

# CLINICOPATHOLOGICAL CRITERIA AND SURGICAL OPTIONS FOR PATIENTS WITH OPERABLE EXTREMITIES SOFT TISSUE SARCOMA

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## Introduction

Heterogenous group of tumors like Soft Tissue Sarcoma, in all pediatric and adult malignancies make around 12% and 1% respectively. As per the Egyptian National Population-Based Cancer Registry Program in the year 2008-2011, 1.47% of all cases were STSs. Extremities being the ones frequently affected, they make around 59% of all sarcomas. The median age of onset is from 50-55 years with no ethnic/race predisposition. Soft Tissue Sarcoma in comparison to other tumors has got its own unique features that up until today has made the understanding of this disease quite unclear and these are:- 1) The rarity of the disease. 2) The numerous histopathological subtypes. 3) Complex biological behavior. 4) Anatomical sites involvement

## Aim of the work

The aim of the work was to identify the pathological subtypes, criteria, and surgical options adopted for managing operable soft tissue sarcoma of the extremities.

## Methods

Immediately after obtaining a consent from the ethical committee of Alexandria University Faculty of medicine, the patients' clinical details, pathological pattern of the disease and management modalities were obtained from the patients' files. All the patients in the study had operable soft tissue sarcoma and they underwent surgical interventions.

## Results

Surgery type (limb sparing or amputation) in relation to the different types of parameters like gender, age, limb involved, site, histological subtype, tumor size, stage, follow-up and outcome results were found not to be statistically significant. A univariate analysis on the parameters affecting the type of surgery has showed that a combination of chemotherapy and radiotherapy and the stage of the disease significantly affected the type of surgery. (univariate P value of 0.023 and 0.039 respectively).

Table (1): Relation between Surgery types with different parameters

	Surgery types				c2	p
	Limb sparing (n =54)		Amputation (n = 7)			
	No.	%	No.	%		
Gender					0.030	<sup>FE</sup> p= 1.000
Male	29	53.7	4	57.1		
Female	25	46.3	3	42.9		
Age (years)					1.433	<sup>MC</sup> p= 0.578
20 – ≤40	24	44.4	5	71.4		
40 – ≤60	25	46.3	2	28.6		
> 60	5	9.3	0	0.0		
Limb involved					0.064	<sup>FE</sup> p= 1.000
Lower limb	36	66.7	5	71.4		
Upper limb	18	33.3	2	28.6		
Site					7.317	<sup>MC</sup> p= 0.114
Thigh	26	48.1	1	14.3		
Leg	7	13.0	4	57.1		
Gluteal	3	5.6	0	0.0		
Arm	9	16.7	1	14.3		
Forearm	6	11.1	1	14.3		
Shoulder	3	5.6	0	0.0		
Histologic type					3.781	<sup>MC</sup> p= 0.376
Liposarcoma	11	20.4	0	0.0		
Others	13	24.1	2	28.6		
synovial sarcoma	7	13.0	2	28.6		
MFH (UPS)	20	37.0	2	28.6		
MPNST	3	5.6	1	14.3		
Tumor size					3.975	<sup>MC</sup> p= 0.203
< 5cm	14	25.9	0	0.0		
>5 – < 10 cm	25	46.3	3	42.9		
> 10– < 15 cm	6	11.1	1	14.3		
> 15 cm	9	16.7	3	42.9		
Stage					4.605	<sup>MC</sup> p= 0.247
IA	6	11.1	0	0.0		
IB	10	18.5	0	0.0		
II	8	14.8	0	0.0		
IIIA	19	35.2	3	42.9		
IIIB	11	20.4	4	57.1		
Follow-up period (months)					2.491	<sup>MC</sup> p=0.335
<12 month	17	31.5	1	14.3		
12 - 24 month	10	18.5	0	0.0		
> 24	27	50.0	6	85.7		
Outcome					0.726	<sup>FE</sup> p= 0.661
Survived	38	70.4	6	85.7		
Lost to follow-up	16	29.6	1	14.3		

Table (2): Univariate and multivariate analysis for the parameters affecting surgery type (n=61)

	Univariate		#Multivariate	
	OR(95C.I)	p	OR(95C.I)	p
Gender	0.870 (0.177– 4.265)	0.864		
Age	0.693 (0.328–1.463)	0.336		
Family history	2x10 <sup>8</sup> (0.0)	1.000		
Limb involved	0.800 (0.141–4.534)	0.801		
Histologic type				
Lip sarcoma	1.000	0.864		
Synovial sarcoma	1.857 (0.213-16.179)	0.575		
MPNST	0.650(0.081-5.206)	0.685		
MFH	2.167 (0.144-32.528)	0.576		
Others	0.999(0.0-0.0)	0.999		
Tumor size	2.101 (0.966–4.570)	0.061		
Grade				
Grade 1 @`	–	–		
Grade 2	1x10 <sup>8</sup> (0.0)	0.999		
Grade 3	3x10 <sup>8</sup> (0.0)	0.998		
Neoadjuvant				
Not given @	–	–		0.124
Chemotherapy	2.333 (0.216–25.245)	0.486	1.470(0.118-18.258)	0.764
Chemo +Radio	0.104 (0.015–0.735)	0.023*	0.166(0.022-1.246)	0.081
Stage	3.719(1.066–12.975)	0.039*	3.020 (0.690-13.211)	0.142
Outcome				
Survived@	–	–		
Lost to follow-up	0.396 (0.044–3.559)	0.408		

## Conclusion

The commonest extremity affected was the lower extremity (62.7%), thigh being the commonest site (44.3) % and Undifferentiated Pleomorphic Sarcoma was the commonest pathological subtype (36.1) %. Surgery is the ultimate treatment of a localized soft tissue sarcoma and a limb sparing procedure should always be considered, unless the tumor is not amenable to a limb salvaging technique. Combined neoadjuvant chemo-radiotherapy downstages the tumor hence reducing the chances of a patient undergoing amputation. Staging of the disease is also important in determining the type of surgical intervention the patient will undergo.