ORIGINAL RESEARCH PAPER

Volume-7 | Issue-11 | November-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

HISTOPATHOLOGICAL STUDY OF SOFT TISSUE TUMOURS – STUDY OF 117 CASES

Pathology

Dr S Srikanth Professor, Department of Pathology, Prathima Institute of Medical Sciences, Nagunur, Karimnagar, Telangana, India.

ABSTRACT

Introduction: Soft tissue neoplasms (STNs) are defined as mesenchymal proliferations that occur in the extraskeletal, nonepithelial tissues of our body, excluding the viscera, coverings of brain and lympho-reticular system.

Materials & Methods: The present study is a retrospective and prospective study done for a period of two years. All the specimens were recieved from the department of General Surgery after surgical removal and sent for histopathological examination.

Results: Leiomyoma was the most common benign tumour in our study and fibrosarcoma is the most common malignant tumour in our study and age group 41-50 contributed highest number of cases.

Conclusion: Final diagnosis for all soft tissue tumours is done on histopathological examination, although it is confirmed by Immunohistochemistry. In our study IHC is not done as it is not available in our institute.

KEYWORDS

Soft tissue, lipoma, leiomyoma, malignant

INTRODUCTION

Soft tissue tumors constitute a large and heterogeneous group of neoplasms. Clinically soft tissue tumors range from benign, self limited lesions to intermediate grade to highly aggressive. Most of soft tissue tumors are benign, while few of them are malignant in nature. It ranges from most common benign tumours to some of the rare malignant soft tissue tumors. They are classified according to the tissue they recaptitulate, although there is little evidence that they actually arise from the normal differentiated counterpart. Some soft tissue tumours have no normal tissue counterpart but have constant clinicopathologic features warranting their designation as distinct entities. In contrast to carcinomas, sarcomas usually metastasize via hematogenous routes, making the lung and skeleton common sites of dissemination.[1,2]

MATERIALS & METHODS

The present study is a retrospective and prospective study done for a period of two years. All the detailed investigations, history and clinical diagnosis were taken into account. A total of 117 cases were studied.All the specimens were recieved from the department of General Surgery. Specimens were fixed in 10% formalin, sections were given serially and observed under microscope.

RESULTS

Out of 117 cases, 105 were benign and 12 were malignant. Among the benign cases, Leiomyoma was the most common neoplasm and among malignant one Fibrosarcoma was the commonest. Males were more affected than female and age group between 41-50 is most commonly affected.

Table 1: Showing benign and malignant soft tissue tumours

Type of lesion	Number of cases
Benign	105
Malignant	12
Total	117

Table 2: Showing different lesions

Tumour	No.of cases
Leiomyoma	47
Lipoma	23
Fibroma	04
Schwannoma	12
Neurofibroma	10
Giant cell tumour	06
Glomus tumour	03
Fibrosarcoma	04
Rhabdomyosarcoma	02
Synovial sarcoma	02
Leiomyosarcoma	02
Undifferentiated sarcoma	02
Total	117

DISCUSSION

Soft tissue neoplasms (STNs) are defined as mesenchymal proliferations that occur in the extra skeletal, nonepithelial tissues of our body, excluding the viscera, coverings of brain and lympho reticular system. Like many other malignant tumors, the pathogenesis of most of the STNs is still unknown. Recognized causes include various chemical and physical factors, exposure to ionizing radiations, and inherited or acquired immunologic defects. Evaluation of the exact cause is difficult because of the long latent period. STNs can occur at any age. It has been noted that the histologic distribution of STNs is rather specific for a particular age group at a particular anatomical site.[3,4]

They arise nearly everywhere in the body, the most important locations being the extremities, trunk, abdominal cavity, and head and neck region.[3] Both benign and malignant STNs commonly present as a painless mass. When a soft tissue mass arises in a patient with no history of trauma or when a mass is persisting even after 6 weeks after a local trauma, a biopsy is indicated.

There is no known predisposing cause but majority of them arises sporadic. Unlike tumors like carcinoma that usually arises from recognized precursor lesions; the origin of sarcomas is unknown. It has been postulated that the tumors arises from pluripotent mesenchymal stem cells, which acquires somatic driver mutation in oncogenes and tumor suppressor genes. Reports have linked specific genetic, immunodeficiency, viral infection and environmental factors with the development of some STS. Environmental factors (e.g., radiation, herbicides) have been associated with the development of specific types of sarcomas.[5]

Some sarcomas have a higher predisposition to occur in the setting of familial cancer syndromes (e.g., retinoblastoma syndrome, Li-Fraumeni syndrome, hereditary leiomyomatosis and renal cell carcinoma)[6]. These observations suggest that both environmental and genetic factors are important in the development of these tumors.

Soft tissue tumours may arise in any location, approximately 40% occur in the lower extremity, especially the thigh, 20% in the upper extremity, 10% in the head and neck and 30%inthe trunk and retroperitoneum. Regarding sarcomas, males are affected more frequently than females and the incidence generally increases with age.

Leiomyomas, the benign smooth muscle tumour, often arise in the uterus. They develop in77% of women and depending on their number, size and location may cause a variety of symptoms including infertility. They may arise from the arrector pili muscles found in the skin, nipples, scrotum and labia.These are called as pilar leiomyomas and they are painful.

The number of soft tissue tumours diagnosed as fibrosarcoma has now dropped, partly because of reclassification of fibromatoses which have

aggressive and recurrent behaviour, and partly due to inclusion of many of such tumours in the group of fibrous histiocytomas. Fibrosarcoma is a slow growing tumour, affecting adults between 4th and 7th decades of life. Most common locations are the lower extremity, upper extremity, trunk, head and neck and retroperitoneum. The tumour is capable of metastasis, chiefly via the blood stream.

Majority of the soft tissue tumors can be diagnosed by their individual characteristics on routine haematoxylin and eosin sections under light microscopy. Hence the light microscopy still remains as the basic method for the diagnosis of soft tissue tumors in majority of the institutes. Newer techniques such as cytogenetic, Immunocytochemistry and electron microscopic study being widely used diagnostic tools to solve the difficult cases of soft tissue tumors.

Although these methods are more reliable, their high cost is the major drawback. Immunocytochemical methods also have a limitation of significant overlapping in their findings among different soft tissue tumors and no single marker alone can reliably be used to substantiate the presumptive diagnosis. In the study done by Anders Rydholm, out of 278 soft tissue sarcomas, 22% were malignant fibrous histiocytoma. Hashimoto H et al, Costa j et al[7] & Lawrence et al.[8] stated that 12-33% of soft tissue sarcomas were MFH.

Lipoma is the commonest soft tissue tumour. It appears as a solitary, soft, movable and painless mass which may remain stationary or grow slowly. Lipomas occur most often in 4th to 5 th decadesof life and are frequent in females. They may be found at different locations in the body but most common sites are the subcutaneous tissues in the neck, back and shoulder. A lipoma rarely transforms into liposarcoma.

Liposarcoma is one of the most common soft tissue sarcomas in adults, perhaps next in frequency only to malignant fibrous histiocytomas. Unlike lipoma which originates from mature adipose cells, liposarcoma arises from primitive mesenchymal cells, the lipoblasts. The peak incidence is in 5th to 7th decades of life. In contrast to lipomas which are more frequently subcutaneous in location, liposarcomasoften occur in the deep tisues. Most frequent sites are intermuscular regions in the thigh, buttocks and reroperitoneum.

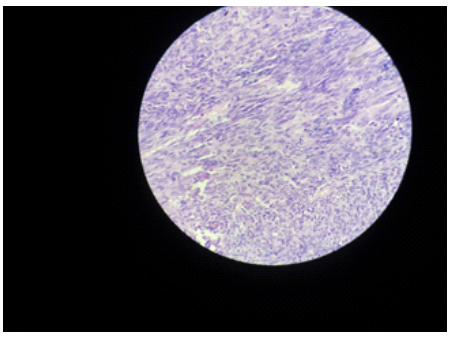
Rhabdomyosarcoma is a much more common soft tissue tumour than rhabdomyoma, and it is the commonest soft tissue sarcoma in children and young adults. It is a highly malignant tumour arising from rhabdomyoblasts. Synovial sarcoma is a distinctive soft tissue sarcoma arising from synovial tissues close to the large joints, tendon sheaths , bursae and joint capsule but almost never arising within joint cavities.

CONCLUSION

The diagnosis and management of STNs require a team perspective. Even though soft tissue sarcomas are rare and usually present just as painless mass, the clinician must be able to diagnose it early for better management. A careful gross examination of the specimen and adequate sampling of the tumor is essential. Immunohistochemistry and special stains are helpful in addition to the routine H and E for the proper diagnosis of STNs. Availability of a modern, more logical histopathologic classification and standard nomenclature now offers a better clinic-pathologic correlation.

The clinico-morphologic evaluation is still the gold standard for the proper diagnosis of soft tissue tumors.

Figure 1: Section showing tumour tissue arranged wavy and interlacing fascicles having tapering nuclei- Leiomyoma [H&E,x40]



REFERENCES

1. Kransdorf MJ. Malignant soft tissue tumors in a large referral population: distribution of specific diagnosis by age, sex and location. Am J Roentgenol 1995;164:129-34.
2. Hassawi BA, Suliman AY, Hasan IS. Soft tissue tumors-histopathological study of 93 cases. Ann Coll Med Mosul 2010;36:92-8.
3. Beg S, Vasenwala SM, Haider N, Ahmad SS, Maheshwari V, Khan MA.A comparison of cytological and histopathological findings and role of immune-stains in the diagnosis of soft tissue tumors. J Cytol 2012;29:125-30.
4. Fletcher C.D.M., Unni K.K., Mertens F. (Eds.): World Health Organization Classification of Tumours. Pathology and Genetics of Tumours of Soft Tissue and Bone. IARC Press: Lyon 2002.
5. Pramila Jain, ArchanaSrivastava, Rani Malik. Clinico-morphological assessment of soft tissue tumors. Sch J App Med Sci 2014;2:886-90.
6. Harshmohan text bok of Pathology. Jaypee Publishers, 8th edition, 27th chapter.
7. Costa J, Wesley RA, Glatstein E, et al. The grading of soft tissue sarcomas. Results of a clinicopathological correlation in a series of 163 cases. Cancer. 1984;53(3):530.
8. Launonen V, Vierimaa O, Kiuru M, et al. Inherited susceptibility to uterine leiomyomas and renal cell cancer. ProcNatlAcadSci USA. 2001;98(6):3387–3392.