

Original Research Article

Role of Histopathology in Diagnosis of Soft Tissue Swellings

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Abstract: Soft tissue swellings are a common presentation in a pathologists life. Though cytology is usually the first investigation done to determine the diagnosis, Histopathology no doubt remains a gold standard in diagnosis. Due to close resemblance to each other, they may pose difficulty in differentiation. It becomes important to study the spectrum of histopathological features in detail. The main objective is to study various histopathological features and differentiate between benign and malignant lesions. A study of 100 soft tissue swellings was done. These were submitted in 10% formalin. The swellings were grossed and sections were processed and stained with H&E. Detailed microscopic examination was noted and classified into benign and malignant lesions. Out of 100 cases, 92 swellings were benign and rest 8 cases were found to be malignant. The most common benign tumor were of adipocytic lineage(66.3%) followed by vascular lesion(8.6%). Even though benign lesions constituted most of the cases, it is essential to differentiate malignant lesions from benign ones in order to manage the high rate of morbidity and mortality associated with it.

Keywords: Soft tissue, swelling, malignant lesions

INTRODUCTION

Soft tissue tumors are mesenchymal tumors arising from non epithelial extraskelatal tissues [1]. They are named according to the benign component they are arising from [2].

Most common site are the extremities followed by the trunk [3]. Even though benign components are much more common than their malignant counterparts, but it is important that these rare but highly mortal malignant tumors are timely and adequately diagnosed [4] as multimodality therapy is often required in addition to surgical removal due to their aggressive behaviour and associated poor prognosis [5]. Histopathology being the gold standard diagnostic technique holds the responsibility of not only the correct diagnosis but also the prognosis based on associated malignant microscopic features such as necrosis, mitotic figures [6].

Histopathology in combination with clinical and radiological features opens doors to a highly reliable and confirmed diagnostic tool.

Immunohistochemistry further adds to the reliability of histopathology.

MATERIALS AND METHODS

A study of 100 soft tissue swellings was done. Detailed clinical history, clinical findings and radiological findings were noted. The biopsies or complete swelling were submitted in 10% formalin. The swellings were grossed and sections were processed and stained with H&E.

RESULTS

Table 1: The incidence of soft tissue swellings in various age groups

Age group	No of patients affected
10-30 years	23
30-50 years	64
>50 years	13

The most common age group affected was (30-50) years of age

Table 2: The Male:Female ratio

Males	56
Females	44

Benign	92
Malignant	08

The Male: Female ratio was 1.27

Out of 100 cases, 92% swellings were benign and 8% cases were found to be malignant

Table 3: The Frequency of Benign soft tissue lesions in relation to malignant counterparts

Table 4: Frequency of cases categorised according to WHO classification

	Benign	Malignant
Adipocytic tumors	61	
Fibroblastic	07	
So called Fibrohistiocytic tumors	04	03
Smooth muscle tumors	02	01
Pericytic(Perivascular)	02	
Skeletal muscle tumors		01
Chondro-osseous tumors		
Nervous	07	
Vascular	09	
Tumors of uncertain differentiation		03
	92	08

Table 5: Frequency of various benign lesions

Adipocytic tumors :	
Lipoma	58
Spindle cell lipoma	02
Fibrolipoma	01
Fibroblastic / myofibroblastic tumors :	
Nodular fasciitis	02
Elastofibroma	01
Fibroma	01
Desmoid Fibromatosis	01
Keloid	02
So called Fibrohistiocytic tumors :	
Benign fibrous histiocytoma	04
Nerve sheath tumors :	
Schwannoma	01
Neurofibroma	06
Vascular tumors :	
Hemangioma	08
Lymphangioma	01
Pericytic / Perivascular tumors :	
Glomus Tumor	02
Smooth muscle tumors :	
Leiomyoma	02
Skeletal muscle tumors :	
Rhabdomyoma	00
Tumors of uncertain differentiation	00

Table 5: Frequency of various malignant soft tissue tumors

Adipocytic tumor	00
Fibroblastic / Myofibroblastic tumors	00
So called fibrohistiocytic tumors	
MFH	01
GCT of tendon sheath	01
Smooth muscles	
Leiomyosarcoma	01
Skeletal muscles	
Rhabdomyosarcoma	02
Tumors of uncertain differentiation	
Synovial sarcoma	02
Undifferentiated pleomorphic sarcoma	01

DISCUSSION

Soft tissue tumors though a common occurrence, yet the literature available is limited. Histopathological division into benign and malignant cases is important in order to decrease the morbidity associated with the malignant counterparts.

According to study done by William and Strong [7], the incidence of various soft tissue lesions vary amongst different age groups. For example lesions associated with familial syndromes are more amongst children or early adulthood. As per the study conducted by Geer *et al* [8], the age of patients ranged from 16 to 88 years and male to female ratio was 1.3:1. In our study the ages varied from 10 to 70 years most common being (30-50) years of age. The Male to Female ratio was found to be 1.27. This higher incidence in males can be due to both genetics, environmental factors or simply due to the fact that male patients more frequently and comfortably visit the hospitals and female patients generally avoid hospital visits.

In a study conducted by Lawrence *et al* [9] in over 5800 patients, the most common presenting symptom was a swelling, followed by pain due to swelling. In our study most common complaint was swelling and only 18 patients complained of pain.

According to Jain P *et al* [1], most common benign tumor was Lipoma (50.27%) followed by vascular tumors in (20%) of the cases. In our study the most common were the adipocytic lineage tumors in (66.3%) and vascular tumors in 8.6%. The two variants of Lipoma I.e. Fibrolipoma characterized by fibroblast proliferation and collagen deposition seen along with mature adipose tissue. Spindle cell lipoma can be seen

as spindle cell proliferation along with adipose tissue. The most common subcutaneous soft-tissue tumours were found to be lipomas, with an annual incidence of around one per 1,000 persons [10]. According to study conducted by Luba MC [11], most common were the Lipomas which are usually solitary, less than 5cm and painless unless compressed by a nerve.

FNAC has been proven to be a highly sensitive technique and used as a primary screening mainly to differentiate benign and malignant lesion [12]. But Histopathology definitely comes to rescue when it comes to give a definitive diagnosis and also to determine the particular subtype of lineage affected. The excision repair of benign lesion is sufficient. With few exceptions such as intramuscular hemangioma which requires wide excision in addition similar to sarcoma [4].

Immunohistochemistry adds to the potential of histopathology in a confirmed and confident diagnosis. Various markers such as Cytokeratin for epitheloid sarcoma, myogenin for skeletal tumors, CD34 and CD31 for vascular tumors, CD99 for Ewings sarcoma and many others [13].

CONCLUSION

Histopathology has proven its efficacy in resolving a surgeons doubt regarding any soft tissue swelling and its use along with clinical and radiological findings have helped them to decide the treatment modality and the prognosis associated with it. The recent advances such as immunohistochemistry, electron microscopy and special stains have opened doors to a wide horizon of scope in diagnosis, treatment modalities and research purposes in near future.

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