

Smooth Muscle Tumor of Uncertain Malignant Potential (STUMP)

=ABSTRACT=

A Clinical-Pathological Study of Uterine Smooth Muscle Tumor of
Uncertain Malignant Potential.

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Objective : To evaluate clinical-pathological aspects of smooth muscle tumor of uncertain malignant potential (STUMP), comparing those of leiomyosarcomas and to reclassify them according to the revised classification of smooth muscle tumor, and to investigate the clinical value of new classification.

Methods : A retrospective review of clinical and pathological characteristics of 11 cases of STUMP and 7 cases of leiomyosarcoma was done at department of obstetrics and gynecology of Ajou university hospital from 1995 to 1999. They were reclassified according to the revised classification by Kempson and Hendrickson in 1994.

Results : Patients' age, parity, status of menopause, history of hormonal use were not significantly different. Vaginal bleeding was most common clinical symptom in both groups(STUMP 55%, leiomyosarcoma 63%) and sarcomatous change was suspected in 1 case of STUMPs and 2 cases of leiomyosarcomas with preoperative transvaginal sonographic examination. Two cases of STUMP were treated with myomectomy only and hysterectomy with or without salpingo-oophorectomy was performed in all cases of leiomyosarcomas and 9 cases of 11 STUMPs. No adjuvant therapy was done and none recurred. Ten cases of STUMP and four cases of leiomyosarcoma were reclassified into leiomyoma with increased mitotic index, one STUMP into atypical leiomyoma, and three leiomyosarcomas remained in the same category by revised classification.

Conclusion : Such tumors reclassified into leiomyoma with increased mitotic index showed benign clinical course and the results of this study support new classification. However, atypical leiomyoma with low risk recurrence and smooth muscle tumor with low malignant potential still have possibility of malignant clinical course.

Key word : STUMP(Smooth muscle tumor of uncertain malignant potential), Leiomyosarcoma, Leiomyoma with increased mitotic index

(Uterine smooth muscle tumor)	(malignant potential)	1966 Taylor
,	(le-	(mitotic activity)
iomysarcoma) 800:1	Norris ¹	가 가
,	,	(mitotic activity level)
가	가	.
가	가	.

: 2000. 6. 28.

figure/10 high power field(MF/10HPF)
 5-9MF/10HPF
 가
 (hypercellularity), (nuclear atypia),
 (tumor cell necrosis),
 (abnormal mitotic figure)
 . 1973 Kempson ²

“Smooth muscle tumor of uncertain malignant potential”(STUMP) 가

STUMP
 . 1994 Kempson
 Hendrickson³
 STUMP
 . 1995 1999
 STUMP 11 7
 , 1994

1995 1 1999 12 5
 STUMP 11
 21 (Adenosarcoma 6 , Endometrial stromal sarcoma, low grade 4 , Leiomyosarcoma 7 , Unclassified sarcoma 4) (leiomyosarcoma) 7
 18

. STUMP 11 (mitotic index)가 가 (intravenous leiomyomatosis) 2 가 7

FIGO stage I .
 1989 Kempson Hendrickson⁴
 (coagulative necrosis)

1994
 3-6

1. , ,
 STUMP 43.2 (32 -50)
 41.4 (29 -55)
 STUMP 2 ,
 3
 2 .
 가 1

(Table 1)

Table 1. Characteristics and clinical manifestations of patients

	STUMP	Leiomyosarcoma
Number of patients	11	7
Mean age(yrs)	43.2(32-50)	41.4 (29-55)
Median parity	2	3
Post menopause	0	2
Hormonal use	0	0
Pregnancy association	0	1
Mean tumor size(cm)	6.1(3-14)	5.6(3-8)
IV leiomyomatosis*	2	0
MF/ 10HPF**	7(3-11)	13 (5-20)
Nuclear atypia	none - mild	mild - marked
Coagulative necrosis	1	3
Mean follow up(Mo)	21.7(2-54)	18.7(2-49)
Follow up loss	3	0
Vaginal bleeding	6(55%)	5(63%)
Low abdominal pain	3(27%)	2(25%)
Palpable abdominal mass	1(9%)	0(0%)
Dysmenorrhea	1(9%)	1(12%)

IV leiomyomatosis*: Intravenous leiomyomatosis
 MF/ 10HPF**: Mitotic figure per 10 high power field

2. 55%, 63% 가
 ,(Table 1)

가
 STUMP 1 ,
 2 1 4
 2
 ,(Table 2, Table 3)

3.
 STUMP 11 10
 11 8

Table 2. Smooth muscle tumor of uncertain malignant potential.

No	Age	Preop. Sonography	Surgery	Tumor Size(cm)	MF/10 HPF	Atypia	Coag. Necrosis	Status at F/U	F/U Duration (Mo.)	Reclassification.
1	48	Myoma	TAH BSO	3	5	(+)	(-)	NED	34	Leiomyoma with increased mytotic index
2	41	Myoma/Sar. RI 0.37-0.4	TAH USO	10	7	(+)	(-)	NED	20	Leiomyoma with increased mytotic index
3	50	None	TAH BSO	8	6	(+)	(-)	NED	54	Leiomyoma with increased mytotic index
4	44	Huge Myoma	TAH USO	14	8	(+)	(-)	NED	20	Leiomyoma with increased mytotic index
5	40	Huge Myoma	myomectomy/TAH	8	9	focal(++)	(-)	NED	4	Atypical leiomyoma
6	40	Myoma	TAH USO	5	8	(+)	(-)	NED	33	Leiomyoma with increased mytotic index
7	47	Myoma	TAH USO	3	8	(+)	(-)	NED	2	Leiomyoma with increased mytotic index
8*	46	Cervical Myoma	myomectomy	4	4	(+)	(-)	UKN	0	Leiomyoma with increased mytotic index
9	32	Myoma	myomectomy	3	10	(+)	(-)	UKN	0	Leiomyoma with increased mytotic index
10	41	Myoma	TAH	3	9	(+)	(-)	UKN	0	Leiomyoma with increased mytotic index
11*	47	R/O Adenomyosis	TAH BSO	7	3	not cited	(-)	NED	7	Leiomyoma with increased mytotic index

Sar : Sarcomatous change.

TAH : Total abdominal hysterectomy.

BSO : Bilateral salpingo-oophorectomy.

MF/10HPF : Mitotic figure per ten high power field.

F/U : Follow up.

UKN : Unkonwn

RI : Resistance index.

USO : Unilateral salpingo-oophorectomy.

NED : No evidence of disease

Coag. Necrosis : Coagulative necrosis.

* : Intravenous leiomyomatosis

Table 3. Leiomyosarcoma.

No	Age	Preop. Sonography	Surgery	Tumor Size(cm)	MF/10 HPF	Atypia	Coag. Necrosis	Status at F/U	F/U Duration (Mo.)	Reclassification.
1	40	Myoma. R/O Endometrial polyp	TAH	8	17	(+)	(-)	NED	2	Leiomyoma with increased mytotic index
2	43	Myoma.	TAH	4	13	(+)	(-)	NED	49	Leiomyoma with increased mytotic index
3	55	Peduncleated Myoma	TAH BSO	7	14	(+)	(-)	NED	3	Leiomyoma with increased mytotic index
4	50	No focal lesion	Myomec/EAH BSO	4	20	(+)	(-)	NED	27	Leiomyoma with increased mytotic index
5	33	Myoma/Sar. RI 0.26-0.35	Myomec/TAH BSO	6	16	(++)	(-)	NED	28	Leiomyosarcoma
6	40	Myoma/ Sar. RI 0.32-0.47	TAH USO	6	5	(++)	(+)	NED	2	Leiomyosarcoma
7	29	Myoma	Myomec/TAH BSO	5	6	(++)	(+)	NED	20	Leiomyosarcoma

Sar : Sarcomatous change.

TAH : Total abdominal hysterectomy.

BSO : Bilateral salpingo-oophorectomy.

Myomec : Myomectomy.

MF/10HPF : Mitotic figure per ten high power field.

F/U : Follow up.

RI : Resistance index.

USO : Unilateral salpingo-oophorectomy.

EAH : Extrafascial abdominal hysterectomy.

NED : No evidence of disease

Coag. Necrosis : Coagulative necrosis.

STUMP 1 (focal moderate degree) (mild)

STUMP 2 (diffuse moderate atypia)

STUMP 2 (diffuse moderate to severe atypia)

STUMP 10 (leiomyoma with increased mitotic index)

1994 Kempson Hendrickson

6.1cm(3-14cm), 5.6cm(3-8cm)

13MF/10HPF, 7MF/10HPF

3
 , STUMP (Resistance index: RI)
 0.4 , sensitivity 90%, specificity
 5 (atypical) 99.8% . 1997 Hata ¹⁵
 leiomyoma) (Table 2, Table 3) 가 가 ,
 5. Peak systolic velocity(PSV) 41.0cm/sec
 18 15 80% .
 20 (2-54) , STUMP 1 0.37-0.4 ,
 3 2 0.26-0.35, 0.32-0.47
 . 2
 .(Table 2, Table 3)
 STUMP
 가
 1859 Meyer⁵ STUMP
 가 가 Salazar⁶ Echt⁷ 3% 가
 , Novak⁸ 2-6% , Kostald ⁹ STUMP 가
 10 0.5 . 5-15MF/ 10HPF 1988 Perrone ¹⁶
 1970 Ober Kempson 10 8
 Bari¹⁰ 가 Tucker¹¹ 1) , 1994 Peters III
 , Clifford Tucker¹¹ 3) , 2) , 1
 3가 STUMP 8 2
 가 , 가 , 1
 STUMP 7
 10HPF 가 10MF/ 가
 가 5-9MF/ 10HPF 가 가
 Kempson ² 가 , 1973
 STUMP (borderline) 26.7% 15 1 9
 50-60 가
 41.4 ¹² 가
 , 43.2 STUMP 가
 가 가 1 Cantin ¹³
 1994 Kurjak ¹⁴ 가 , 1 (Stage I)
 (color doppler)가 18 가

가 가 15

STUMP 가 , STUMP 가

가 ,

1994

Kempson Hendrickson³ problematic smooth muscle tumor 213 가

가 ,

4

가

uncertain malignant potential 가 가 가

(leiomyoma with increased mitotic index), 가

가 (atypical leiomyoma with low risk recurrence),

(smooth muscle tumor with of low malignant potential),

가

18 STUMP 10

4 가 가 가

1989 O'Conner²⁸ (significant cytologic atypia)가

5-9MF/10HPF 73 가

mitotically active leiomyoma

1990 Prayson²⁹ 1996 Dgani

³⁰ mitotically active leiomyoma 15 20

가 .

가 가

가 ,

가 가

가 ,³¹

가

^{32,33,34} 가

가

²⁹ 가

STUMP 10

1994 Kempson Hendrickson³ 가 가

가 가

가 가

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: Smooth muscle tumor of uncertain malignant potential(STUMP)

, 1994

: 1995 1999

7 STUMP 11

, 1994 Kempson

Hendrickson

: / / / 가 .가

(STUMP 54%, 62%),

STUMP 1 (9%), 2 (29%) . STUMP 2

18

. 18 STUMP 10 4 가 가 , STUMP

1 : STUMP 가 가 (leiomyoma with increased mitotic index)

가

(atypical leiomyoma with low risk recurrence) (smooth muscle tumor of low malignant potential) 가 , 가

: STUMP, , 가 가