age, whereas the number of fibroma cases decreases with age.

Discussion

The findings of this study showed that patients with soft tissue tumors were most prevalent in the 41-50 years age group, which is consistent with the findings of previous studies that reported a high prevalence of soft tissue tumors in adulthood. Those studies identified adulthood, especially the 40-60 years age range, as an age group with a significant incidence of soft tissue tumors, similar to our results which found the 41-50 years age group as the most prevalent age group.[7] The sex distribution in this study showed a higher prevalence in females than in males, in line with the results of previous studies. They found that benign soft

tissue tumors, such as lipomas, are more common in women.[8] This finding supports the results of our study, which shows that female patients dominate the soft tissue tumor population at Madani General Hospital.

The most common tumor type in this study was lipoma, with a prevalence of 47.3%. This is consistent with the results of Krisna's study[9], which also noted lipoma as the most commonly diagnosed type of soft tissue tumor. Lipoma is a benign, non-invasive tumor, which explains its high prevalence in this study. In contrast, the finding of a few cases of fibroepithelial polyps and the absence of malignant tumors suggests that our sample may not cover the entire spectrum of soft tissue tumors. Research by Pangestika and Vishnu[8] showed that although malignant tumors are less common than benign tumors, they are still present in a wider population. The absence of malignant tumors in our data may be due to limitations in the inclusion criteria or the limited sample size, which does not reflect the entire spectrum of cases.

The limitations of this study include the use of secondary data that may not include all types of soft tissue tumors and bias in sample selection that may affect the generalizability of the findings. Further studies with larger samples and more comprehensive methods are needed to obtain a more accurate picture of the prevalence and characteristics of soft tissue tumors in a wider population.

Conclusion

Based on the data analysis, it can be concluded that lipoma is the most prevalent type of benign soft tissue tumor in the studied population. This finding was consistent across all age groups, with the prevalence of lipomas increasing with age. Conversely, fibromas were less common, particularly in older age groups. The data also revealed that the majority of patients were female, suggesting a potential gender-based disparity in the incidence of these tumors. However, further research is needed to explore this observation and identify any underlying factors. Overall, the findings of this study contribute to a better understanding of the epidemiology of benign soft tissue tumors and can inform future research and clinical practice.

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