

Original Research Article

The effect of salty warm sitz bath on the conservative management of anal fissure

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ABSTRACT

Background: The benefits of the sitz bath method in the management of anorectal diseases in general and anal fissure, in particular, are still not scientifically well-established. In our study, we aim to analyze the effectiveness of the sitz bath method as part of a conservative management protocol to treat anal fissure among Saudi Arabians who fear the surgical option for particularly religious reasons.

Methods: The 539 Saudi Arabian patients with acute or chronic anal fissures between January 2004 and December 2013 were included. 386 were male and 153 were female with a mean age of 25.68±5.7 years. The conservative management protocol consisted of three times per day salty warm sitz bath, 2 grams glycerin suppositories per rectum 20 minutes before defecation as lubricant and laxative, Metamucil bulk-forming fiber (a mix of one dose-sachet-within 240 milliliters (8 oz) of cold liquid) once daily after breakfast for constipation.

Results: The 379 (70.3%) patients had complete healing with a duration range from 3-7 weeks, while 160 (29.7%) patients did not heal and required surgical intervention. The recurrence rate was 0% in both groups after two years of follow-up.

Conclusions: We conclude that sitz bath as part of a conservative management protocol to treat anal fissure showed promising results which were a significant benefit to patients who were reluctant to undergo lateral anal sphincterotomy and dilatation because of the fear to lose anal control. We recommend further specialized studies to investigate the role of sitz bath in the conservative management of anal fissure.

Keywords: Anal fissure, Sitz bath, Glycerin suppositories, Metamucil bulk-forming fiber, Lateral anal sphincterotomy, Dilatation

INTRODUCTION

The sitz bath is a conventional remedy commonly recommended for the non-surgical treatment of anal diseases or postoperative management of perineal wounds after anal surgery.¹ Warm sitz baths are reported to help relieve anal discomfort, and they are effective in reducing spasms by relaxing the anal sphincter and

promoting tissue healing by increasing the blood flow.² It can relieve anal pain due to an anal fissure or hemorrhoids, and it is usually recommended after an operation for perianal abscess or fistula.³ Most healthcare professionals, including colorectal surgeons, recommend warm sitz baths to relieve perineal region pain and to promote wound healing, even though there is no rational explanation for this maneuver.⁴

Pain relief after sitz bath appears to be the result of internal anal sphincter relaxation with the resulting diminution of the rectal neck pressure. Relaxation of the internal sphincter following the warm bath postulates a relationship, but the direct action was ruled out. A neural pathway through a "thermo- sphincteric reflex" seems most likely.⁵ Furthermore, other perceived benefits could include improved anal hygiene and symptomatic relief for some patients.⁶ A thermos-sphincteric reflex with neural pathways from perianal skin receptors has been proposed because a warm sitz bath can relieve anal pain by relaxing the internal sphincter, resulting in spasm relief.⁵ The somato-anal reflex from local thermal stimulation could relax a hypertonic anal sphincter in patients with anal fissures and hemorrhoids.⁷

A literature review demonstrated a lack of sufficient scientific data to support the benefit of sitz bath used in the management of anorectal disorders. Clinical studies are still recommended to investigate whether this time-consuming recommendation is beneficial to patients. Although there are few clinical trials with high-level evidence that have evaluated the use of a sitz bath for the treatment of anorectal disorders, some have evaluated the scientific evidence for them.⁸

Salt has been an essential part of medicine for thousands of years. It was used as a remedy, a supportive treatment option, and a preventive measure. It has been prescribed in oral forms or applied topically and been administered in an exceedingly wide variety of ways. It is mentioned as an essential ingredient in medical science in some of the oldest medical scripts. The ancient Egyptian papyrus Smith recommended salt for the treatment of an infected chest wound. The belief was that salt would dry out and help disinfect the wound. The healing methods of Hippocrates (460 BC) used salt frequently. He applied a topical composite of salt and honey to clean bad ulcers. Saltwater was used externally against skin diseases and freckles. The well-known Arabian doctor and scientist Avicenna (Ibn Sina, 980-1037 A.D.) used salt in many of his recipes. He emphasized the presence of iodine and iron in coastal sea salt. It was not until spa therapy gained attention and popularity in the 19th century that its healing powers gradually began to be investigated scientifically.⁹

The antiseptic and bactericidal properties of sea salt are proved to help in the removal of plaque which is a known cause of gingivitis and dental caries. Currently, salt is increasingly utilized as a support treatment for many skin diseases. Chronically inflamed skin has been treated with medical bath salt from the dead sea or table salt. The salt is believed to peel off dandruff, reduce inflammation, pain, itching, and help in regenerating the skin. Salt baths are frequently used to treat many conditions such as psoriasis, atopic dermatitis, chronic eczema as well as arthritis.¹⁰ Sea-water baths, later on, led to salt-water baths in many regions closely associated with the acquisition of salt (salt mines, works, and springs) but it was not until 1800 that physicians from the German town

of bad Nauheim proposed a methodical salt-bath therapy. They tried to prove scientific evidence for theories regarding the healing effects of the waters. The current medical indications for salt-bath therapy rest, as a principle, on the empirical traditions of many centuries. They include the support treatment for skin diseases due to the anti-inflammatory action of salt. Patients who suffer from rheumatic conditions often experience relief from joint pain when moving about in a salt bath.¹¹

An anal fissure is considered one of the most frequent painful anal diseases in which effective clinical management is still controversial despite many systematic reviews. Its treatment options have long been discussed, and several different therapeutic modalities have been proposed. In the last few decades, the understanding of the pathophysiology resulted in a progressive reduction of many invasive and potentially invalidated treatments in favor of conservative treatment based on anal sphincter muscle relaxation. The nonresponding patients should undergo a surgical lateral internal sphincterotomy. The high risk of incontinence following such a procedure seems to be overemphasized in the past. Only carefully selected patients, without anal hypertonia, may benefit from anoplasty.¹¹

In Saudi Arabia where the religious Islamic five-time prayers during the day and night necessitate complete cleanness and are preceded by ablution (the Islamic procedure for washing certain body parts using water, in preparation for formal prayers), encounter lots of concern to patients suffering from anorectal and urology diseases. The reputation that surgical management of anal fissure in the form of lateral anal sphincterotomy and anal dilatation with the possibility to lose anal continence even for flatulence makes the surgical option a last resort to most patients. Therefore, any conservative method to treat anorectal diseases in general, and anal fissure in particular which preserves complete anal control means a lot to that group of patients. As a consequence, we experienced refusal of surgical treatment of many patients and increased use of traditional herbal methods popular in our local community, which necessitated the need for an effective conservative protocol for those groups of patients. In this paper, we aim to analyze the effectiveness of the sitz bath method as part of a conservative management protocol to treat anal fissure among Saudi Arabians who fear the surgical option for particularly religious reasons.

METHODS

A prospective cohort study of the results of 539 Saudi Arabian patients diagnosed to have acute or chronic anal fissure between January 2004 and December 2013 at Al Ansar general public health hospital, Medina, Saudi Arabia was done to evaluate the conservative protocol outcome. The study protocol was designed on a digital database file in the outpatient department as part of the quality care program in our hospital. The patients were

referred from local hospitals and primary care centers. They were seen and managed in the outpatient clinic.

Random selection regarding age and sex was made. All patients who refused the surgical option were included in the conservative protocol. All patients who choose the surgical option were excluded.

The conservative management protocol consisted of three times per day salty warm sitz bath (using 20 grams of commercial salt), 2 grams glycerin suppositories per rectum 20 minutes before defecation as lubricant and laxative, Metamucil bulk-forming fiber (a mix of one dose-sachet-within 240 milliliters (8 oz) of cold liquid) once daily after breakfast for constipation. The pain was managed with oral analgesics (paracetamol and acetaminophen) in all patients. Some patients reported occasions of intramuscular diclofenac injections at local dispensaries due to severe pain in the first week of treatment.

All the patients were followed in the outpatient clinic once every week until complete healing, then once every month for the following six months for follow-up, then once every three months for one year. Follow-up data included the status of symptoms, defecation difficulty, constipation, the effectiveness of the sitz bath, other medications, physical examination for clinical evaluation, duration of therapy until complete healing, and recurrence.

As part of the clinical pathway of our quality care program, a computerized database file was used to document all the patient's data, which were collected and analyzed. Statistical package for social science (SPSS) program (Release 22) was used for data analysis. Results were represented by absolute percentages, average, and mean.

RESULTS

The 539 Saudi Arabian patients diagnosed to have acute or chronic anal fissure between January 2004 and December 2013 were included. 386 (71.6%) were male and 153 (28.4%) were female (male to female ratio 2.5:1). The mean age was 25.68 ± 5.7 years (range 16-34 years).

The 274 patients presented in the acute form (less than six weeks) reporting the first-time attack, and 265 presented in the chronic form (more than six weeks) reporting several attacks that were treated previously by traditional herbal methods.

The majority of the patients, 407(75.5%), presented with posterior midline locations (6 O'clock), while 96 (17.8%) presented with anterior midline locations (12 O'clock). 24(4.5%) presented with both anterior and posterior locations. The 12 (2.2%) presented with an atypical location (Table 1).

Table 1: Location of the anal fissure in the study sample patients.

Location	Male	Female	Total (%)
Posterior midline	292	115	407 (75.5)
Anterior midline	73	23	96 (17.8)
Both anterior and posterior	13	11	24 (4.5)
Atypical	8	4	12 (2.2)
Total	386	153	539 (100)

Anal pain and post defecation rectal bleeding were the most common presenting complaints reported by all patients (100%). Also, 358 (66.4%) patients reported prolonged burning anal sensation, and 193 (35.8%) patients complained of recurrent anal itching. All patients (100%) reported having chronic constipation for years before the onset of symptoms which was treated by diet modification, laxatives, herbals, and fleet enemas. While 358 (66.4%) reported a chronic habit to strain during defecation. Seven (1.3%) female patients reported developing the symptoms after normal delivery of uncomplicated pregnancy (Figure 1).

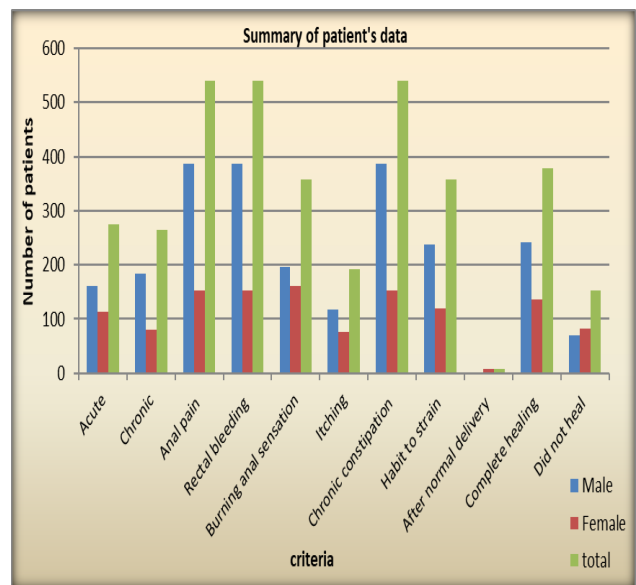


Figure 1: Summary of the patient's data and results.

All patients responded well to the management of constipation, in the majority, a soft, bulky stool was reported while few had bouts of diarrhea which necessitated modification of diet and laxative frequency of use.

The 397 (73.7%) patients had complete healing after the conservative treatment. 285 (71.8%) were males while 112 (28.2%) were females. The mean duration of treatment until complete healing was 3.5 weeks, range 2-5. While 142 (26.3%) patients did not heal despite treatment for more than 8 weeks and required surgical intervention, 101 (71.1%) were males while 41 (28.9%) were females (Figure 2).

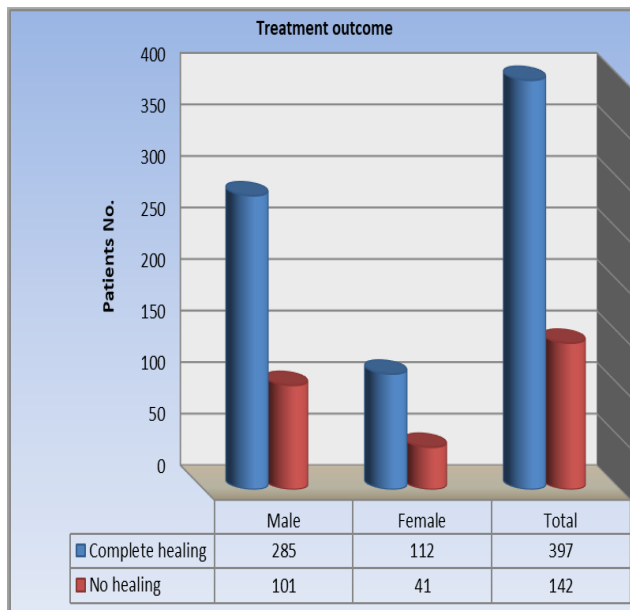


Figure 2: Treatment outcome data.

In the healing group, anal pain was the first responding factor to the conservative treatment. It subsided in all the patients within 4-6 days, followed by the anal burning sensation within 10-12 days, followed by bleeding within 14-17 days, while itching took more than 20-24 days to subside.

In the other group who did not heal, an alternating condition of no pain for days then a recurrence of pain was the leading cause of the patient's request to go for surgery. Bleeding, itching and burning sensations were of little concern to the patients. Lateral anal sphincterotomy and dilatation were performed on all of them.

The recurrence rate was 0% in both groups after two years of follow-up.

DISCUSSION

An anal fissure is known as a linear ulcer of the anoderm, located distal to the dentate line, generally situated in the posterior midline.¹² It is a very painful condition because it directly affects the anoderm multilayer squamous epithelium, which is very richly innervated with pain fibers. During the process of defecation, the lesion is stretched with consequent painful symptomatology, which can persist for a certain amount of time and be accompanied by some bleeding.¹³ The pain can be very intense to induce the patient to avoid defecation with consequent hardening of the feces and exacerbation of the problem.¹⁴ Anal fissures are considered acute if they have been persistent for less than six weeks, superficial, and have well-demarcated edges. They are deemed to be chronic, instead, if they have been present for more than six weeks, have keratinous edges, associated with a sentinel node and hypertrophied anal papillae, and if the fibers of the internal anal sphincter are visible.¹⁵

Primary anal fissures are not caused by an underlying chronic disease while secondary anal fissures are associated with other illnesses, such as chronic inflammatory intestinal diseases, syphilis, tuberculosis, human immunodeficiency virus, and certain neoplasms. Primary anal fissures are most frequent in young adults of both sexes. In 80-90% of the cases, they are located in the posterior midline and rarely in the anterior region. Any associated pathologies should be suspected if there are anal fissures in other areas than the posterior region. Anterior lesions are reported more frequently in women than in men.¹¹ The mean age in our study population was 25.68 ± 5.7 years (range 16-34), and the male to female ratio 2.5:1, which is in agreement with the reported international figures.

Contrary to ancient teaching, a causative history of constipation is found solely in an exceedingly little share of patients (approximately 20%). The hypertonia of the internal anal sphincter observed in patients with an anal fissure has long been thought to be a secondary development, occurring after mucosal local trauma by, for example, the passage of hard feces. Consequently, a subsequent sphincter spasm then leads to further constipation and so a vicious cycle is created. Traditional treatment (anal dilatation and internal sphincterotomy) aims to break this cycle by disrupting the internal anal sphincter.¹⁶ In our study, chronic constipation was reported by all patients (100%), and all acknowledged developing severe anal pain following forceful effort to defecate (straining). In fact, during 20 years of practice, we found that constipation is a common complaint of most of our patients, even those presenting with diseases other than colorectal.

Improving dietary consumption and defecation habits is a good long-term strategy for reducing gastrointestinal problems. Therefore, patients with anal fissures are advised to increase the number of liquids and fiber supplements. Bulk-forming emollient laxatives are recommended along with the frequent use of warm sitz baths. The amount of fiber supplements should be increased gradually to avoid problems of flatulence.¹¹ Conservative treatment can provide a cure for 87% of the cases of acute anal fissures, while this figure is about 50% in the chronic forms.¹⁷

The primary goal of the medical treatment for chronic anal fissure is to achieve a temporary reduction of pressure of the anal canal, to facilitate the healing of the fissure ("reversible sphincterotomy"), thereby reducing muscle tone. Various mechanisms can be used: direct depletion of intracellular calcium, stimulation of muscarinic receptors, inhibition of alpha-adrenergic receptors, or stimulation of beta-adrenergic receptors. In most of the recent therapeutic guidelines, topical calcium channel blockers and topical nitrates are included among the pharmacological therapy options.¹²

Surgery should be reserved for those cases in which other non-surgical therapies fail. The most recent trials suggest that it appears to be important that the medical treatment is extended to at least six weeks before it is considered a failed method. The patient has to be informed of the risk of fecal incontinence. It should always be discussed when obtaining the informed consent of the patient.¹⁸ Lateral internal sphincterotomy is performed with an open or closed technique. It involves an incision of the internal sphincter, more or less extended, distal to the dentate line, with the possible excision of the sentinel node and the hypertrophied papillae.¹⁹ The cure rate after lateral internal sphincterotomy is higher than 90%. Postoperative complications may include bleeding, hematoma, fistulas, and abscess. Lateral internal sphincterotomy often achieves efficacy rates higher than those of non-surgical therapy but is associated with an increased risk of minor fecal incontinence after surgery (approximately 10%). Therefore, extreme prudence is recommended in considering lateral internal sphincterotomy for high-risk patients, such as the elderly, multiparous women, patients with previous biliopancreatic bypass for obesity, and patients with previous proctologic surgery.¹¹

Bulk-forming laxative psyllium seed (Metamucil) is a natural fiber that primarily exerts its laxative effect by absorbing water and increasing fecal mass. This laxative is reported to be highly effective in softening the consistency of stool and increasing the frequency with minimum side effects.²⁰ Most of our patients reported a satisfactory result regarding the effect of Metamucil, particularly in stool softening. The reported prompt response to Metamucil therapy was surprisingly within one to three days (mean 1.5 days). We encouraged our patients to increase fiber supplementation gradually and in conjunction with the adequate fluid intake (six to ten glasses daily) and increase in daily activity to avoid constipation. For the treatment of defecatory dysfunction, we advised our patients to use glycerin suppositories since suppositories can be effective in liquefying stool and thereby overcome obstructive defecation. It was a keystone in our protocol, and all patients reported a significant change in defecation habits after the use of glycerin suppositories, despite initial painful insertion.

A high level of satisfaction regarding sitz bath was reported by all patients. Pain relief was the major factor. Also, a decrease in anal tension and burning sensation was notably reported. In addition, it was reported as good hygienic, pleasant, relaxing, and easy to do. A change in personal hygiene level was noticed in all patients, most of them reported developing a regular habit of whole-body washes after each sitz bath session. In our study, most of the patients reported immediate pain relief following sitz bath sessions. While others reported feeling numbness at the perianal area during and after the sitz bath sessions, an observation that we cannot explain scientifically, but can attribute to the analgesic effect of hydrotherapy

reported by different medical fields, especially rehabilitation centers.

The high rate of healing and relatively short duration of response and treatments was a satisfying, surprising result for us. Our treatment protocol had changed to the initial conservative treatment of all anal fissure cases. We believe many centers around the world will soon adopt a similar approach, and we hope that the observations and results of this study will help in directing the management of anal fissure towards conservative methods as much as possible. Given our results and observations, we recommend further scientific evidence-based studies to be conducted to clarify and prove the efficacy of the sitz bath method in the conservative treatment of anal fissure.

The fact that our study was conducted on an outpatient sample, close monitoring of patient's adherence to diet modification represented a limitation to the study, particularly in the patient's group who did not heal taking into consideration the high fat, low fiber diet habit of the Saudi Arabian population.

CONCLUSION

We conclude that sitz bath as part of a conservative management protocol to treat anal fissure showed a promising result which was a significant benefit to patients who were reluctant to undergo lateral anal sphincterotomy and dilatation because of the fear to lose anal control. We recommend further specialized studies to investigate the role of sitz bath in the conservative management of anal fissure.

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