

Effect of Phenolisation Dressing Technique on Healing Rate and Daily Living Activity among patient with Sacrococcygeal Pilonidal Sinus Disease

Islam.I.Ragab¹, Fatma Mohamed Elesawy², Mohamed Abdelshafy Mohamed³ & Mohammed H . Hossan⁴

¹. Assistant Professor of Adult Medical Surgical Nursing Department, Faculty of Nursing, South Valley University, Qena, Egypt.

². Lecturer of Adult Medical Surgical Nursing Department, Faculty of Nursing, South Valley University, Qena, Egypt.

³. Assistant professor of General Surgery, Faculty of Medicine, South Valley University, Qena, Egypt.

⁴. Medical Biochemistry Department, Faculty of Medicine, South Valley University, Qena, Egypt.

Abstract

Background: Sacrococcygeal pilonidal sinus disease (SPSD) is disorder mainly observance in the sacrococcygeal region, especially in young and middle-aged males. **Aim of the study:** evaluate effect of phenolisation dressing technique on healing rate and daily living activity among patient with sacrococcygeal pilonidal sinus disease. **Methods:** quasi-experimental study was conduct in general surgery department and outpatient clinic at Qena University Hospital. A coincident sample of 60 adult patients assigned clinically into two equal comparable group study and control. **The study tools; Tool 1:** Patient interview assessment questionnaire. **Tool 2:** Pre/post healing progression rate scale. **Tool 3:** pilonidal disease daily living activity questionnaire. **Results:** statistical significant difference between studied group in wound healing parameter include exudates color, amount, odor, pain and surrounding tissues post intervention with $p < 0.05$. Also statistical significant difference related daily living activity behaviors between studied group with $p < 0.05$. **Conclusion:** phenol dressing technique accelerates wound healing without any side effect it is safe, inexpensive to treat sacrococcygeal pilonidal sinus. **Recommendation:** additional successful clinical evidence is required to establish phenol dressing technique as if the generality effective alternative intervention for treating SPSD.

Keywords: Daily living activity, Healing rate, Phenolisation & Sacrococcygeal

Introduction:

Sacrococcygeal pilonidal sinus disease (SPSD) is a current disorder principally noting in the sacrococcygeal region, especially in young and middle-aged males because of their more hirsute nature (Beal et al, 2018). Risk factors involve adiposity, sedentary occupation life style, local irritation or trauma, poor body hygiene, excessive hairiness and perspiration (Browne & Carroll, 2019).

The incidence of this disease has been snitched as 4.6%, the male/female ratio is 3:1 at the age of 20–30. Iterating of SPSD is encountered in clinical practice; type I, it may not have any noticeable symptoms at first other than a small, dimple-like slip on the surface of the skin (Duman et al, 2019).

However, Type II, once the slip get infected, it will quickly develop into a cyst or abscess and trigger pain during sitting or standing, Type III, swelling of the cyst, reddened, sore skin around the area, pus or blood draining from the abscess with a foul odor. And type IV, hair protruding from the lesion, formation of more than one sinus tract or holes in the skin. Type V; engenders once recurrent following surgical treatment. It may causes serious chronic

complaints as micro-abscesses, chronic abscess, cellulitis and malignancy (Eryilmaz et al, 2020).

The ideal treatment of SPSD is an affair of debate and controversy. It assimilate problem for the surgeon, nurses, and a nuisance to the patient. If it diagnosed early ordinarily treatment is conservative with a broad-spectrum antibiotic but if there is infection and discomfort surgical intervention procedure of surgical excision and the primary closure technique involves local excision of the midline sinuses, spanning the central cavity and laying open lateral tracts (Ekici et al., 2019). All hairs contained in the sinus are extracted and wall of the cavity is scrapped free of granulations. However, the wound may take at least six weeks to six months to heal because of the frequency of infection (Erkent et al., 2020).

The ideal approach for treating should be simple, inflict minimal pain, have the best chance for a cure and the least local recurrence rate, avoiding the hospital admission, or general anesthesia, and also require minimal wound care with low costs (Garg, 2019). As maintaining the quality of life is the main goal for patients with pilonidal disease treatment mustn't deviate from normal activity and return to work should be as short as possible because of the

economic impacts. All these advantages can be achieved via Phenolisation (Harries et al, 2019).

Phenol application owing to be applied easily, causing minor sclerosing effects, provides brisk recovery by increasing granulation and fibrosis also because of the anesthetic effect of phenol patients experience minimal pain in the post technique period. The most important feature of this method is elimination the need for surgery with minimally invasive, more aesthetically acceptable results with lack of tissue loss and associated complications also the lowest recurrence (Girgin & Kanat, 2019).

The nurse has an important role as the care of a patient with sacrococcygeal pilonidal sinus can be complex and challenging, it should encompass a holistic nursing assessment of the wound as regard to surgical site infection and wound epithelization, quality of life related to daily activities concurrent with assessment of pain, patient history and vital signs. Additionally, teaching and discussing treatment options that altered body image, self-esteem and anxiety. Recurrence and infection should be nursery discussed (Salih et al, 2021)

Significance of the study:

The number of patient's suffered sacrococcygeal pilonidal sinus disease admitted in general surgery unit for surgical intervention in Qena University Hospital in the last year was 133 cases according to **the Hospital Statistical Record., (2020)**. However, Pilonidal sinus disease has lots of morbidity such as abscess formation, purulent discharge, pain, and discomfort although no clear consensus which surgical methods have been objective with more hospital costs, long length of hospitalization, extendedly loss of time from health team members and high rate of recurrence **Jamal., et al (2020)**.

Aim of the study:

Evaluate effect of phenolisation dressing technique on healing rate and daily living activity among patient with sacrococcygeal pilonidal sinus.

Operational definition:

Phenolisation technique is the use of liquid phenol to act as a chemical sclerosing agent which injected to the sacrococcygeal pilonidal sinus during dressing causing localized damage to the inner lining (endothelium) of the sinus. (Aygen et al, 2021)

Research-Hypothesis

- 1- The healing rate will be improved between patients receiving phenol dressing technique than patients who receive routine dressing care.
- 2- Patients who receive phenol dressing technique will be relearns to normal daily living activity faster than patients who receive routine dressing care.

Subjects and Method

Research Design:

Quasi- experimental design was utilizing to fulfill the aim of the study.

Setting:

This study was carried out in a general surgery department and outpatient clinic at Qena University Hospital. The devices were in the 3rd floor and consisted of (25) beds ready for operated patients in which the ratio of nursing patients was nearly 1:2.

Sample Size

Convenience samples of 60 adult patients with primary sacrococcygeal pilonidal sinus type III and/or IV, who's admitted in general surgery department then following in outpatient clinic at Qena University Hospital. They were randomly assigned clinically into two equal comparable groups, study and control group (30 patients for each). The study group was remedied with a phenol dressing, while the control group received routine hospital dressing

Inclusion criteria:

The patients had been elected according to the following criteria:

Age from 18- ≤ 60 years ,both sexes have primary type III sacrococcygeal pilonidal sinus (characterized by a history of abscess and/or previous drainage) also type IV (characterized by extensive disease where one sinus opening lies outside the natal cleft area, history of multiple abscess formation and drainage without assertive pilonidal surgery), not belonging medications that triggering delay of wound healing such as corticosteroids, immunosuppressive and cytotoxic drugs and not suffer chronic diseases such cancers, congestive heart failure, end stage renal disease, liver failure or diabetes. Likewise patients complain Furuncles, anal fisher, pre-anal tuberculosis, type one or five and recurrent SPSD cases as well as past operated and the patient's lust to withdraw from any phase of the study were deemed as exclusion criteria.

Tools of data collection: Three tools were consumed for data collection

Tool 1: Patient interview assessment questionnaire:

The researchers developed them to assess patient's medical history, covers two parts:

Part (1): Patients demographic data (age, gender, education level, and occupation)

Part (2): Causative risk factors: comprise structured items to recognize patients united causative factors distinctive {family history, body mass index, weight (kg), height (cm), body hair characters as (extensive, stiff or both), hygienic condition as (good, moderate or poor), sitting hours, natal cleft retains moisture as (sweating, bathing or both).

Tool II: Pre/post Healing Progression rate scale:

Adopted from Young et al., (2019) to assess wound healing progress rate as complete, partial, lack, unchanged, infected. It evaluated 5 wound's parameters including; exudates color as {serous, serosanguinuous, sanguinuous, purulent}, amount as {dry/ scant, small, moderate, large} odor as {none, only at dressing, fill}, sinus pain frequency as {continuous, only at dressing, none} surrounding tissues as {intact, fragile, dry, macerated, erythema, edema},

Scoring system:

Every parameter get 100 scores, and the total wound status scores grade from 100 to 500, in which the higher score is the better healing. Complete wound healing was considered as the wound had (≥ 400 - ≤ 500) scores, and partial wound healing was counted (≥ 300 - < 400) scores. Lack of healing was rated (≥ 200 - < 300) also unchanged wound was saw as (> 100 - < 200).

Tool III: pilonidal disease daily living activity questionnaire:

This questionnaire use to measure of physical disabilities to assess behaviors related to daily living activities for patient with SPSD. It magnitude what patient able to do, it adopted from (Ömer et al., 2019) and includes 10- items based on a points of Likert Scale, a total score ranged from 0 to 20 as

- 0-4 = total unable,

- 5-10 = dependent and able to do with assistant,

- 11-20 independent and able to do without assistant,

Totally satisfactory above 10 and unsatisfactory less than 10 it includes: mobility tolerance, climbing stairs, toilet us, bathing, grooming, work/ school, travel, movableness sport, lift objects, and sexual life

Patients and Methods:**1- Administrative approval:**

- An official was advanced from the dean of the faculty of Nursing, South Valley University expounding the aim of the study, and beseeching permission to running the study.
- A written consent was gained from the director of general surgery unit at Qena university hospital to perform the study.

Ethical consideration:

The study was approved by ethics committee of facility of medicine (SVU-MED-MBC004-4-21-4-186) so as to protect the patient's rights. they were assured that the collected data were absolutely confidential and participation is voluntary also they can withdraw at any time of the study.

Validity and reliability of the study tools:

Face validity was done by 5 experts from Medical – Surgical Nursing staff and staff of general surgery who reviewed the tools for clarity, relevance, comprehensiveness, and understanding. Minor

modifications were labored and correction was accomplished accordingly then the tools were designed in their final format ditto tested for reliability. Reliability of the too I (parts 1, 2) and tool II was measured by Cronbach's alpha coefficient (r-0.72)

A pilot study

It was done on 10% (6 patients) of study subjects to test the clarity and applicability of the tools. The data obtained from the pilot study were analyzed; no changes were added in the used tools.

3- Data Collection:

The data were collected in 7 months, from 1st December, 2019 till 30th June, 2020, it was completed out of the next phases:

Assessment Phase:

Originally 60 eligible patients who met inclusion criteria were inducted employed then patients were randomly assigned to study and control group, 30 patients in each group based on their arrival to surgical ward. Patients who arrived first consisted as the control group, while the study group consisted of the other 30 patients arrived later. All patients were acquainted with the study's objective, and written informed consent was taken.

The researcher stayed (30 -45) minutes with each patient of the both groups, to filling out demographic and causative risk factors inclusive: age, gender, education level, and occupation, family history, body mass index was enumerated by gauging patients' height and body weight by using the following equipoises [BMI = weight / (height²) = Kgm/m²]. Body hair characters, hygienic condition, sitting hours, natal cleft retains moisture. It was obtained once as pretest using tool (I).

Assessment of wound was done for all of both groups with aid of a pen torch for more wound visualization bearing in mind color, amount, odor sinus pain frequency and surrounding tissues using the healing progression rate scale form present in tool (II). Also assessment of daily living activity using the pilonidal disease daily activity questionnaire present in tool (III) and photograph was taken for all patients at 1st week, repeated after 3rd week, and after 6th week to evaluate the healing rate. The study subject were received phenol dressing technique based on concentration phenol (CAS is 108-95-2) and 70% ethyl alcohol was dissolved in one liter of 70% ethyl alcohol to obtain 80% phenol solution (Öztürk A & Karakose Y ., 2019).

Control subject were received routine dressing care by using cotton swabs with normal saline 0.9% and povidone iodine solution to clean the wound in the morning shift by surgical nurses.

Implementation Phase:**Procedure:**

Before starting procedure the nurse instructed the study group to remove hairs of the back and buttock down to mid-thigh by shaving or by using of a depilatory cream then the patient in prone position and the area was sterilized with povidone-iodine solution, large piece of cotton was used to protect the anus while rest of the area was liberally coated with vaseline and covered with gauze except the targeted sinus area. The researcher starting procedure by the skin and sacrococcygeal fascia along with sinus's surrounding tissue and its lateral tract was infiltrated with adequate amount of lignocaine with adrenaline. If the sinus opening was less than 3 mm in diameter, it was enlarged by use of mosquito clamp after local anesthesia but if not enlargement was not required.

Following determination of the sinus, researchers start removing the hairs with the same clamp. If there was sinus abscess had detected, the drainage was required with removal of the content of pus and the hair then the sinus tract was curetted with biopsy curette. An eighty percent phenol was injected into the main sinus with the aid of 5 mL disposable syringe to fill the sinus tract with snugly fitted nozzle of the syringe with plastic or metallic cannula into the opening of the sinus in which the nurse protecting the surrounding skin during manipulation. The phenol instillation was performed slowly using minimum pressure to avoid phenol being forced into the tissue surrounding the sinus and causing a local inflammatory reaction. The phenol was left in situ for approximately (3-5) min then the nurse expressed it by pressure while the excess phenol was mopped along with debris removed from the sinus. The procedure was finished after dressing the wound with a gauze piece.

The nurse instruct the patient to eager body hygiene as daily wash using antibacterial soap or shampoo with regularly shave near tailbone once a week or more to prevent ingrown hairs in this area, avoid nonentity of pain in sacrococcygeal area and use a mirror for inspection and detection any skin changes, losing weight to lower risk and parrying sitting for too long to keep pressure off the area. Also the study group was asked to return to daily activities immediately after the procedure and had their first follow-up after one week.

Photograph pictures: were possessed at beginning, post 1, 3 and 6 weeks to evaluate the healing rate in both groups and to emulate between them, respecting patient's confidentiality during illustration.

Evaluation phase includes:

Following-up was done and wound parameter assessment was applied by the nurse considering

standard parameters of wound healing such pain, odor, exudates amount and color were evaluated as well as daily living activities. If the study group patient's wound had no leakage, no further procedure was required. But if leakage was observed, the nurse guide the patient that the same maneuver described above was repeated at third and sixth weeks till complete healing. Closure of sacrococcygeal pilonidal sinus orifice was accepted as complete cure. No appearance of a new sinus during follow-up periods or no since leakage was considered as successful procedure same as no patient was intervened with more than three of phenol dressing within the study group. Antibiotics were not used for any patient in the study group. While control group were subdue for hospital routine (wound dressing, systemic antibiotics, and non-steroidal anti-inflammatory drugs). Follow up was repeated after first, third and sixth weeks for all participants.

Statistical-Analysis

The data gained were rehearsal and all set for computer entry, coded, analyzed and tabulated. Descriptive statistics as (number and percentage, mean and stander deviation) was achieved using computer program SPSS version (25). Chi-square, P-value and T-value used to compare differences in the distribution of frequencies amidst the both groups.

Results:

Table (1): Demographic and clinical characteristic in the control and study groups

Demographic & Causative risk factors	Group				χ^2	P-value
	Study (n=30)		Control (n=30)			
	No	%	No	%		
Demographic data:						
1- Age (years)					0.71	0.791
< 40	19	63.33	18	60.00		
40 - \leq 60	11	36.66	12	40.00		
Mean\pm SD	31.03 \pm 10.06		30.30 \pm 9.92		t=1.452	0.157
2- Gender					0.131	0.718
- Male	23	83.33	22	80.00		
- Female	7	16.67	8	20.00		
3- Educational level					F:0.501	1.00
Illiterate	2	6.67	3	10.00		
Less than a diploma	9	30.00	8	26.67		
Diploma	7	23.33	8	26.67		
University	12	40.00	11	36.67		
4- Occupation					F:1.52	0.704
Housewife	7	23.33	10	33.33		
Clerical work	16	53.33	14	46.67		
Not working	4	13.33	4	13.33		
Retirement	3	10.00	2	10.00		
5- Body hair characters					F:0.435	9.25
Extensive	8	26.67	10	33.33		
Stiff	3	10.00	3	10.00		
Both	19	63.33	17	56.67		
Causative risk factors:						
a- BMI					F:2.026	0.666
25 – 30 (class I)	10	33.33	12	40.00		
30-35 (classII)	14	46.67	13	43.33		
18 - 25 (desirable)	2	6.67	0	0.00		
normal	4	13.33	5	16.67		
b- Family history					0.011	0,915
Yes	10	33.33	9	30.0		
No	20	66.67	21	70.00		
c- Hygienic condition					1.758	0.415
Good	10	33.33	15	50.00		
Moderate	14	46.67	10	33.33		
Poor	6	20.00	5	16.67		
d- Sitting hours					0.617	0.432
from 8 –to 10 hr	19	63.33	16	53.33		
> 10- \leq 12hr	11	36.67	14	46.67		
E- Natal cleft retains moisture					0.00	1.00
Sweating,	15	50.00	15	50.00		
Bathing	15	50.00	15	50.00		
Both	30	100.00	30	100.00		

 χ^2 : Chi square test* significant P value ≤ 0.05

Table (2): Frequency and percentage distribution of the sample according wound assessment among study and control subjects at the baseline and during follow-up for each group=30.

wound's parameters	Study Group						Control Group						χ^2		
	Baseline		3 rd wks		6 th wks		Baseline		3 rd wks		6 th wks		P ₁	P ₂	P ₃
	No	%	No	%	No	%	No	%	No	%	No	%			
1-Exudates (color)															
- Serous	0	0	1	3.33	0	0.00	0	0.00	4	13.33	17	56.67	0.268 0.605	66.493 (<0.001*)	70.360 (<0.001*)
- Serosanguinous	0	0	0	0.00	0	0.00	0	0.00	14	46.67	5	16.67			
- Sanguinous	17	56.67	0	0.00	0	0.00	15	50.00	6	20.00	3	10.00			
- Purulent	13	43.33	0	0.00	0	0.00	15	50.00	6	20.00	5	16.67			
2-Exudates (amount)															
- Dry/none	0	0.00	20	66.67	30	100.00	0	0.00	0	0.00	3	10.00	1.319 0.739	38.667 (<0.001*)	52.893 (<0.001*)
- Scant	9	30.00	8	26.67	0	0.00	10	33.33	12	40.00	12	40/00			
- Small	6	20.00	2	6.67	0	0.00	9	30.00	7	23.33	5	16.67			
- Moderate	8	26.67	0	0.00	0	0.00	6	20.00	6	20.00	5	16.67			
- Large/copious	7	23.33	0	0.00	0	0.00	5	16.67	5	16.67	5	16.67			
3-Odor:															
- None	0	0.00	30	100.00	30	100.00	0	0.00	4	13.33	10	33.33	2.443 0.118	51.724 (<0.001*)	32.405 (<0.001*)
- Only at dressing	16	53.33	0	0.00	0	0.00	10	33.33	16	53.33	10	33.33			
- Fill the room	14	46.67	0	0.00	0	0.00	20	66.67	10	33.33	10	33.33			
4- Sinus pain (frequency)															
- None	0	0.00	28	93.33	30	100.00	0	0.00	0	0.00	3	10.00	1.724 0.189	62.083 (<0.001*)	56.157 (<0.001*)
- Only at dressing	10	33.33	2	6.67	0	0.00	15	50.00	21	70.00	20	66.67			
- Continuous	20	66.67	0	0.00	0	0.00	15	50.00	9	30.00	7	23.33			
5- Surrounding tissues:															
- Intact	0	0.00	22	73.33	30	100.00	2	6.67	5	16.67	9	30.00	2.482(0.092) 0.015(0.902) 1.498(0.221) 0.067(0.795) - -	19.461(<0.001*) 13.649(<0.001*) 12.000(0.001*) 19.232(<0.001*) 26.786(<0.001*) 24.093(<0.001*)	32.308(<0.001*) 21.818(<0.001*) 20.000(<0.001*) 12.000(0.001*5) 30.000(<0.001*) 25.714(<0.001*)
- Fragile	16	53.33	0	0.00	0	0.00	15	50.00	11	36.67	16	53.33			
- Dry	2	6.67	0	0.00	0	0.00	5	16.67	10	33.33	15	50.00			
- Macerated	16	53.33	1	3.33	0	0.00	17	56.67	15	50.00	10	33.33			
- Erythema	30	100	6	20.00	0	0.00	30	100.00	26	86.67	20	66.67			
- Edema	30	100	5	16.67	0	0.00	30	100.00	24	80.00	18	60.00			

P1: The differences between study and control at baseline phase

P2: The differences between study and control at 3rd weeks phase

P3: The differences between study and control at 6th weeks phase

χ^2 : Chi square test

* significant P value ≤ 0.05

Table (3): Frequency and percentage distribution of the studied patients according to behaviors relating to daily living activities at the baseline and during follow-up

Daily Living Activity Behaviors	Study Group						Control Group						χ^2		
	Baseline		3 rd wks		6 th wks		Baseline		3 rd wks		6 th wks		P ₁	P ₂	P ₃
	No	%	No	%	No	%	No	%	No	%	No	%			
1-Mobility tolerance															
Yes	11	36.67	26	86.67	30	100.00	12	40.00	13	56.67	19	63.33	0.071	12.381	13.469
No	19	63.33	4	13.33	0	0.00	18	60.00	17	43.33	11	36.67	(0.791)	(0.001*)	(<0.001*)
2-climbing Stairs															
Yes	5	16.67	25	83.33	30	100.00	10	33.33	3	10.00	9	30.00	2.222	32.411	32.308
No	25	83.33	5	16.67	0	0.00	20	66.67	27	90.00	21	70.00	(0.136)	(<0.001*)	(<0.001*)
3-Toilet us															
Yes	8	26.67	27	90.00	29	96.67	5	16.67	9	30.00	15	50.00	0.884	22.50	16.705
No	22	73.33	3	10.00	1	3.33	25	83.33	21	70.00	15	50.00	(0.347)	(<0.001*)	(<0.001*)
4-Bathing															
Yes	15	50.00	30	100.00	30	100.00	13	56.67	0	0.00	10	33.33	0.268	60.00	30.00
No	15	50.00	0	0.00	0	0.00	17	43.33	30	100.00	20	66.67	(0.796)	(<0.001*)	(<0.001*)
5-Grooming															
Yes	24	80.0	30	100.00	30	100.00	22	73.33	0	0.00	19	63.33	0.373	60.00	13.469
No	6	20.00	0	0.00	0	0.00	8	26.67	30	100.00	11	36.67	(0.542)	(<0.001*)	(<0.001*)
6-work/ school															
Yes	12	40.00	29	96.67	30	100.00	15	50.00	0	0.00	6	20.00	0.606	56.129	40.00
No	18	60.00	1	3.33	0	0.00	15	50.00	30	100.00	24	80.0	(0.436)	(<0.001*)	(<0.001*)
7- locomotive traveling															
Yes	7	23.33	23	76.67	28	93.33	10	33.33	0	0.00	10	33.33	0.739	37.297	23.254
No	23	76.67	7	23.33	2	6.67	20	66.67	30	100.00	20	66.67	(0.390)	(<0.001*)	(<0.001*)
8- Movableness sports															
Yes	9	30.00	23	76.67	30	100.00	7	23.33	0	0.00	8	26.67	0.341	37.297	34.737
No	21	70.00	7	23.33	0	0.00	23	76.67	30	100.00	22	73.33	(0.559)	(<0.001*)	(<0.001*)
9-lifing objects															
Yes	14	46.67	27	46.67	30	100.00	12	40.00	0	0.00	11	36.67	0.271	49.041	27.805
No	16	53.33	3	53.33	0	0.00	18	60.00	30	100.00	19	63.33	(0.602)	(<0.001*)	(<0.001*)
10-sexual life															
Yes	6	20.00	26	86.67	30	100.00	8	26.67	0	0.00	7	23.33	0.373	45.882	37.297
No	24	80.0	4	13.33	0	0.00	22	73.33	30	100.00	23	76.67	(0.542)	(<0.001*)	(<0.001*)

P1: The differences between study and control at baseline phase

 χ^2 : Chi square test* significant P value ≤ 0.05 P2: The differences between study and control at 3rd weeks phaseP3: The differences between study and control at 6th weeks phase

Table (4): Comparison between the two studied groups according wound healing progress rate after 6th weeks of follow up.

wound healing progress rate	Group				χ^2	P-value
	Study(n=30)		Control (n=30)			
	N	%	N	%		
Complete healing (≥ 400 - ≤ 500)	28	93.33	6	20.00	33.235	< 0.001*
Partial healing (≥ 300 - < 400)	2	6.67	14	46.67		
Lack healing (≥ 200 - < 300)	0.0	0.0	10	33.33		

χ^2 : Chi square test

* significant P value ≤ 0.05

Table (5): Comparison of two studied groups according daily living activity satisfaction at the end 6th weeks of follow up

Patient daily living activity satisfaction	Groups				χ^2	P-value
	Study(n=30)		Control(n=30)			
	N	%	N	%		
Satisfied	27	90.00	8	26.67	24.754	< 0.001*
Unsatisfied	3	10.00	22	73.33		

χ^2 : Chi square test

* significant P value ≤ 0.05

Table 6: Relation between daily living activity behaviors and wound healing progress rate among study and control group after 6th week of follow up

Daily living activity Behaviors	Wound Healing Progress Rate in Study Group				Wound Healing Progress Rate in Control Group					
	Complete		Partial		Complete		Partial		Lack	
	No	%	No	%	No	%	No	%	No	%
- Satisfied	27	90.00	0	0.00	6	20.00	2	6.67	0	0.0
- Unsatisfied	1	3.33	2	6.67	0	0.00	12	40.0	10	33.33
$\chi^2(P)$	19.286(<0.001*)				21.234(<0.001*)					

Control Group as rotten hospital intervention

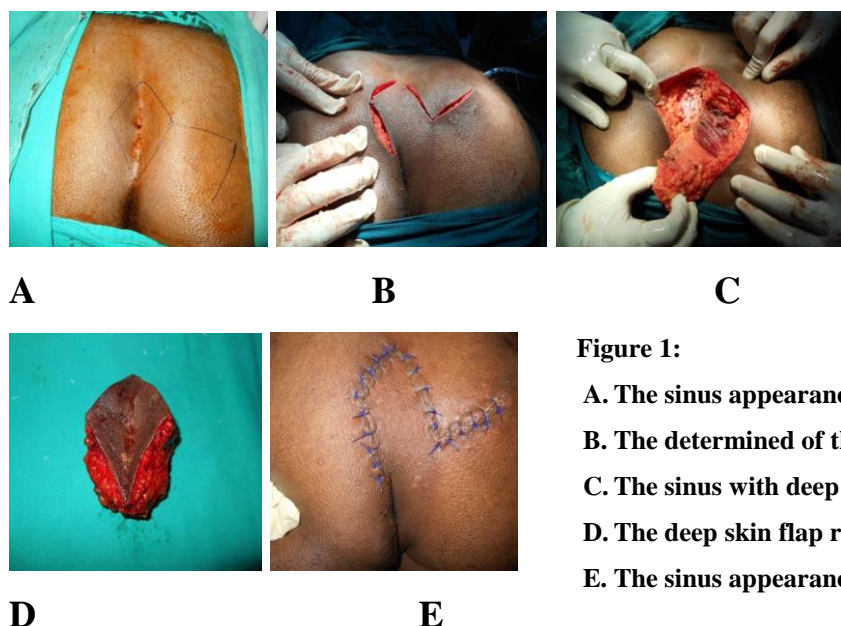


Figure 1:

- A. The sinus appearance before the rotten hospital intervention
- B. The determined of the sinus operating aria
- C. The sinus with deep skin flap removal
- D. The deep skin flap removal part
- E. The sinus appearance after surgery

Study group as phenol dressing technique

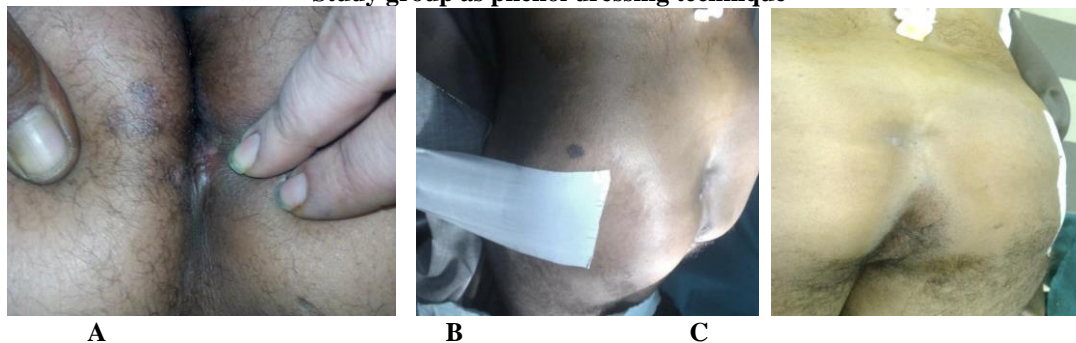
**Figure 2:****A- The sinus appearance before the installation of pinhole****B- The sinus appearance after one week after installation of pinhole****C- The sinus appearance after two weeks after installation of pinhole**

Table (1): Shows that no statistical difference between the both groups, more than half of the study group (63.33%) and the control group (60.0%) were less than 40 years old with average means 31.03 ± 10.06 and 30.30 ± 9.92 respectively. they were mostly males and less than half of the study group (40.0%) and control group (36.37%) were university educated. also it was found that more than half of the study (53.0%) and near half of control groups (46.67%) were clerical work. More than half (63.33%, 56.67%) had overabundance of hair (Extensive and Stiff in their character) in study and control group respectively in which near half of the patients (46.67%, 43.33%) were obese class II in study and control group respectively. as regard family history approximate on third of study and control group (33.33% and 30.0%) were had positive family history of PNS respectively. Half of study group (46.67%) compared with (33.33%) in control group were had moderate hygienic condition. In addition half of the study group (63.33%) and (53.33%) of control groups were had sitting hours from 8 –to 10 hr. All patient (100.0%) were had natal cleft retains moisture in study and control group

Table (2): Exploring no statistical significant difference in all wound healing parameter as exudates include (color, amount, Odor), pain and surrounding tissues between studied group at the baseline phase, in which all wound healing parameter has been improved in study group compared to control group post intervention after 3rd weeks and 6th week at with statistically significant difference at ($p < 0.05$).

Table (3): Illustrates no statistical significant difference in all daily living activity behaviors as mobility tolerance, climbing stairs, toilet us, bathing, grooming, work/ school, locomotive traveling, movableness sport, lifting objects and sexual life

between studied group at the baseline phase, in which all daily activity behaviors been improved in study group compared to control group post intervention after 1st week, 3rd weeks, 6th week and 6months at with statistically significant statistical difference between study and control group the at ($p < 0.05$).

Table (4): Shows that, the majority of study group 93.33% were had complete wound healing at the end of the 6th weeks compared to 20.0% of control group with significant difference between the two groups at ($p < 0.05$)

Table (5): Represented the majority of study group (90.00%) were had satisfied daily living activity by the end of 6th week of follow up compared with the control group with significant difference at ($p < 0.05$).

Table (6): Reveals that there was a statistically significant relation between daily living activity behaviors and wound healing progress rate, a satisfied daily living activity with complete wound healing showed a high percentage (90.0%) in the study group. and unsatisfied activity level with partial wound healing showed (40.0%) in the control group.

Discussion

The known antiseptic, anesthetic, and strong sclerotic attributes of Phenol mutual with affirmative preclinical data in pilonidal sinus create it as one of the current popular conservative options to treat pilonidal sinus. (Isik et al, 2019)

Former studies pointed the Phenol have low financial cost, minimum tissue excision with a lower recurrence rate, short length of stay in the hospital, minimum workforce loss, fast recovery back to normal life, , and minimal scar tissue formation and shows wound healing acceleration. (Akan et al, 2018) Pilonidal sinus is a widespread, costly and decaying issue

among young adults which has difficulty socially and affects living comfort negatively. (Humphries, & Duncan, 2019)

Subsequently, currently sundry methods have been researched to achieve the best results for treatment of this sort of sinus which causes nursing embattle. With regard to sociodemographic data our results displaying the incidence of Sacrococcygeal Pilonidal sinus among patients as less than forty years with incidence rate three male to one female for both study and control groups. These results were consistence with Dogru et al., (2018) who reported that Pilonidal sinus disease affects mostly young men and between eighteen to less than forty years as this become less after 40 as it increasing in almost all age groups and both sexes by 3:1 male-to-female ratio. As regards to patient occupation, it was found that about half of the subject are clerical work this consistent with Davage, (2020) As a result, people at the highest risk of developing pilonidal sinus include those with jobs driving or sitting for long stretches of time. Based on our results, the majority of the both study and control group were characterized by extensive and Stiff hair this construed by Vardy. et al., (2019) the stiff extensive hairs may curl back on themselves and pierces the surrounding skin with their distal ends first by growth force also family tendency is also an important factor accelerates the development of pilonidal sinus disease.

The study aimed to evaluate effect of using phenolisation dressing on healing rate and daily activities among patient with sacrococcygeal pilonidal sinus disease. According to the results of our study near half of the patients were class II obesity related to the study and control group and approximately third of them were had positive family history of pilonidal sinus disease. This expounds by Cubukcu et al., (2020) mention that obesity has been reported as an important risk factor PSD and the higher rates of postoperative complication and recurrence also detect a statistical significance between body mass index (BMI) and PSD because of the deeper structure of the intergluteal cleft and the fragility with wetness as a result of over sweat, However the present study resulted that regarding hygienic condition nearly half of study group compared with one third in control group were had moderate hygienic condition this confirmed by Kayadibi, et al (2017) surely however, in terms of etiology, PSD is not confined to the obese alone but is also a concern in those with excessive pilosity, over sweat, poor body hygiene, irregular pre sacral shaving write in the nurse has important role in stressing guiding and teaching patients' risk factor PSD to prevent occurrence

As considered to sitting hours more than half of the both groups were had sitting hours from 8 –to 10 hr. this deliberated with Mentés, et al (2021) corroborated in their study sitting time more than six hours a day was adjusted risk factor in addition the majority of the classical articles about SPD indicate a relation between the long sitting time and this disease. Whilst regard wound assessment there were statistically significant difference between study group subjected to phenol instillation and control group related to wound healing parameter this agree with Schneider, et al (2018) that phenol solution describe for the first time both symptomatic and anatomic healing in the same study. Symptomatic healing is cessation of symptoms that include no pain, no swelling, no odor or discharge as dry/none exudate. Anatomical healing is complete skin epithelialization in addition to symptomatic relief.

Belonging wound healing progress rate the majority of the study subject completed their wound healing by the end of the 6th week. Thaler, (2020) accentuate Crystalline phenol has been shown to be a successful treatment modality for pilonidal sinus disease, comparably with similar results to other surgical treatments subjoin as simple treatment methods for pilonidal disease as minimally invasive surgery or non-excisional treatments have been associated with less morbidity and low recurrence rates phenol solution and the crystallized form was observed to cause destruction in the pilonidal cyst cavities, and to narrow lipoid tissue, sacral fascia and skin it irritates the inner wall of the pilonidal sinus cavity, induces granulation and contraction, results in closure of the cavity and easy procedure can be conduct by the nurse in the clinic

According to behaviors relating to daily activities all daily activity behaviors been improved in study group compared to control group post intervention after 1st week, 3rd weeks, 6th week Topuz, et al (2021) express, Phenol procedure has been reported to be well tolerated, cost-effective, and result in quicker return to daily activities it has several advantages as minimally invasive, outpatient procedure, does not require hospital stay, and leaves a minimal postoperative incision scar. Therefore, this procedure has been suggested to increase the quality of life of patients with faster resumption to daily activities. Also Ertan, et al (2019) reported quality of life is the main nursing goal for patients with pilonidal disease; it also minimizes the time off work, deviation from normal activity, and costs

According to relation between activity level behaviors and wound healing progress rat there was a statistically significant relation between activity level behaviors and wound healing progress rate Tokac et al (2019) investigated the total satisfaction

rates are determined by patient tolerability, complication rate, postoperative pain, quick return to daily work/school and cosmetic results also in the same study were found increase patient's satisfaction when compared phenol applications with frequently used surgical applications in the treatment of SPSD.

Conclusion:

The existing results concluded the phenol dressing as the most effective technique in treating sacrococcygeal pilonidal sinus than hospital routines. It accelerates wound healing without any side effect, safe, inexpensive and result in statistically significant improvement in daily activities. However; additional studies are required in the future to confirm these results.

Recommendation:

Further clinical proofs required for establishing the phenol as one from the most effective alternative intervention for treating sacrococcygeal pilonidal sinus disease

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