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Data Profile of Lipoma and Liposarcoma at the Anatomical Pathology Laboratory of Siloam MRCCC Semanggi Cancer Hospital Jakarta

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Abstract

Introduction: Soft tissue tumors arise from mesenchymal tissues, with lipoma and liposarcoma being common types derived from adipose tissue. Considering the increasing prevalence of tumors in Jakarta, updated data on these specific cases are essential for better diagnostic and preventive measures. **Objective:** This study aims to determine the data profile of lipoma and liposarcoma patients at the Anatomical Pathology Laboratory of Siloam Cancer Special Hospital MRCCC Semanggi Jakarta during 2018–2019. **Method:** This research used a descriptive method with a cross-sectional approach. Data were collected from secondary medical records of all patients diagnosed with lipoma and liposarcoma at the laboratory. **Result and Discussion:** The study identified 56 cases in total, consisting of 52 cases of lipoma (92%) and 4 cases of liposarcoma (8%). Lipoma was predominantly found in patients aged 40–60 years, consistent with global epidemiological trends, while liposarcoma cases remained rare but clinically significant due to their malignant nature. **Conclusions:** Lipoma is significantly more prevalent than liposarcoma at this facility. These findings provide baseline data for clinical management and further epidemiological studies in specialized cancer hospitals in Indonesia.

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Introduction

Soft tissue tumors present major diagnostic challenges in medical practice. Doctors must differentiate benign and malignant tumors accurately to plan proper therapy. Lipoma represents the most common benign tumor of mature adipocytes. This mass usually appears in superficial soft tissues (Novianti, Gorda, & Wirata, 2023); (Rachmanio & Fredianto, 2025). Conversely, liposarcoma acts as a highly aggressive malignant fat tissue tumor (Astape, Jeniyanti, & Setiawan, 2023); (Wiryanti, Yohana, Durachim, & Mahmud, 2022). Identifying and understanding the clinical characteristics of both tumors holds a crucial role. Precise pathological analysis determines the success rate of medical treatment.

Clinically, lipoma and liposarcoma can overlap in presentation, particularly when lesions are large, deep-seated, or slowly progressive (Biddulth, n.d.); (Hardini, 2020). Lipomas are typically soft, mobile, painless, and well-circumscribed masses, most often arising in subcutaneous tissue, and they generally have a benign course with local excision as definitive management (Simanjuntak, 2022); (Arsyi, 2022). In contrast, liposarcomas—especially deep soft-tissue sarcomas—may present as enlarging masses in deep compartments (e.g., thigh, retroperitoneum) and can be less mobile, larger at diagnosis, and associated with functional limitation or compressive symptoms depending on location (Mahrouch et al., 2022). Because clinical signs alone may be insufficient, diagnostic work-up often relies on imaging and tissue confirmation to avoid undertreatment of malignancy or overtreatment of benign disease.

From a pathological standpoint, distinguishing lipoma from liposarcoma is essential because management and prognosis differ substantially. Lipoma is composed of mature adipocytes with minimal atypia, while liposarcoma encompasses a spectrum of malignant adipocytic tumors with variable differentiation and behavior. Well-differentiated liposarcoma/atypical lipomatous tumor may resemble benign lipoma grossly and microscopically, particularly in small biopsies, yet it carries a risk of local recurrence and, in certain anatomical sites (notably retroperitoneum), significant morbidity due to repeated recurrences (Islami & Sakti, 2023). More aggressive subtypes, such as dedifferentiated, myxoid, and pleomorphic liposarcoma, show higher malignant potential and can require multimodal therapy. Therefore, histopathology—supported when needed by ancillary studies—provides the decisive basis for diagnosis and guides surgical margins, referral pathways, and follow-up intensity.

Epidemiological data reveal contrasting incidence rates between these two tumor types. Lipoma prevalence reaches approximately 1% of the total global population. This condition most frequently affects individuals aged 40 to 60 years. Liposarcoma shows a different incidence pattern. This malignancy records an incidence rate of 2.5 cases per 1 million population annually. Liposarcoma also accounts for 17% of total global soft tissue sarcoma cases. These statistical trends confirm the urgency of monitoring adipocytic tumor cases systematically.

In oncology practice, improving early recognition of potentially malignant adipocytic tumors also depends on understanding “red flag” clinical features and typical anatomical distributions. Lesions that are deep to the fascia, rapidly enlarging, >5 cm, painful, or associated with neurovascular symptoms generally warrant further assessment, including advanced imaging and specialist referral. In parallel, anatomical location is clinically meaningful: superficial subcutaneous masses are more often benign, while deep extremity compartments and retroperitoneal spaces raise higher suspicion for sarcoma. A

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clearer profile of patient demographics and tumor location patterns can therefore support clinical triage and reduce diagnostic delay.

Many previous studies only discuss soft tissue tumors generally. Past researchers rarely compare the demographic characteristics of lipoma and liposarcoma patients directly. Current literature lacks specific patient profile mapping in Indonesian cancer referral centers. This data void complicates early detection for clinicians. Medical professionals urgently need empirical data regarding patient age, gender, and anatomical tumor location to sharpen early diagnostic accuracy. This research aims to analyze the characteristics of lipoma and liposarcoma patients comparatively. Researchers identify patient profiles based on gender, age group, and tumor location. The study focuses on medical record data at Siloam MRCCC Semanggi Hospital in Jakarta. This objective directly addresses the critical need for missing clinical data. The research results provide an empirical foundation for doctors to improve soft tissue tumor management quality.

Method

This study uses a descriptive observational method with a cross-sectional approach. Researchers extracted secondary data directly from hospital medical records. The sample includes all patients with lipoma and liposarcoma diagnoses. Researchers gathered these data at the Anatomy Pathology Laboratory of Siloam MRCCC Semanggi Hospital in Jakarta. This facility operates as a major Type A specialized cancer referral center. The research team specifically analyzed clinical cases from 2018 to 2019. This targeted approach accurately maps the empirical distribution of adipocytic tumors within a specialized clinical environment.

Result and Discussion/Use bullet points if the results and discussion are separated

1. Result

Lipoma Distribution by Patient Gender

The study identified 52 lipoma cases. The sample comprises 27 male patients and 25 female patients. Table 1 presents this data.

Table 1
 Frequency Distribution of Lipoma by Gender

Gender	Percentage (%)
Male	51.91
Female	48.09
Total	100

Lipoma Distribution by Patient Age

The study diagnosed 52 patients with lipoma. Early adulthood recorded the highest incidence with 17 cases. Late adulthood followed with 14 cases. The early elderly group had 11 cases. The late elderly group showed 6 cases. Late adolescence recorded 3 cases. Early adolescence had 1 case. Table 2 presents these findings:

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Table 2
 Frequency Distribution of Lipoma by Age

Category	Frequency (n)
Toddlers (0-5 Years)	0
Children (5-11 Years)	0
Early Adolescents (12-16 Years)	1
Late Adolescents (17-25 Years)	3
Early Adults (26-35 Years)	17
Late Adults (36-45 Years)	14
Early Elderly (46-55 Years)	11
Late Elderly (56-65 Years)	6
Total	52

Distribution of Lipoma Based on Tumor Location

Among 52 lipoma patients, 21 individuals had tumors located on the trunk. Nine patients presented with tumors in the head and neck region. Six patients had tumors on the superior extremities, while three patients showed tumors on the inferior extremities. The location was unknown for 13 patients. Table 3 illustrates these findings:

Table 3
 Distribution of Lipoma Based on Tumor Location

Gender	Total (n)	Frequency (%)
Head & Neck	9	17.3
Trunk	21	40.3
Superior Extremities (or Upper Limbs)	6	11.5
Inferior Extremities (or Lower Limbs)	3	5.9
Unknown (or Not Specified)	13	25
Total	52	100

Distribution of Liposarcoma Based on Patient Gender

Four cases of liposarcoma were identified, consisting of two males and two females. Table 4 illustrates these findings:

Table 4
 Distribution of Liposarcoma Based on Gender

Gender	Frequency (%)
Male	50
Female	50
Total	100

Distribution of Liposarcoma Based on Patient Age

Two cases of liposarcoma were identified in patients aged over 65 years. One case occurred in the late adult group, and another in the late elderly group. Table 5 illustrates these findings:

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Table 5
 Distribution of Liposarcoma Based on Age

Category	Total (n)
Toddlers (0-5 Years)	0
Children (5-11 Years)	0
Early Adolescents (12-16 Years) Late	0
Adolescents (17-25 Years)	0
Early Adults (26-35 Years)	0
Late Adults (36-45 Years)	1
Early Elderly (46-55 Years)	0
Late Elderly (56-65 Years)	1
Seniors (>65 Years)	2
Total	4

Distribution of Liposarcoma Based on Tumor Location

Four cases of malignant liposarcoma were identified. Two cases (50%) were located on the inferior extremities, one case (25%) on the trunk, and one case (25%) was from an unknown location. Table 6 illustrates these findings.

Table 6
 Distribution of Liposarcoma Based on Tumor Location

Gender	Total (n)	Frequency (%)
Head & Neck	0	0
Trunk	1	25
Superior Extremities	0	0
Inferior Extremities	2	50
Unknown	1	25
Total	52	100

2. Discussion

This study identified a total of 56 adipocytic tumor cases, comprising 52 lipoma cases and 4 liposarcoma cases. The ratio between both tumors is consistent with global epidemiological data indicating that lipoma is far more common than liposarcoma.

Gender distribution in both groups showed a nearly balanced proportion between male and female patients, suggesting that adipocytic tumors do not demonstrate a significant gender predilection, which is consistent with the majority of existing literature. Regarding age distribution, lipoma was most frequently diagnosed in the early to late adult age groups. This pattern differs slightly from literature that generally reports peak lipoma incidence between 40 and 60 years of age, possibly because the productive-age population tends to seek medical attention more actively. In contrast, all liposarcoma cases were concentrated in older age groups, ranging from late adults to seniors. This finding aligns with the pathogenesis of malignancy, which is associated with accumulation of genetic mutations and declining immune function with advancing age.

Tumor location revealed meaningful differences between the two groups. Lipoma predominated in the trunk region, supporting WHO guidelines regarding the most common site of lipoma growth in superficial subcutaneous tissue. Liposarcoma, on the other hand, was more frequently found in the inferior extremities, representing a deep tissue compartment. Masses located in deep tissue and presenting at a large size constitute red flag features warranting further evaluation to exclude malignancy

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Conclusion

This study identified 56 adipocytic tumor cases at the Anatomical Pathology Laboratory of Siloam MRCCC Cancer Hospital Jakarta from 2018 to 2019. The sample included 52 lipoma cases and 4 liposarcoma cases. Demographically, the prevalence of both tumor types was higher in the male population. Patients in the early adulthood range (26 to 35 years) recorded the highest incidence. Tumor growth generally spread evenly across various anatomical regions of the body.

Specifically, lipoma predominated in male patients aged 26 to 35 years. The trunk served as the primary predilection site for lipoma occurrence. Conversely, liposarcoma exhibited distinct clinical characteristics. This malignancy affected the elderly group aged over 65 years. Males and females showed an equal risk level for liposarcoma. The inferior extremities acted as the most dominant anatomical location for liposarcoma growth.

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