

## The Interval between a Supracervical Hysterectomy and Trachelectomy. What Led to an Early or Late Trachelectomy?

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### ABSTRACT

**Background:** Women who underwent a supracervical hysterectomy were required to return to the operating room at a certain time for the removal of the cervical stump.

**Patients and Methods:** At Cairo University, National Cancer Institute (NCI) Hospital, all women who underwent trachelectomy after supracervical hysterectomy between 2010 and 2020 had their medical records examined.

**Results:** Over ten years, 34 trachelectomy operations were completed. The age of patients ranged between 42 years and 72 years with mean + SD were 55+7.5 The mean interval was 6 months, whereas the lowest and largest intervals were reported to be 2 months (0.2 year) and 156 months (13 years), respectively. Patients who were diagnosed with endometrial adenocarcinoma underwent trachelectomy before one year (15 out of 16, 94.11%) but only one patient (5.88%) underwent trachelectomy after one year. Recurrent vaginal bleeding was a more evident symptom among the patients who underwent trachelectomy before one year (54.5%) or after one year (91.7%). Except for one patient (p-value 0.001). Patients (17) who underwent trachelectomy before or at a time of 5 months didn't complain of urinary symptoms except for one patient, 5 patients (29.5%) of those patients had sexual symptoms. Recurrent vaginal bleeding was a more evident symptom among the patients who underwent trachelectomy before one year (54.5%) or after one year (91.7%). Except for one patient (p-value 0.001), none of the patients (17) who underwent trachelectomy before or at a time of 5 months complained of urinary symptoms. while 5 patients (29.5%) of those patients had dyspareunia.

**Conclusions:** The mean interval was 6 months, whereas the lowest and largest intervals were reported to be 2 months (0.2 year) and 156 months (13 years).

**Keywords:** Cervical stump, Trachelectomy.

### INTRODUCTION

After a supracervical hysterectomy, the cervix is removed through cervical stump excision (trachelectomy). In women having hysterectomy for a variety of benign reasons, subtotal or supracervical hysterectomy is an alternative to total hysterectomy. Proponents of this procedure believed that removing the entire cervix might reduce sexual response, pelvic support, and urine function while lengthening surgery and increasing complications<sup>(1)</sup>.

The retention of the cervix during hysterectomy was not found to have any advantages in later trials. Additionally, some women's prolonged complaints, particularly pelvic discomfort and vaginal bleeding, led to the later forceful excision of the cervical stump. Between 2% and almost 23% of benign gynecologic diseases have been observed to require trachelectomy after supracervical hysterectomy SCH<sup>(2)</sup>.

With a few rare cases, the subtotal hysterectomy is no longer recommended for the treatment of female genital illness. The cervical stump that is still there has numerous possible hazards but very few benefits, which has been known for a very long time. About half of individuals who had their cervical stumps removed had malignant alterations in the cervical stump<sup>(3)</sup>.

In 5% to 22% of patients having a supracervical hysterectomy, retention issues with the cervical stump have been documented. These issues include persistent vaginal bleeding, prolapse, cervical dysplasia or cancer, as well as the less common pathological

surprise of cervical or endometrial cancer that was not discovered preoperatively. Up to 25% of women will experience new cervical symptoms after a supracervical hysterectomy<sup>(4)</sup>.

According to the American College of Obstetrics and Gynaecology, 1.5% of patients needed a second procedure to remove the cervix less than three months after their initial subtotal hysterectomy, and 23% of women needed to go back in for the removal of the cervical stump; a mean of 14 months after their initial procedure<sup>(5)</sup>.

The study was conducted to ascertain the reasons why patients who had supracervical hysterectomy procedures returned to the operating room to have "Trachelectomy" procedures.

### PATIENTS AND METHODS

At Cairo University's National Cancer Institute Hospital, all women who underwent trachelectomy after supracervical hysterectomy between January 2010 to October 2020 had their records retrospectively reviewed.

Due to a pathological surprise in the final pathological report as endometrial cervical cancer and/or aberrant cervical stump bleeding, 34 patients with persistent cervical stumps following supracervical hysterectomy were included.

In order to achieve the goals of the study, a predetermined sheet was employed. To gather all information available, all patient files were examined as follows: Name of the patient, patient's age, being in

menopause, symptoms before to complete surgery, after-surgery persistent symptoms, period between surgery and recurrence of symptoms, symptoms of the bladder and sex following supracervical hysterectomy, pathology of trachelectomy surgery and pathology of partial hysterectomy surgery.

**Ethical approval:**

The Ethics Committee of Cairo University's Faculty of Medicine granted the study approval. All participants signed, at the time of admission, an informing consent to use their data for medical research. The Helsinki Declaration was followed throughout the study's conduct.

**Statistical methods**

IBM SPSS, version 24, was used to analyse the data. While qualitative data were expressed as number and percentage, numerical data were described as mean, standard deviation, median, and range. Chi-square and independent t-tests were used for the multivariate analysis, and each test had a two-sided outcome. P values < 0.05 were regarded as significant.

**RESULTS**

Thirty-four patients were admitted to the Gynecological Surgical Department for the completion of hysterectomy. The age of patients ranged between 42 years and 72 years with mean ± SD were 55±7.5 (Table 1).

**Table (1): Age distribution and interval time for the 34 patients included**

	Mean	SD	Media n	Min	Maxi
Age (yrs.)	55.8	7.5	55	42	72
Interval Time (mo.)	32.2	48.7	6	2	156
Interval time (yrs.)	2.7	4.1	0.5	0.2	13

Min: Minimum, Max: Maximum.

Yrs:years, mo:months interval time is the time between the supracervical hysterectomy procedure and the trachelectomy procedure.

The patients were classified according to the interval time between the supracervical hysterectomy and the trachelectomy into two groups as shown in table 2. Group 1: "lag G2"; interval time from supracervical hysterectomy to trachelectomy time is less than one year or more than one year or equal to one year. Group

2: "lag G"; interval time from supracervical hysterectomy to trachelectomy time is close to the median period which was 6 months.

**Table (2): Classification of patients according to interval time**

Groups	Interval time	No	%
Time_Lag_G2	<1 yr.	22	64.7%
	≥1 yr.	12	35.3%
Time_Lag_G	≤5 m	17	50.0%
	>5 m	17	50.0%

Seventeen patients underwent trachelectomy at 5 months or less with ages ranging between 45 years and 71 years with mean+SD of 55+7.5, while 17 patients underwent the second surgery after 5 months with ages ranging between 42 years and 72 years with mean+SD of 56.5+8.0. (Table 3).

In group 1 "time lag 2"; twenty-two patients with ages ranged between 45 and 71 yrs. (54.5+6.7) underwent trachelectomy at a time less than a year.

In group 2 "lag time G"; all patients were diagnosed with cervical adenocarcinoma. cervical squamous cell carcinoma or uterine sarcoma underwent trachelectomy at the time of one year after the first surgery. 16 patients who were diagnosed with endometrial adenocarcinoma had undergone trachelectomy before one year(15 out of 16 patients 94.11%) but only one patient (5.88%) underwent trachelectomy after one year (P value 0.001), all cases diagnosed with cervical carcinoma had recurrent vaginal bleeding, meanwhile 50 % of patients diagnosed with endometrial carcinoma (8 out of 16 patients) or uterine sarcoma (1 out of 2 patients) had recurrent vaginal bleeding (Table 3).

The smallest and maximum intervals in months were reported to be 2 months (0.2 year) and 156 months (13 years), respectively, with 6 months being the mean.

Among patients who underwent trachelectomy at time less or equal to 5 months; 9 patients out of 17 patients (52.9%) had recurrent vaginal bleeding, meanwhile 12 patients out of 22 patients (54.5%) who underwent trachelectomy at time less than on year had recurrent vaginal bleeding. Recurrent vaginal bleeding was more evident among the patients who underwent trachelectomy before one year (54.5%) or after one year (11 out of 12 patients, 91.7%). Patients (17) who underwent trachelectomy before or at a time of 5 months didn't complain of urinary symptoms except for one patient while 5 patients (29.5%) of those patients had sexual symptoms (Table 3).

**Table (3): Multivariate analysis and classifications of groups of patients**

	Time_Lag_G			Time_Lag_G2		
	≤5 m (n=17)	>5 m (n=17)	p- value	<1y (n=22)	≥1yr (n=12)	p- value
<b>Age (years)</b>						
<b>Mean ±SD</b>	55.2±7.1	56.5±8.0	0.622	54.5±6.7	56.5±8.5	0.152
<b>Range</b>	45-71	42-72		45-71	42-72	
<b>Pathology of Previous Subtotal Hysterectomy</b>						
<b>Endometrial Adenocarcinoma</b>	12(75.0)	4(25.0)	NA	15(93.8)	1(6.3)	NA
<b>Cervical Adenocarcinoma</b>	3(100.0)	0		3(100.0)	0	
<b>Cervical Squamous Cell Carcinoma</b>	2(100.0)	0		2(100.0)	0	
<b>Uterine Stromal Sarcoma</b>	0	2(100.0)		2(100.0)	0	
<b>Endometrial Hyperplasia</b>	0	1(100.0)		0	1(100.0)	
<b>No Available Pathology</b>	0	3(100.0)		0	3(100.0)	
<b>Simple Endometrial Hyperplasia</b>	0	2(100.0)		0	2(100.0)	
<b>Uterine Adenomyosis</b>	0	1(100.0)		0	1(100.0)	
<b>Uterine Fibroid</b>	0	4(100.0)		0	4(100.0)	
<b>Pathology of Previous Subtotal Hysterectomy</b>						
<b>Endometrial Adenocarcinoma</b>	12(75.0)	4(25.0)	<b>&lt;0.001</b>	15(93.8)	1(6.3)	<b>&lt;0.001</b>
<b>Cervical (Adeno-Sq)</b>	5(100)	0		5(100)	0	
<b>Others</b>	0	13(100)		2(15.4)	11(84.6)	
<b>Urine Symptoms</b>						
<b>No</b>	16(72.7)	6(27.3)	<b>&lt;0.001</b>	20(90.9)	2(9.1)	<b>&lt;0.001</b>
<b>Yes</b>	1(8.3)	11(91.7)		2(16.7)	10(83.3)	
<b>Sexual Function</b>						
<b>Dyspareunia</b>	5(38.5)	8(61.5)	0.290	6(46.2)	7(53.8)	0.075
<b>Normal</b>	12(57.1)	9(42.9)		16(76.2)	5(23.8)	
<b>Recurrent Symptoms</b>						
<b>No Symptoms</b>	8(72.7)	3(27.3)	0.067	10(90.9)	1(9.1)	<b>0.027</b>
<b>Vaginal Bleeding</b>	9(39.1)	14(60.9)		12(52.2)	11(47.8)	

All patients who were diagnosed with uterine benign lesions in specimens of supracervical hysterectomy and patients who had no available pathology of hysterectomy underwent trachelectomy after one year of the first surgery. Patients who were diagnosed with benign lesions; one patient with adenomyosis, two patients with simple hyperplasia, and 3 patients with fibroids had recurrent vaginal bleeding.

Urinary symptoms were more evident in patients who underwent trachelectomy after one year of a supracervical hysterectomy where 10 patients out of the 12 patients (83.3%) had symptoms. On the contrary, patients who underwent trachelectomy one year after the first one (90.9%) had no urinary symptoms (p value 0.001) (Table 4).

Sexual or urogenital symptoms were not reduced post-subtotal hysterectomy. Following subtotal hysterectomies, 12 out of 34 patients (35.3%) developed urinary symptoms, including incontinence in 5 patients, frequent urination in 5 patients, dysuria in 1 patient, and urine leakage in 1 patient (8.3%). Dyspareunia affected 13 patients (38.2%).

**Table (4): Pathology of supracervical hysterectomy and its relation to recurrent symptoms**

		Recurrent Symptoms		
		No n=11 (%)	Bleeding n=23 (%)	p- value
<b>Pathology of previous subtotal hysterectomy</b>	Endometrial Adenocarcinoma	8 (50.0)	8 (50.0)	NA
	Cervical Adenocarcinoma	1 (33.3)	2 (66.7)	
	Cervical Squamous Cell Carcinoma	0	2 (100.0)	
	Endometrial Hyperplasia	0	1 (100.0)	
	No Available Pathology	0	3 (100.0)	
	Simple Endometrial Hyperplasia	0	2 (100.0)	
	Uterine Adenomyosis	0	1 (100.0)	
	Uterine Fibroid	1 (25.0)	3 (75.0)	
	Uterine Stromal Sarcoma	1 (50.0)	1 (50.0)	
	<b>Pathology of previous subtotal hysterectomy</b>	Cervical Adeno-carcinoma-Sqcc	1 (20.0)	
Endometrial Adenocarcinoma		8 (50.0)	8 (50.0)	
Others		2 (15.4)	11 (84.6)	
<b>Urinary Symptoms</b>	No	10 (45.5)	12 (54.5)	0.027
	Yes	1 (8.3)	11 (91.7)	
<b>Sexual Function</b>	Dyspareunia	2 (15.4)	11 (84.6)	0.096
	Normal	9 (42.9)	12 (57.1)	
<b>Complications</b>	No	9 (36.0)	16 (64.0)	0.449
	Yes	2 (22.2)	7 (77.8)	

**NOTE:** The left column in the table for were repeated for some statistical issues after collection of patients and classified as 3 categories as endometrial carcinoma , cervical carcinoma and others.

Classical bilateral pelvic lymphadenectomy was paired with trachelectomy to treat cancers in 21 patients with enlarged pelvic nodes and probable lymph node metastases (Table 5).

**Table (5): Concomitant procedures with trachelectomy**

Pelvic Lymphadenectomy	
No	13 (38.2)
Yes	21 (61.8)

**DISCUSSION**

In the current study, over ten years, 34 trachelectomy operations were completed. The patients ranged in age from 42 to 72, with a mean ± SD of 55 ± 7.5.

Seventeen patients underwent trachelectomy at 5 months or less with ages ranging between 45 years and 71 years with mean+SD of 55+7.5, while 17 patients underwent the second surgery after 5 months with ages ranging between 42 years and 72 years with mean+SD of 56.5+8.0. (Table 2).

The patients were classified according to the interval time between supracervical hysterectomy and the trachelectomy into two groups: Group 1: "lag G2"; interval time from supracervical hysterectomy to trachelectomy time was less than one year or more than one year or equal to one year. Group 2: "lag G"; interval time from supracervical hysterectomy to trachelectomy time was close to the median period which was 6 months.

In group 1 "time lag 2"; twenty-two patients with ages ranged between 45 and 71 yrs. (54.5±6.7) underwent trachelectomy at a time less than a year underwent trachelectomy after one year (Table 2). In group 2 "lag time G"; All patients were diagnosed with cervical adenocarcinoma, cervical squamous cell carcinoma or uterine sarcoma underwent trachelectomy at the time of one year after the first surgery. 16 patients (93.8%) who were diagnosed with endometrial adenocarcinoma had undergone trachelectomy before one year but only one patient (6.3%) with endometrial adenocarcinoma underwent second surgery after one year (p value<0.001). all cases diagnosed with cervical carcinoma had recurrent vaginal bleeding meanwhile 50 % of patients diagnosed with endometrial carcinoma (8 out of 16 patients) or uterine sarcoma (1 out of 2 patients) had recurrent vaginal bleeding.

Recurrent vaginal bleeding was a more evident symptom among the patients who underwent trachelectomy before one year (12 of 22 patients 54.5%) or after one year (11 out of 12 patients 91.7%).

Sexual or urogenital symptoms were not reduced post-subtotal hysterectomy. Following subtotal hysterectomies, 12 out of 34 patients (35.3%) developed urinary symptoms, including incontinence in 5 patients, frequent urination in 5 patients, dysuria in 1 patient, and urine leakage in 1 patient (8.3%). Dyspareunia affected 13 patients (38.2%).

The mean interval was 6 months, whereas the lowest and largest intervals were reported to be 2 months (0.2 year) and 156 months (13 years), respectively. All of the 11 patients who had benign uterine lesions had trachelectomy at least 5 months after their diagnosis. In other studies, within three months of a supracervical hysterectomy, up to 1.5% of patients have a trachelectomy <sup>(1,4,6)</sup>.

Some other studies found that when cervical cancer had grown in the retained cervical stump, the median period between supracervical hysterectomy and trachelectomy was 21 years.<sup>(7)</sup> In our analysis, the longest interval between two procedures was 13 years.

In our study, 61.8% of patients had bilateral pelvic lymphadenectomy in addition to trachelectomy. Pelvic lymphadenectomy (73.3%) and oophorectomy (66.6%) were the two most common concomitant operations with tracheostomy <sup>(8)</sup>.

Except for one patient (p-value 0.001), none of the patients (17) who underwent trachelectomy before or at a time of 5 months complained of urinary symptoms. However, 5 of those patients (29.5) % had sexual symptoms.

Intraoperative problems were not noted when previously completed subtotal hysterectomies for all study participants were reviewed to look for potential issues during surgery and to modify the decision to conduct an abdominal hysterectomy. In order to protect the bladder, ureter, and rectum and to maintain the cervix to avoid potential urinary and sexual issues following a hysterectomy, it was decided in the clinic to arrange a partial hysterectomy.

The majority of obstetricians conduct a subtotal hysterectomy in unskilled facilities based on menopausal bleeding symptoms without undertaking a prior pathological evaluation (dilation and curettage or round biopsy). A partial hysterectomy is frequently carried out during cervical excision to prevent injury to the ureter and bladder. Among instance, cervical carcinoma, which makes up about 2-9% of all cervical malignancies globally, is uncommon among women who have previously undergone partial hysterectomy <sup>(9)</sup>.

## CONCLUSION

Due to inadequate inspection and investigations of patients experiencing postmenopausal bleeding in unskilled institutions, a sizable proportion of patients who underwent a subtotal hysterectomy for an apparent benign disease needed trachelectomy within a few months. Because hysterectomy specimens have a pathological finding of uterine and cervical cancers, the lowest and biggest intervals were reported to be 2 months (0.2 year) and 156 months (13 years), respectively. The mean interval was 6 months.

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