

Prevalence of Soft Tissue Tumors (Both Benign and Malignant) Presenting in A Tertiary Care Hospital on Central India

Aparajita Tomar¹, Parul Nema², Hemlata Bamoriya², Ram Pratap Singh Chouhan³

¹MD, Associate professor, Department of pathology, SRVS Medical College, Shivpuri, Madhya Pradesh

²MD, Assistant Professor, Department of pathology, SRVS Medical College, Shivpuri, Madhya Pradesh

³MD, Anesthesiology, Medical Officer, District Hospital Shivpuri, Madhya Pradesh

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Corresponding author: Dr. Ram Pratap Singh Chouhan

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Abstract

Background: Soft tissue tumors are mesenchymal proliferations that arise in non-epithelial extra skeletal tissue of the body, excluding the visceral organs. Both benign and malignant tumors typically appear as a lump without causing any discomfort. Most soft-tissue masses can be diagnosed by a core biopsy, excisional biopsy, or incisional biopsy.

Aims and objectives: To determine the prevalence of various benign and malignant soft tissue tumors in the hospital population and the relationship between clinical manifestations and the histological characteristics of these lesions.

Materials and Methods: This observational study was undertaken with attending patients at a tertiary care hospital. Clinical data were collected in detail, such as the patient's history, clinical examination findings, and radiological findings. The lesion site defines soft tissue tumors as head and neck, trunk, and upper and lower extremities.

Results: As a result of our research, benign lesions comprise 90% of all instances, while malignant lesions include just 10%. Our study found that lipoma was the most common soft tissue tumor, followed by haemangioma, fibroma, and schwannoma. High-grade sarcoma is the most prevalent malignant soft-tissue tumor in our study, with a propensity for those ages 41-60 years.

Conclusion: Even though soft tissue sarcomas are uncommon and typically present as an asymptomatic tumor, early detection is critical for the best possible treatment. More large-scale, multicentre prospective studies are required to grasp better how these tumors behave and progress in the general population.

Keywords: Benign, Malignant, Lipoma, Sarcoma, Tumours.

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Introduction

Soft tissue refers to non-epithelial, extra-skeletal bodily tissue (excluding reticuloendothelial), glia, and supporting tissue of parenchymal organs. The voluntary muscles, adipose tissue, fibrous tissue, and the arteries that serve these tissues make up this group. They're divided into groups based on their mimic tissue (e.g., muscle, fat, fibrous tissue, vessels, and nerves). Soft tissue tumors are mesenchymal proliferation in non-epithelial tissue outside of the skeleton, excluding the viscera, brain coverings, and lymphoreticular system.

The pathophysiology of most soft tissue tumors, like that of many other malignant tumors, is unknown. Various chemical and physical conditions, ionizing radiation exposure, and inherited or acquired immune abnormalities are all known causes. Because of the extended latent period, determining the exact etiology is challenging. Soft tissue tumors can strike people of any age. The histological distribution of soft tissue tumors is unique for a specific age group at a specific anatomical region [1].

Soft tissue tumors, both benign and malignant, typically manifest as painless lumps. A biopsy is recommended when a soft tissue mass appears in a patient with no history of trauma or when a mass persists even after 6 weeks following local trauma. They can occur at any part of the body, with the extremities, trunk, abdominal cavity, and head and neck region being the most common [2]. By taking a detailed clinical history, performing a physical examination, and inspecting the tumors with the naked eye. Clinical characteristics such as the patient's age, tumor location, and size aid in reducing the differential diagnosis. Soft tissue cancers are defined clinically based on location, growth pattern, recurrence risk, presence and distribution of metastases, patient age, and prognosis [1].

Although most soft tissue tumors of various histogenetic kinds are classified as benign or malignant, many are mixed, with aggressive local behavior and a low to moderate potential for metastasis. In general, benign soft tissue tumors are 10 times more common than malignant soft tissue tumors, while the real frequency of soft tissue tumors is unknown because many of them do not present to the clinician.

Materials and Methods:

The present observational study was conducted at the tertiary care hospital; we have collated the histopathological data of 150 subjects. This study includes all patients with soft tissue lesions referred to the pathology department from various departments for histological investigation, excluding the individuals who came with uterine and gastrointestinal soft tissue tumors or for whom informed consent could not be acquired; the study covered all patients referred with soft tissue lesions wherever in the body, regardless of age or gender. The study subjects were chosen using a sequential kind of non-probability sampling.

Clinical data were collected in great detail, including the patient's medical history, clinical examination findings, and radiological findings. Soft tissue tumors are divided into the head and neck, upper and lower extremities, and trunk. The capsule, size, consistency, necrosis, bleeding, calcification, ossification, and attachment to neighboring structures were recorded.

Microsoft Excel 2007 was used to collect the data. The information has been compiled and presented in graphs and diagrams.

Result:

Out of 150 subjects, 98 were males, and 52 were females. Out of 150, 134 (90%) were

benign tumors,' and 16 (10%) were malignant cases.

Age distribution of benign soft tissue tumor (Figure 1.) patients shows that lipomalipoma is the most common lesion,

followed by Haemangioma and Neurofibroma. The most commonly affected age group by benign soft tissue tumor is between 21-40 years, followed by 41-60 and above 60 years.

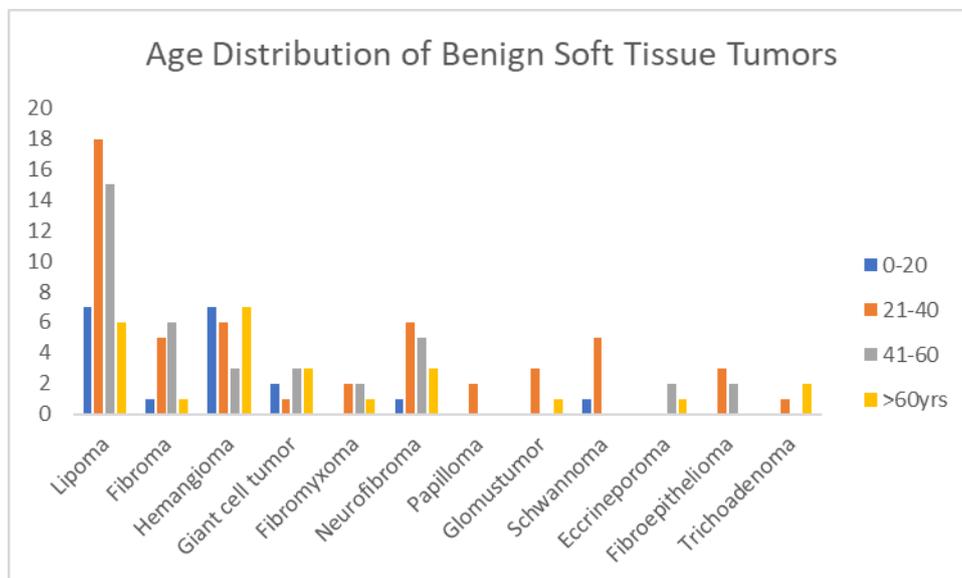


Figure 1: Age-wise distribution of benign soft tissue tumors.

Similarly, the distribution of malignant soft tissue tumors (Figure 2) shows that High-grade sarcoma is the most common tumor, followed by small round blue cell tumors, spindle cell sarcoma, and synovial

sarcoma tumors. The most common affected subjects are in the age group 41-60 years followed by 21-40 (31%), 25% were above 60 years, and 6% subjects were below 21 years.

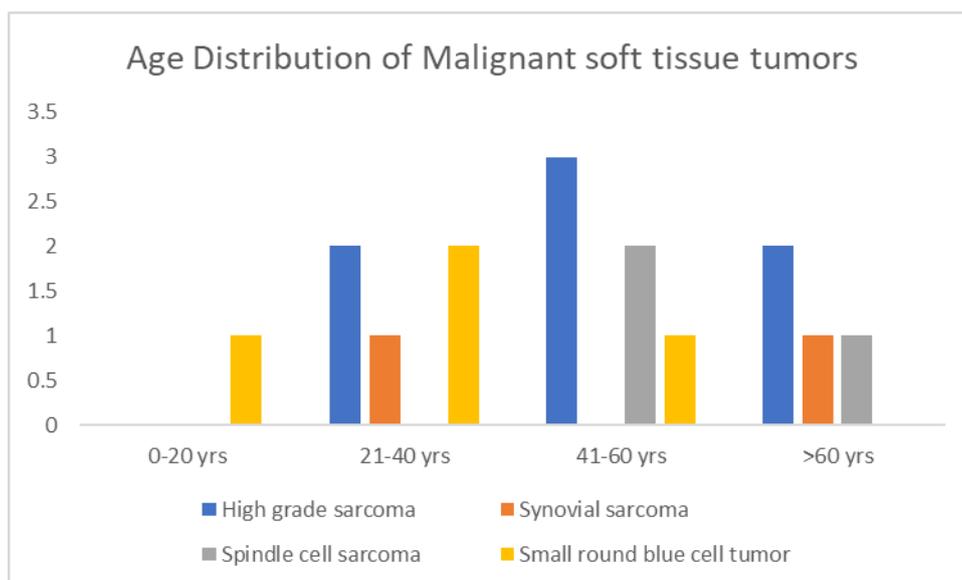


Figure 2: Age-wise distribution of malignant soft tissue tumors.

Gender distribution of benign soft tissue (Figure 3.) shows that lipomalipoma is the most common lesion in 34% of male and female subjects, followed by Haemangioma (17%) and Neurofibroma in

11% of subjects of both genders, which shows gender does not correlate with the type of tumor. Similarly, distribution of subjects of malignant soft no correlation of gender with the type of tumor.

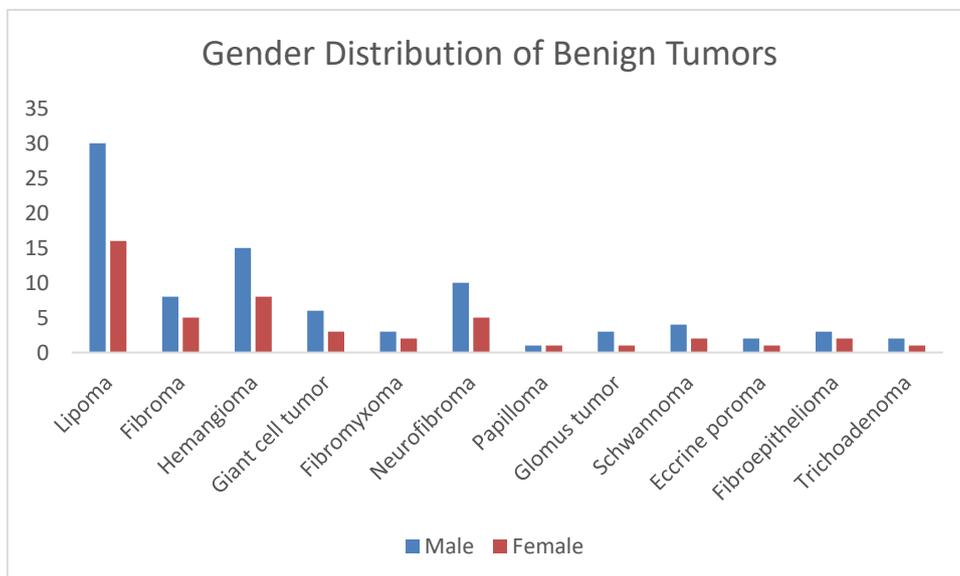


Figure 3: Gender distribution of subjects of benign soft tissue.

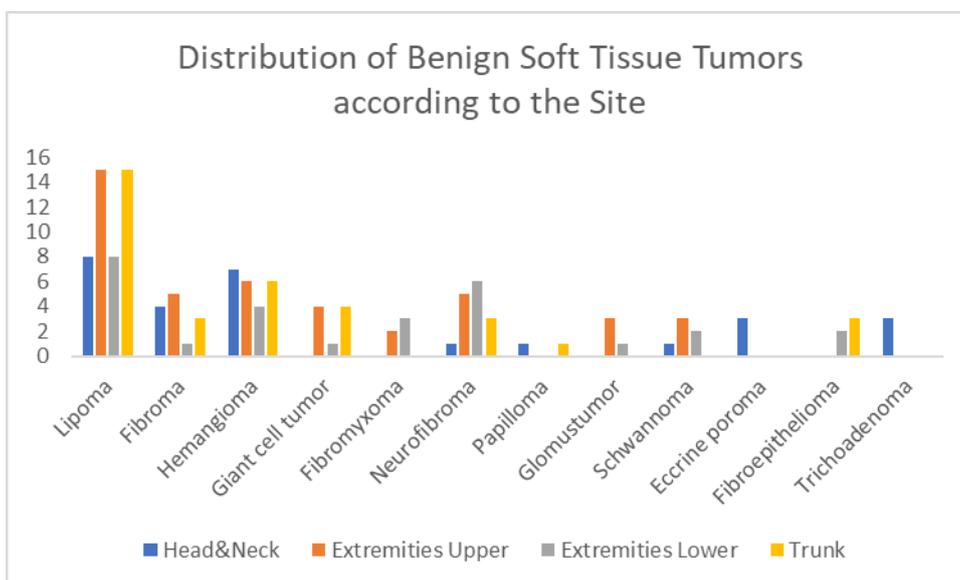
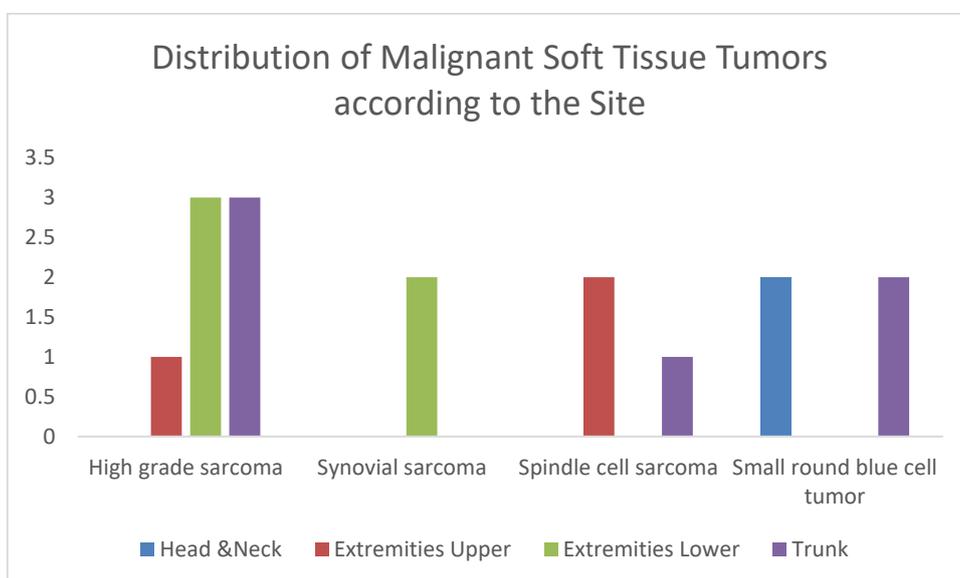
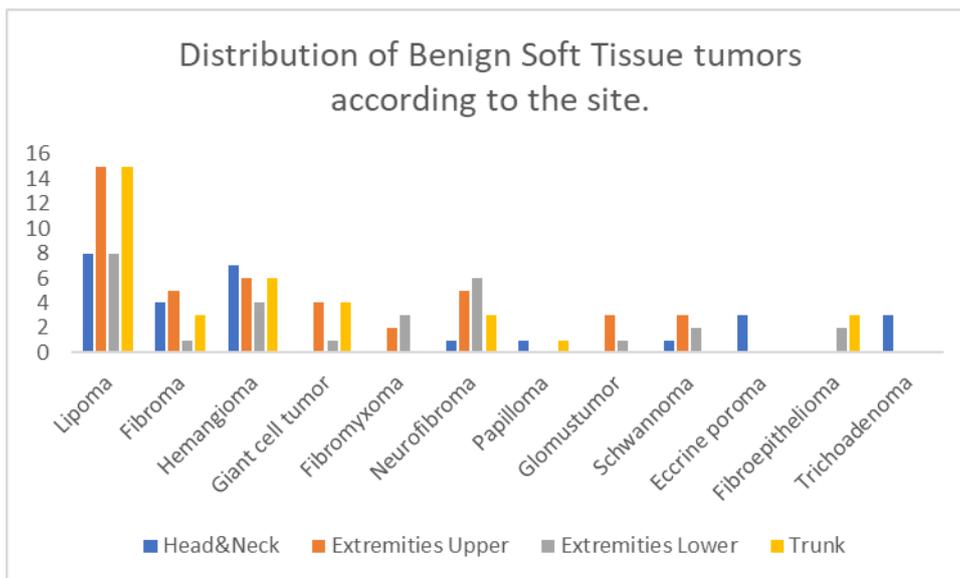


Figure 4: Gender distribution of subjects of malignant soft tissue.

Distribution of site of benign soft tissue tumor (Figure 3.) shows that upper extremities are the most common site of the lesion followed by trunk, head and

neck and lower extremities on the other hand common site malignant tumors' (Figure 4) is trunk followed by lowers extremities and upper extremities.



Discussion:

The majority of soft tissue tumors can develop at any age, and the pathophysiology of some of these lesions remains unexplained. Even at the microscopic level, subtle distinctions between soft tissue masses are visible. This has resulted in the diagnostic difficulty associated with many benign and malignant cancers. Diagnostic accuracy can be increased by getting a complete history, determining the location and size of the tumor, and examining demographic

characteristics such as age and sex distribution.

According to the findings of this study, lipomalipoma was the most prevalent lesion in 34% of individuals, followed by Haemangioma (17%) and Neurofibroma (11%). These findings parallel BG Ramnani et al. (2014) and P Jain et al. (2014). [4,6] The true prevalence of lipomas was higher in the population because they are asymptomatic and show little or no development.

In this study, the majority (38%) of patients with benign soft tissue tumors

were between the ages of 21-40 years, followed by 41-60 years (28%) and over 60 years (28%), respectively. In a similar study conducted at Bangalore medical college, the mean age of patients with soft tissue tumors was 40.4 years, with a peak distribution in the age category of 21-40 years (37.7 %) [5]. Another study conducted at SGPGI Lucknow found that nearly half of patients with benign soft tissue tumors were between 21 and 40 years [6]. The majority of cases (43%) were lipomalipoma, followed by neurofibroma (11.8 %) and haemangioma (8.6 %). Our findings corroborate Reily Ann Ivan et al. (n=155) at Chennai Medical College, who discovered a similar proportion and age distribution of benign and malignant tumors. Lipoma was the most prevalent soft tissue tumor, accounting for most cases in 29-40 years [7]. However, a study conducted at Narayana Medical College by GudeliVahini et al. discovered the highest number of lipoma patients; however, all cases were over 60 years old [8].

In our investigation, neurofibromas were observed in individuals aged 21-60 years. In a similar study conducted at Sevagram (Wardha), patients with typical neurofibroma were 32.73 years, whereas patients with diffuse neurofibroma were 25.6 years [9]. In Kransdorf's study, neurofibroma occurred at an average age of 37 years and was more prevalent in males. They were found throughout the body but were most prevalent in the head and neck region, trunk, and lower extremity [10]. According to Pramila Jain et al., most benign soft tissue tumors are adipocyte tumors, followed by vascular tumors [4].

The present study recorded the prevalence of high-grade sarcoma (43%), round blue cell tumor (25%), spindle cell sarcoma (19%), and synovial sarcoma tumor (12%) were detected among malignant soft tissue cancers. The most affected age group

(38%) was 41-60 years, followed by 21-40 years (31%), 25 % were above 60 years, and 6% were under 21 years. Kinjal Bera et al. conducted a study in which malignant instances were reported in patients above 50 [11].

The study by Reily Ann Ivan et al. revealed similar results, with only 16 malignant occurrences out of 155 patients, with most cases occurring in the age bracket of 31-40 years [7].

In the current study, the gender distribution of participants with benign soft tissue lesions reveals that lipomalipoma was the most prevalent lesion in 34% of both sexes, followed by Haemangioma (17%) and Neurofibroma in 11% of both sexes, indicating that gender has no link with tumor type. Similarly, no association was observed between gender and malignant soft tissue tumors. In a comparable study undertaken at a medical college in Karnataka, the tumor distribution between the sexes was nearly equal [12]. The ratio was higher than in previous investigations. Kinjal Bera et al. found that males had a somewhat larger proportion of benign tumors (54.3 %) [11]. Pramila Jain et al. discovered that of 370 cases, 206 (55.7%) were male and 164 (44.3%) were female [4].

The present study discovered that upper extremities (32%), trunk (26%), and head and neck (20%) are the most common sites for benign soft tissue tumors. In comparison, the trunk (37%), lower extremities (31%), and upper extremities (19%) are the most common sites for malignant soft tissue tumors. Similarly, much research has revealed that the trunk is the most common place for benign tumors, followed by the lower extremities. In contrast, the lower extremities are the most common site for malignant lesions. According to Pramila Jain et al., 40% of soft tissue cancers arise in the lower extremities [4]. GudeliVahini found that most soft tissue cases were in the head and

neck region [8]. However, Lazim et al. [13] found a different outcome.

Conclusion:

Even though soft tissue sarcomas are rare and typically manifest as a painless mass, the clinician must be able to recognize them early to provide the best possible treatment. Large-scale, multicenter prospective studies are required to gain a more thorough understanding of the behavior and outcome of these malignancies in our population.

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