



TO ASSESS THE HISTOPATHOLOGICAL ACCURACY OF TISSUE OBTAINED BY TRU CUT NEEDLE IN CORRELATION WITH OPEN BIOPSY OF SOFT TISSUE TUMOR.

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ABSTRACT **Introduction:** Biopsy is a surgical procedure to obtain tissue from a living organism for its microscopic examination, usually to perform diagnosis. Soft tissue includes skin, fat muscle and tendons that surround connect and support other tissue or organs. Soft tissue biopsies require little time or involvement from the patient. The main objective of this study was to assess the histopathological accuracy of tissue obtained by tru cut needle in correlation with open biopsy of soft tissue tumor.

Method: Total number of patients included in this study was 43 who either attended outpatient department or were admitted in the surgical wards as well as cancer wards of associated hospital of Medical college, Jagdalpur during the period from 2018 -2019. The study was conducted for a period of one year with a presenting complaint of tumor. Patients from 11 to 90 years of age group were included in this study. Informed consent was taken from the patients who were included in the study.

Result: In this study maximum number of the patients was between 31 – 40 years age group and minimum number of patients was in 81 –90 age group. Both the sex was included. There were 24 males and 19 females. Tru cut biopsy report is more accurate than fine needle aspiration biopsy. Diagnosis of malignant lesions and specific for sarcoma is more accurate by Tru cut biopsy.

Conclusion: Tru cut biopsy is a reliable method for histopathological examination of soft tissue tumors. It is accurate, simple, and less expensive and causes minimum trauma to the tissues.

KEYWORDS : Soft tissue tumor, Tru cut biopsy, Open biopsy, Histopathology.

INTRODUCTION:

Myxofibrosarcoma is one of the most frequent soft tissue tumors in elderly patients, mostly arising in the extremities. Grade I lesions are only locally aggressive whereas grade II and grade III lesions have metastatic potential. The differential diagnosis contains several other (benign) myxoid soft tissue tumors. A number of sarcomas are characterized by specific cytogenetic aberrations, giving not only insight in their biological pathways; they also serve as molecular markers in difficult diagnoses.¹

The soft hemorrhagic lesions are highly vascular and hemorrhage is a prominent clinical and histological feature (3). Fibrous inflammatory hyperplasias may occur on any surface of the oral mucous membrane as either pedunculated or sessile growth. On the gingiva, a similar lesion is often referred to as an epulis, that is, a growth on the gum. The majority remain small and lesions more than 1 cm in diameter is rare on the cheeks, tongue, and floor of the mouth possibly because masticatory trauma restricts their size through necrosis and ulceration.²

The different procedures such as fine needle aspiration (FNA), core needle biopsy (CNB) or open biopsy are all associated with specific advantages and disadvantages. The objective of all these biopsy techniques is to gain a representative tissue sample with minimal trauma, considering the correct surgical approach for a later resection to facilitate limb-sparing procedures. Hereby, accurate preoperative planning based on the diagnostic findings is the crucial and most demanding part.³

fine-needle aspiration biopsy (FNAB) is a valuable diagnostic tool for locally recurrent and metastatic sarcomas, the use of FNAB for the primary diagnosis of sarcoma, omitting core needle or traditional open incisional biopsies, remains poorly understood and controversial. Recently, the Association of Directors of Anatomic and Surgical Pathology (ADASP) published “guidelines” regarding the procedure. However, many of the conclusions drawn by the panel seem vague and unsupported by references. For example, the authors report that regarding FNAB, “Precise typing and grading is often not possible...” and the “morphologic heterogeneity of soft tissue tumors renders them susceptible to misdiagnosis by this technique⁴

The main thrust for development of a Trucut needle for use with EUS (endoscopic ultrasound) stems from the inability to determine from cytology alone the biological behavior and architectural features of tumor. Also, the ability to obtain adequate biopsy specimens may reduce the need for an on-site cytopathologist or cytotechnician, the number of passes, and the time necessary to obtain adequate tissue specimens.⁵

METHOD:

The present study comprises of 43 patients who either attended outpatient department or were admitted in the surgical wards as well as cancer wards of associated hospital of Medical college, Jagdalpur during the period from 2018 -2019 for a period of one year with a presenting complaint of tumor.

All the cases were examined in detail clinically detailed local, systemic and general examination in each case and findings are recorded as per proforma enclosed.

History includes name, age, sex, occupation, socioeconomic status, date of admission, and address. Clinical diagnosis was made on the basis of history and physical findings.

Biopsy by tru cut needle: Biopsy site is chosen so that it can be excised as part of definitive procedure and by examining the tumor.

Fine needle aspiration biopsy: All the soft tissue tumors have been aspirated with the help of 22 gauge needle 0.6 mm of diameter.

Informed consent was taken from all the patients who were included in this study.

Inclusion criteria: All the patients from age group 11 to 81 years were included in this study.

Exclusion criteria: Patients not willing to participate in the study.

Statistical analysis: Data compiled in MS excel and descriptive data are presented in the form of frequencies and percentage.

RESULT:

Table 1: Age Groups of the Patient Studied.

Age groups	Number of Cases	Percentage
11 -20	04	9.30
21 -30	10	23.25
31 -40	12	27.90
41 -50	06	13.95
51 -60	04	9.30
61 -70	03	6.98
71 -80	03	6.98
81 -90	01	2.32
Total	43	100

In this study maximum number of the patients was between 31 – 40

years age group and minimum number of patients was in 81 –90 age group.

Table 2: Showing Sex Distribution.

Sex	No of Cases	Percentage
Male	24	55.81%
Female	19	44.18%
Total	43	100.00

In this study patients of both the sex were included. There were 24 males and 19 females.

Table 3: Types of tumors as diagnosed by Tru cut biopsy.

Types of tumor	No of cases
Osteosarcoma	24
Chondrosarcoma	8
Giant cell tumor	6
Ewing sarcoma	2
Chondromyxoid sarcoma	1
Plasmacytoma	1
Other types	1

Tumors diagnosed by tru cut biopsy: 24 cases were of osteosarcoma, 8 cases of chondrosarcoma, 6 cases of giant cell tumour and 2 cases of Ewing sarcoma.

Table 4: Showing Comparison of Accuracy of Tru cut Biopsy and Fine Needle Aspiration Biopsy.

Technique	Accuracy for Sarcoma	Accuracy for malignant lesion	Accuracy for Benign lesion	Overall Accuracy	False positive	False Negative
FNAB	71.00%	80.64%	100%	86.04%	0	13.96%
Tru cut Biopsy	93.55%	96.77%	100%	97.68%	0	2.32%

A comparative study of pathological diagnosis of Tru cut biopsy and fine needle aspiration biopsy shows that tru cut biopsy report is more accurate than fine needle aspiration biopsy. Diagnosis of malignant lesions and specific for sarcoma is more accurate by Tru cut biopsy.

DISCUSSION:

soft-tissue sarcomas (STS) are a heterogeneous group of rare malignant tumor's arising from soft tissues and account for approximately 1% of all cancers. The incidence in England and Wales is 1.7 per 100 000 men and 1.4 per 100 000 women giving approximately 1000 to 1500 new cases per year. 1 In the USA, there are approximately 7000 new cases per year.2 When first seen, between 10% and 23% of patients will have metastases, the lung being the most common site with one-third of secondary tumours. Deposits in bone, liver, and brain comprise about 40%; the others are found in the regional lymph nodes, retro peritoneum and soft tissues.⁶

Costa et al reported in their series of 163 cases, distribution of tumour was in the extremities 103 cases 64% and head, neck trunk and retro peritoneum was 60 cases 36%.⁷

Kissin et al reported in their series of 50 cases distribution of soft tissue tumour were in the limbs 80%, head and neck 16% and retro peritoneum 4%.⁸

Saxena and Mehrotra reported in their series of 100 cases of soft tissue sarcoma the peak incidence of these tumours was encountered in 4th decade.⁹

Martin and Ellis reported that biopsy by aspiration has, few if any disadvantages to the patient from surgical stand point. Interpretation of histologic picture requires both an experienced and sympathetic pathologist, undoubtedly, larger specimen uniformly fixed and stained offer more satisfactory material upon which to render a definitive opinion but such a preparation can too often be obtained only at considerable disadvantage to the patient or too late to be of any particular value in outlining treatment. They had reported only 60 percent sensitivity by aspiration biopsy in the series of 64 cases.¹⁰

CONCLUSION:

Trucut biopsy is a reliable method for histopathological examination of soft tissue tumors. It is accurate, simple, and less expensive and

causes minimum trauma to the tissues. It decreases the metastasis risk of malignant lesions during the procedure. The adequacy of trucut biopsy is mainly influenced by patient type, tumor consistency, site of biopsy and approach. We conclude that Trucut biopsy detects more carcinomas. It can therefore be used as an alternative to open biopsy.

REFERENCES:

- 1) Stefan M Willems, Maria Debiec- Rychter. Local recurrence of myxofibrosarcoma is associated with increase in tumour grade and cytogenetic aberrations, suggesting a multistep tumour progression model. *Modern*.2006; volume 19, p407–416
- 2) Maryam Assadat Hashemi Pour, M Rad, a Mojtahedi. A Survey of Soft Tissue Tumor-Like Lesions of Oral Cavity: A Clinic pathological Study. *Iranian Journal of Pathology* (2008)3 (2):p81 -87.
- 3) Florian Pohl, Chlodwig Kirchhoff et al. Percutaneous core needle biopsy versus open biopsy in diagnostics of bone and soft tissue sarcoma: a retrospective study. *European*.2012; volume 17, Article number: 29.
- 4) Scott E. Kilpatrick, MD, James O. Cappellari, MD, Gary D. Bos, MD, Stuart H. Gold, MD. Is Fine-Needle Aspiration Biopsy a Practical Alternative to Open Biopsy for the Primary Diagnosis of Sarcoma? Experience with 140 Patients. *American Journal of Clinical Pathology*, 2001; Volume 115(1); p 59–68.
- 5) S.Varadarajulu, M. Fraig et al. Comparison of EUS-Guided 19-Gauge Trucut Needle Biopsy with EUS-Guided Fine-Needle Aspiration. *Endoscopy* 2004; 36(5): p397–401.
- 6) J. D. Lucas, M. J. Doherty, J. C. H. Wong, J. B. Bingham. Evaluation of fluorodeoxyglucose positron emission tomography in the management of soft-tissue sarcomas. *J Bone Joint Surg [Br]* 1998; 80-B: p441–47.
- 7) Costa J et al. The grading of soft tissue sarcomas, result of clinicohistopathologic correlation in series of 163 cases. *Cancer*.1984; 53:p530–41.
- 8) Kissin NV et al. Value of Tru cut biopsy in the diagnosis of soft tissue tumours. *Br. J. Surg.*1986; 73:p742–44.
- 9) Saxenas, Mehrotra ML; Host tissue response in soft tissue sarcomas. *Ind.J. Pathol. Microbiol.*1987; 30:p97–103.
- 10) Martin HE. Ellis EB; Biopsy by needle puncture and aspiration. *Ann. J.Surg.* 1930; 9:p507.