

ORIGINAL ARTICLE

OUTCOME OF USE OF 1% SILVER NITRATE IN PATIENTS WITH LOW LYING PERIANAL FISTULA

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Background: Anorectal fistula is a common illness which is seen among the middle-aged male patients. Various surgical procedures have been proposed and are associated with the recurrence of the fistula, repeated surgery and in some cases incontinence which may reach up to 43% in complicated fistulas. The purpose of this study was to assess and formulate a non-surgical procedure for fistula in ano through irrigation of the fistula tract with 1% of silver nitrate solution in healing the low perianal fistula. **Methods:** Seventy-nine patients presenting to the outpatient department of Ward 3, Surgical unit 1 in Jinnah Postgraduate Medical Centre during a period of 8 months from April to November 2017 with complain of perianal pain and pussy discharge were included in the study. Three patients of the total 79 patients lost to follow up. Outcome measure were cessation of the symptoms for consecutive 10 weeks. **Results:** Seventy-six patients were assessed and underwent irrigation using this 1% of silver nitrate solution. Out of 76 patients, 58 (76.3%) patients showed complete clinical healing while 18 (23.68%) of patients showed failure to clinical healing. Patients with continuous discharge had a significantly higher rate of complete clinical healing than those with intermittent discharge. **Conclusion:** From this study it can be concluded that cauterizing and corrosive properties of silver nitrate are effective in treating the patients with low lying perianal fistula. We suggest that this method should be used as a first line treatment option for all the patients presenting with low lying anal fistula since it is simple, can be easily performed on an OPD basis is minimally invasive and avoids any complication.

Keywords: Silver nitrate; Perianal fistula; Low lying perianal fistula; Nonoperative management

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INTRODUCTION

Fistula is an unusual communication between two organs or vessels that do not usually communicate; for e.g. perianal fistula, the connection between the distal gastrointestinal tract and the skin. The abnormal communication of the distal gastrointestinal tract with the perianal skin is because of cryptoglandular infection and is thought that the anal glands become plugged by inspissated debris or stool.¹ As a result, infection develops in the anal glands, that goes through the path of least resistance, leading to an abscess that results in development of a fistula in 27–60% of the population.² Anorectal fistula is not an unusual illness and generally seen in middle to old age patients ranging from 20 to 60 years with a median of 40 years. It has an incidence of 8.6 per 100,000 population³ and is more common in males with a ratio of 2:1 to that of female.

Surgical treatment, which had been considered as the only treatment modality does not always result in complete healing and is associated with recurrence, repeated surgery and, in few cases, incontinence which deteriorates the quality of life.^{4,5} Various other treatment options have been described, but none of the treatment option for fistula-in-ano described till now can be considered perfect.⁶ Anal

fistulas may persist and fail to heal because of an ongoing disease within the anal glands. Histological studies have shown that fistula persistence is most probably related to epithelialization of the fistula track either from the internal or the external openings, this is most probably related more to non-specific epithelialization instead of chronically infected anal gland.⁷

Silver nitrate solution is a chemical agent that has both cauterizing and corrosive properties which are helpful in ablating the granulation and epithelized tissue that lines the fistula tract. It encourages healing within the fistulous tract with scar tissue formation and ultimate closure of the tract.⁸ In addition, the solution also has antimicrobial properties which reduces the microbial load and thus helps the healing of the anal fistula.⁹

MATERIAL AND METHODS

All the patients presenting to the outpatient department of Ward 3, Surgical Unit 1 in Jinnah Postgraduate Medical Centre during a period of 1 year from April to Nov 2017 with complain of pussy discharge from the perianal region were included in the study. The patients who were previously operated for fistula in ano or those with complex high rectal fistula (with 2 or more than 2 external opening) or all

those patients who had the secondary cause of fistula, such as crohn's disease, cancer, tuberculosis or actinomycosis were excluded from the study.

The procedure of instilling the silver nitrate was done in Out Patient Department without using the anaesthetics agent. Firstly, the patient was positioned in left lateral decubitus position and a metallic probe was inserted to confirm the patency of the fistula. After removing the stellate of the cannula, the 16 G cannula was pushed into the external opening of the fistulous tract. Thereafter, a digital rectal examination was performed to assure that the cannula did not protrude through the mucosa into the anal canal. If the cannula does pass through, it is withdrawn to prevent the damage of the mucosa and dribbling of the content into the anal canal. Once the position of the cannula is confirmed the epithelial lining of the tract was curetted with the help of plastic end of the cannula till the bleeding from the tract is noted. After curettage 1–2 ml of 1% silver nitrate solution was used for the flushing of the fistula tract while slowly withdrawing it from the tract. The skin around the external opening is protected from the spillage of the silver nitrate through a gauze piece around the external opening while no extra precautions were adopted to prevent the spillage of solution into the anal canal. After administering the solution, intensity of pain was noted with the help of a visual pain scoring chart among the patients.

Later, the patients were advised to follow up in outpatient department every 15 days from the previous irrigation and the complains were noted. The irrigation was repeated in only those patients who continued having persistent discharge even after 2 weeks of first administration. A total number of 6 irrigations were done among the patients who

continue to have pussy discharge, before labelling them for failure of procedure.

The clinical data was recorded on a proforma which included personal information such as age, gender, marital status and contact number. Main presenting complains such as duration, amount (based on area of staining or number of dressing used per day) and frequency, i.e., (continuous or intermittent discharge) of pussy discharge were also recorded. A detailed history was taken to exclude secondary causes of fistula. Physical examination was done such as DRE and proctoscopy to localize the internal as well as external openings of the fistula. Fistulogram was performed in all the patients to differentiate between the high lying and low-lying rectal fistula. All those patients who had high lying anal fistula were identified and excluded. The credentials which were noted included date of first application, dates of consecutive applications (if any), dates of re-consultation visits, time taken for complete clinical healing, time of recurrence, complete follow-up period, and the symptoms which were left even after the treatment were also recorded.

RESULTS

Ninety-one patients, who presented with symptoms of active anal fistula from April to Nov 2017 were enrolled in the study. One patient with Crohns disease, 6 patients with abdominal tuberculosis, 4 patients with high complex fistulous tract and 1 patient with rectal carcinoma were omitted from the study. In total, 79 patients underwent flushing of the fistulous tract with 1% silver nitrate solution. Two patients lost to follow up after first irrigation and one lost to follow up after 2nd irrigation. Rest of the 76 patients were included in the final study.

Table-1: Distribution of patients with regard of demographics and results

	All patients (n= 76)	%	Patients with complete clinical healing (n=54)	Patients with failure to heal clinical healing (n=18)	p =value
Gender					
Male	58	76.3	44	14	0.57
Female	18	23.7	14	4	
Age (Years), median (range)	32 (18–55)		32.79±9.0	32.79±9.0	0.14
High/Low					
High	12	15.8	4	0	1.0
Low	64	84.2	54	18	
Type of fistula					
Transsphincteric	57	94.7	52	5	1.0
Intersphincteric	19	5.3	17	2	
Duration of discharge					
<1 month	30	39.5	24	6	0.71
1-6 months	18	23.7	12	6	
6-12 months	20	26.3	14	6	
>12 months	8	10.5	8	0	
Frequency of Discharge					
Daily	38	50.0	28	10	0.514
Weekly	24	31.6	22	2	
Fortnightly	8	10.5	4	4	
Monthly	6	7.9	4	2	
Amount of Discharge (ml), median (Range)	5	5–15	10.21±10.7	11.25±6.2	0.056

	All patients (n= 76)	%	Patients with complete clinical healing (n=54)	Patients with failure to heal clinical healing (n=18)	p=value
Post procedure Pain					
Mild	30	39.5	16	14	0.001
Moderate	40	52.6	36	4	
Severe	6	7.9	6	0	
Time to heal (days), median (Range)	15	15-60	71.25±22.5	23.96±17.9	0.001
Number of irrigations needed					
1 irrigation	76		52	24	0.001
2 irrigation	24		4	20	
3 irrigation	20		2	18	
4 irrigation	18		0	18	
Complication	Nil	Nil			

Among all the patients, 62 patients were male, the median age of the patient was 32 years. The most common complain of patients at the time of presentation was discharge 89% and pain 58%. The median of duration of discharge was 3 months. In 41 (53.9%) patients, discharge was continuous (everyday), whereas in 35 (46.1%) patients it was periodic. All the patients enrolled in this study had low lying rectal fistula. Forty-six (60.5%) patients received single administration of 1% silver nitrate, while 30 patients (39.5%) required more than 1 irrigations. The median number of irrigations was (4) and the median follow up time was 10 weeks.

DISCUSSION

The prime objective in fistula surgery is to efface the fistula tract through closing the internal opening while saving the normal control of defecation. Submucosal, intersphincteric, and low transsphincteric anal fistulas which are present in the distal one-third are easy to treat with simple fistulotomy, and its success rate is better with little to no impact on fecal control.^{10,11} However, high lying or complex fistulas has a high rate of minor fecal incontinence (soiling and flatus incontinence).¹²

In this study, we came across to the fact that nearly 76.3% of the enrolled patients have attained absolute clinical healing following flushing of fistulous tract with 1% silver nitrate solution. A single irrigation was adequate to occlude the fistula in nearly 3/5th of the patients and 1/5th of patients showed absolute clinical healing after five repeated trials. Around 18 patients (23.7%) exhibited clinical failure in healing and the most probable reason of this incomplete healing was not clear; however, fatty buttocks, unhygienic conditions, 2 or more than 2 openings and length of fistula were the most likely factors that resulted in non-healing. We subjected all those patients to surgery and later fistulotomy resulted in complete clinical healing.

To our knowledge, only one article has been published on this topic till yet. Key constraints of this study are the small sample size and the short follow up period of 12 weeks. Longer follow up is warranted

as it is likely that the patients may suffer recurrence after this period of study.

Another constraint is that we did not compare this procedure with traditional treatment options (eg, Fistulotomy and fistulectomy) and we did not use a placebo procedure to assess the actual impact of silver nitrate on anorectal fistula healing. The quantity of discharge and severity of pain were not measured using an objective method before treatment, similarly the level of satisfaction after treatment wasn't assessed so we actually cannot compare the results. Similarly, no effort was made to ascertain the length of the fistula or to find out if there was any other high lying blind tract beside the internal and external opening.

In one recent study, in which the silver nitrate was used to irrigate the fistulous tract, total of 56 patients having anal fistula were analysed among which only twenty-nine (52%) had full healing without recurrence. The median number of instillations that were required for full clinical healing in that study were 4.

In other single study, which came up as a critique on the above mentioned article on silver nitrate application in patients with anal fistula total 15 patients were enrolled out of which 6 patients (40%) showed clinical healing while 2 (13.3%) patients developed recurrence.¹² However, one patient (6.66%) developed a complication as a result of silver nitrate, i.e., Phlegmon which was not seen in the main study or our study.

However, in our study the results are more promising as we only entitled patients who had low rectal fistula without any complications. In our study we did not encounter any complication after the use of 1% silver nitrate, only factor which was important post procedure was pain intensity which was moderate in most of the cases.

In our study, another significant association was of post procedure pain with clinical healing at the time of irrigation. We noted that the patients who developed more pain at the time of irrigation tend to develop healing earlier as compared to patients who experienced less pain. Similarly, the curettage with

the blunt end of the cannula¹³ was done before the instillation of the irrigation fluid which was not done in previous studies.

CONCLUSION

From this study it can be concluded that cauterizing and corrosive properties of silver nitrate are effective in treating the patients with low lying perianal fistula. We suggest that this method should be considered as a first line treatment modality for all the patients presenting with low lying anal fistula because it is simple, performed on an outpatient basis, minimally invasive, and lacks the complications.

AUTHORS' CONTRIBUTION

AI: Main idea, study design, data collection, drafting, discussion. TA: Data collection, data analysis. IK: Introduction, data collection, data analysis. SP: Main idea, discussion. MIK: Review, discussion.

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