



The Approach of Traditional Persian Medicine to Treatment of Anal Fissure

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Abstract

The common disorder of anal fissure is a painful linear crack in lining of anus. So-called *Shiqaq-e-maghad* in Persian medical manuscripts has different etiologically-oriented therapies. The aim of this study was to describe the therapeutic guideline for anal fissure in Persian Medicine. Six manuscripts including *al-Hawi fi al-Tibb*, *Qanun fi-Tibb*, *Qarabadin Kabir*, *Tibb Akbari*, *Makhzan-al-Adviah* and *Exir-e Azam* were searched using the keyword of *Shiqaq-e-maghad*. Although the exact etiology of anal fissure is still uncertain, it has been suggested that a local trauma may cause spasm in internal sphincter of anus leading to a local ischemia and anal fissure. Based on traditional viewpoint, dystemperament, defecation problem, hemorrhoid, inflammation, fullness of veins, and trauma are reasons of anal fissure needing four types of medication including anti-inflammatory drugs, emollients, wound healing agents, and selective remedies. Considering neglected points of traditional outlook will broaden the paths to cure anal fisher.

Keywords: Anal fissure; Persian Medicine; Guideline

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Introduction

Anal fissure is a common disorder that has been widely discussed in Persian Medicine (PM) [1]. This painful ischemic ulcer, occurring in lining of anus, has been called “*Shiqaq-e-maghad*” in PM [2-4]. The incidence of anal fissure is equal in both genders [5]. About 20% of people experience this disorder at least once in their life, but it is not common after 65 years of age. [1,2]. A diagnostic criterion for anal fissure is performed by manometer measuring the increased anal rest pressure due to malformation of dentate line and incompatible anal spasms [5,6]. Each year, 235000 new cases of acute anal fissure are diagnosed in the US and 40% of them become chronic [7]. It is assumed that the spasm of internal anal sphincter has a key role to initiate patient complications [8]. But it is unclear whether the spasm has a pathogenic role to induce anal fissure or it is just a response to local pain and traumas [9]. Actually, a non-healing vicious cycle of pain, spasm and ischemia occurs. In spite of these findings, only 25% of patients with chronic anal fissure have constipation. Besides, diarrhea is the initiating factor in 6% of patients. Some other risk factors of anal fissure are sexual abuse, microtrauma of anus in mountain bikers and bariatric surgery in obese patients [7]. The most usual clinical signs are anal pain and bleeding particularly during defecation spasms. Feeling pain may be for a short time or it may be continued for hours [5,6]. The American Society of Colon and Rectal Surgeons guideline suggests a nonsurgical management of anal fissure at

first step [10]. The conservative treatment for anal fissure includes supplementary fibers, NSAIDs, and *sitz bath* of warm water to alleviate pain and spasm [11]. But many patients fail conservative treatment and require further managements [10]. Conventional medications for anal fissure are nitrates, calcium channel blockers, local anesthetics and steroids, Minoxidil and Botulinum Toxin A [11,12]. Moreover, herbal remedies are prescribed for anal fissure, for example an herbal anti-fissure topical remedy compounded of extracts of *Matricaria chamomilla* and *Quercus infectoria* in base of sesame oil has been marketed [13]. Drug medication of anal fissure is a challenge, and the recurrence rate after healing is high. Surgical treatment like lateral internal sphincterotomy has been the most effective procedure which has the healing rate of 95% and recurrence rate of 1% to 3%, but patients suffer from complications such as hematoma, ecchymosis, postsurgical secondary infection, pain, abscess, fistula, and long hospitalization [1,14]. Lifestyle modifications, manual procedures, and herbal therapies have been suggested in PM for anal fissure [1]. The aim of this study was to describe the therapeutic PM guideline for anal fissure.

Methods

Six PM manuscripts (from 9th to 19th century) including *al-Hawi fi al-Tibb*, *Qanun fi-Tibb*, *Qarabadin Kabir*, *Tibb Akbari*, *Makhzan-al-Adviah* and *Exir-e Azam* were selected to consider the etiology and treatment of anal

fissure [4,15,16-19]. Furthermore, related medical and pharmacological studies were searched on current scientific databases including PubMed, Scopus and Google scholar.

Results

Description of anal fissure in PM

Anal fissure is a kind of crack in anus because of dystemperament, defecation problems, hemorrhoids, inflammation, fullness of anal vessels, and physical traumas like in horse riders. This classification offers a kind of personalized therapy approach according to medical history of each patient. Furthermore, some remedies have been suggested for pain and bleeding [4,17,19]. Etiology, symptoms and therapies for

each type of fissure are demonstrated in figure 1.

Lifestyle modification

Six principles of health in PM (air, eating & drinking, sleeping & wakefulness, motion & rest, retention & evacuation, and psychological balance) should be considered and corrected for patients [20]. To prevent constipation, chewing food well and avoiding to eat simultaneously different types of food are advised. Eating during nervousness and drinking cold water are disadvantageous for anal fissure. Moreover, astringent, sour, and constipating foods should be limited [4,17,19,21,22]. It is preferable to add poultry fat or camel hump fat to their food. Simple salty cabbage soup and half-cooked egg yolk are suggested before main meals. Coconut, sweat almond and sugar

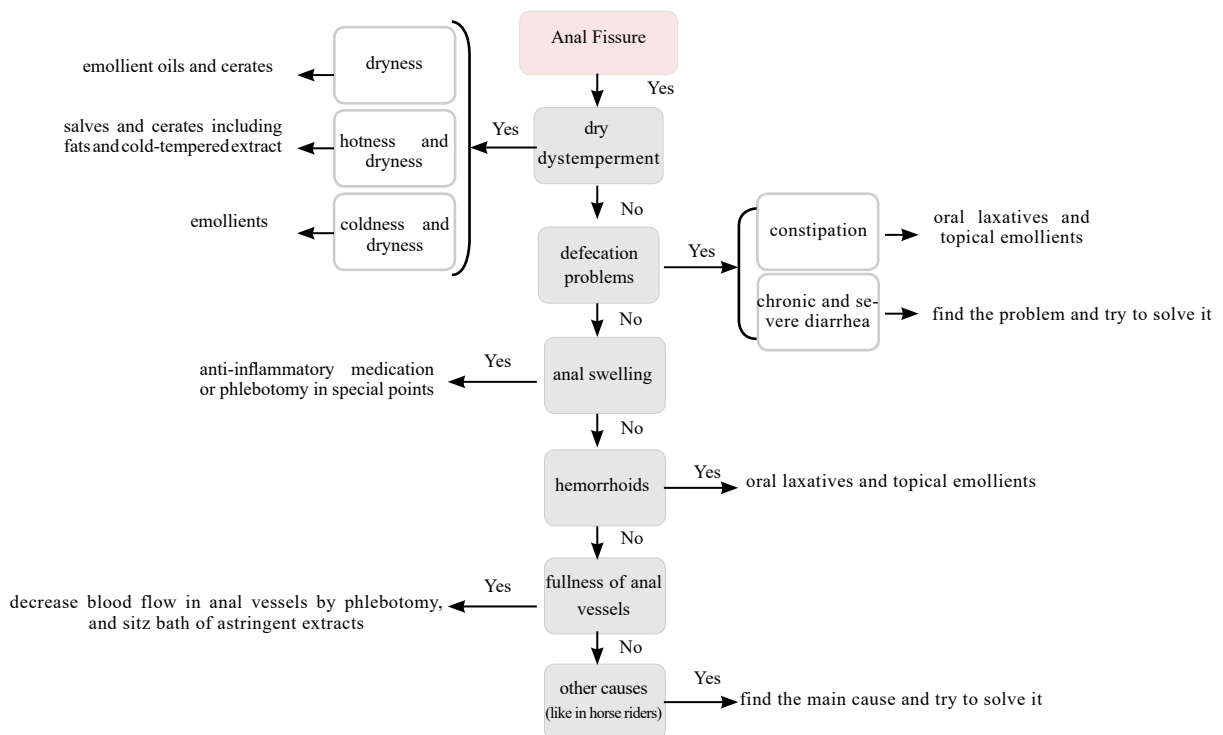


Figure 1: PM guideline for management of anal fissure

are beneficial to patients [4]. Warm water *sitz bath* and rubbing oil on special parts of the body (navel, testes, and breasts) improve the condition. A soft and comfortable place for sitting is advisable [1,4].

Drug therapy

Avicenna has cited four classes of drugs to treat anal fissure. He indicates some medicaments as follows:

- Wound healing agents (*Modamil*) like *Quercus brantii* soaked in diluted wine, gum tragacanth (*Astragalus tragacantha*) and starch
- Laxatives (*Molayin*) like animal fats, oils and mucilage

c) Anti-inflammatory (*Moalejat-al-owram*) drugs
 d) Selective anti-fissure drugs (*Zo-al-khasiat*) like the compound of starch, ash of shell and olive leaf [4].

Some medicinal plants are reported as options for treatment of anal fissure in PM like onion (*Allium cepa* L.), marshmallow (*Althaea officinalis* L.), wormwood (*Artemisia absinthium* L.), guggul (*Commiphora mukul* Hook. ex Stocks), dragon's blood (*Dracaena cinnabari* Balf.f.), yolk (*Hen egg yolk*), high mallow (*Malva sylvestris* L.), fenugreek (*Trigonella foenum-graecum* L.) and chasteberry (*Vitex agnus-castus* L.) [1]. Most prescribed herbal ingredients in topical formulations of anal fissure in PM are listed in table 1 [4,15-19].

Table 1: Most prescribed herbal ingredients in topical formulations for anal fissure treatment

| PM category | Herbal ingredient | Scientific name | Plant family | Traditional name | Approved biological effects | Ref. |
|---|--------------------|---|--------------|--------------------------------|---|---------|
| a) Wound healing (<i>Modamil</i>) | Gum tragacanth | <i>Astragalus tragacantha</i> L. | Fabaceae | <i>Kathira</i> | Wound healing | [23] |
| | Starch | <i>Triticum aestivum</i> L. | Poaceae | <i>Nasha (Neshasteh)</i> | Excipient | [24] |
| | Acacia gum | <i>Acacia arabica</i> (Lam.) Willd. | Fabaceae | <i>Aghaghia</i> | Accelerate wound healing | [25] |
| b) Emollient (<i>Molayin</i>) | Sweet violate oil | <i>Viola odorata</i> L. | Violaceae | <i>Roghan-e-banafsheh</i> | Analgesic, anti-inflammatory | [26] |
| | Apricot kernel oil | <i>Prunus armeniaca</i> L. | Rosaceae | <i>Roghan-e-haste-zardalou</i> | Emollient | [27] |
| c) Anti-inflammatory (<i>Moalejat-al-owram</i>) | Henna leaf | <i>Lawsonia alba</i> Lam. | Lythraceae | <i>Hana</i> | Anti-inflammatory, analgesic, wound healing | [28,29] |
| | Rose oil | <i>Rosa damascena</i> Herrm. | Rosaceae | <i>Roghan-e-gol</i> | Anti-inflammatory, analgesic | [30,31] |
| | Mukul | <i>Commiphora mukul</i> (Hook. ex Stocks) Engl. | Burseraceae | <i>Moghl</i> | Anti-inflammatory | [32] |
| | Myrrh | <i>Commiphora myrrha</i> (Nees) Engl. | Burseraceae | <i>Morr</i> | Anti-inflammatory, analgesic | [33] |
| | Frankincence | <i>Boswellia</i> spp. | Burseraceae | <i>Kondor</i> | Anti-inflammatory | [34] |
| d) Others (<i>Zo-al-khasiat</i>) | Dry wallflower | <i>Eryzimum cheiri</i> (L.) Crantz | Brassicaceae | <i>Gol-e-cheiri</i> | Local anti-ischemic agent, wound healing, anti-inflammatory | [35] |

Also, more than 40 multi-ingredient formulations (oral, topical, sitz bath, and fumigation) are prescribed in al-Hawi and Qanon of medicine for treatment of anal fissure [1]. According to our hypothesis, among PM suggestions for anal fissure, wallflower preparations which contain cardiotoxic steroids, isothiocyanates and flavonoids have a potential to be examined for anal fissure treatment in the future [35,36]. Local indication of low-dose cardiotoxic steroids could have stimulatory effects on Na⁺/K⁺ ATPase pump which leads to acceleration of wound healing and removing ischemia from the tissue [35]. Also, cardiac glycosides are considered to have anti-inflammatory properties [37]. Wallflower isothiocyanates could have tissue protective effects and its flavonoids have analgesic, anti-inflammatory and wound healing properties [35].

Manual manipulations

Generally, manual interventions are not recommended as first-step for anal fissure but cases need phlebotomy to resolve their humoral imbalance [1,4,17,19].

Conclusion

Healing of chronic anal fissure is a challenge for current medicine. Conservative measures for anal fissure have been suggested in both traditional and conventional medicines. According to conventional system of medicine, Botox and calcium channel blockers have been extensively reported to be effective in patients. Today, partial lateral internal sphincterotomy is

the surgical intervention as the most effective treatment, but with the risk of anal incontinence [38]. These findings reveal that there is an urgent need for discovering new drug candidates to be evaluated for anal fissure treatment. PM has introduced four main categories of preparations including wound healing agents, laxatives, anti-inflammatory drugs, and selective anti-fissure drugs. According to this study, PM has introduced a guideline for anal fissure treatment, and suggestions for clinical researchers who wish to find effective natural products for anal fissure.

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Conflicts of Interest

None.

References

- [1] Derakhshan AR. Natural treatments for fissure in ano used by traditional Persian scholars, Razi (Rhazes) and Ibn Sina (Avicenna). *J Evid Based Complementary Altern Med* 2017;22:324-333.
- [2] Beaty JS, Shashidharan M. Anal fissure. *Clin Colon Rectal Surg* 2016;29:30-37.
- [3] Madalinski M, Kalinowski L. Novel options for the pharmacological treatment of chronic anal fissure-role of botulin toxin. *Curr Clin Pharmacol* 2009;4:47-52.
- [4] Avicenna H. *The Canon*. Soroush Press. Tehran 2008.
- [5] Kasper DL. *Harrison's Principles of Internal Medicine*. McGraw-Hill Professional. New York 2015.
- [6] Santander C, Gisbert JP, Moreno-Otero R, McNicholl AG, Maté J. Usefulness of manometry to select patients with anal fissure for controlled anal dilatation. *Rev Esp Enferm Dig* 2010;102:691-697.
- [7] Madalinski MH. Identifying the best therapy for chronic anal fissure. *World J Gastrointest Pharmacol Ther*.

- 2011;2:9-16.
- [8] Lund JN. Nitric oxide deficiency in the internal anal sphincter of patients with chronic anal fissure. *Int J Colorectal Dis.* 2006;21:673-675.
- [9] Büyükyavuz BI, Savaş C, Duman L. Efficacy of lanolin and bovine type I collagen in the treatment of childhood anal fissures: a prospective, randomized, controlled clinical trial. *Surg Today* 2010;40:752-756.
- [10] Brady JT, Althans AR, Neupane R, Dosokey EMG, Jabir MA, Reynolds HL, Steele SR, Stein SL. Treatment for anal fissure: Is there a safe option? *Am J Surg* 2017;214:623-628.
- [11] Etzioni DA. Current management of anal fissure. *Semin Colon Rectal Surg* 2011;22:2-8.
- [12] Nelson RL, Thomas K, Morgan J, Jones A. Nonsurgical therapy for anal fissure. *Cochrane Database Syst Rev* 2012;15:1-136.
- [13] Antifissure Cream. Available from: <http://www.barijessence.com> (accessed 2016).
- [14] Minguez M, Herreros B, Benages A. Chronic anal fissure. *Curr Treat Options Gastroenterol* 2003;6:257-262.
- [15] Razi M. Al-Havi. *Dare Ehia Attorath Al Arabi*. Beirut 2001.
- [16] Aghili MH. *Qarabadin-eKabir*. Research Institute for Islamic and Complementary Medicine. Tehran 2007.
- [17] Shah-Arzani MA. *Tibb-e Akbari*. Jalaloddin Press. Qom 2007.
- [18] Aghili MH. *Makhzan-ol Advia*. Tehran University of Medical Sciences. Tehran 2009.
- [19] Nazem Jahan M. *Eksire-e Azam*. Institute of Historical Studies, Islamic and Complementary Medicine. Tehran 2008.
- [20] Parvizi MM, Nimrouzi M, Bagheri Lankarani K, Emami Alorizi SM, Hajimonfarednejad M. Health recommendations for the elderly in the viewpoint of traditional Persian medicine. *Shiraz E-Med J* 2018;19:e14201.
- [21] Nimrouzi M, Zare M. Principles of nutrition in Islamic and traditional Persian medicine. *J Evid Based Complement Altern Med* 2014;19:267-270.
- [22] Prasad V, Dorle AK. Evaluation of Ghee based formulation for wound healing activity. *J Ethnopharmacol* 2006;107:38-47.
- [23] Ghayempour S, Montazer M, Mahmoudi Rad M. Encapsulation of *Aloe vera* extract into natural tragacanth gum as a novel green wound healing product. *Int J Biol Macromol* 2016;93:344-349.
- [24] Marku D, Wahlgren M, Rayner M, Sjö M, Timgren A. Characterization of starch pickering emulsions for potential applications in topical formulations. *Int J Pharm* 2012;428:1-7.
- [25] Ghodela NK, Prasad P, Kumar V, Dudhamal T. Wound healing potential of gums & oleo-gum-resins: a brief review. *Global J Res Med Plants & Indigen Med* 2017;6:89-94.
- [26] Feyzabadi Z, Jafari F, Kamali SH, Ashayeri H, Badi-ee Aval S, Esfahani MM. Efficacy of *Viola odorata* in treatment of chronic insomnia. *Iran Red Crescent Med J* 2014;16:e17511.
- [27] Singh R, Gupta A, Joshi D, Nainwal N. Wild apricot (*Prunus armeniaca*) kernel oil: a strategic alternative to value added fatty acids. *Int J Essen Oil Ther* 2010;4:1-5.
- [28] Ali BH, Bashir AK, Tanira MO. Anti-inflammatory, antipyretic, and analgesic effects of *Lawsonia inermis* L. (henna) in rats. *Pharmacology* 1995;51:356-363.
- [29] Nayak BS, Isitor G, Davis EM, Pillai GK. The evidence based wound healing activity of *Lawsonia inermis* Linn. *Phytother Res* 2007;21:827-831.
- [30] Parmar NS, Parmar S. Anti-ulcer potential of flavonoids. *Indian J Physiol Pharmacol* 1998;42:343-351.
- [31] Shirazi M, Mohebitabar S, Bioos S, Yekaninejad MS, Rahimi R, Shahpiri Z. The effect of topical *Rosa damascena* (rose) oil on pregnancy-related low back pain: a randomized controlled clinical trial. *J Evid Based Complementary Altern Med* 2017; 22:120-126.
- [32] Francis JA, Raja SN, Nair MG. Bioactive terpenoids and guggulosteroids from *Commiphora mukul* gum resin of potential anti-inflammatory interest. *Chem Biodivers* 2004;1:1842-1853.
- [33] Su S, Wang T, Duan JA, Zhou W, Hua YQ, Tang YP, et al. Anti-inflammatory and analgesic activity of different extracts of *Commiphora myrrha*. *J Ethnopharmacol* 2011;134:251-258.
- [34] Banno N, Akihisa T, Yasukawa K, Tokuda H, Tabata K, Nakamura Y. Anti-inflammatory activities of the triterpene acids from the resin of *Boswellia carteri*. *J Ethnopharmacol* 2006;107:249-253.
- [35] Mosleh G, Badr P, Abolhassanzadeh Z, Hosseini SV, Mohagheghzadeh A, Azadi A. Potential effects and mechanisms of action of topical wallflower (*Erysimum cheiri* (L.) Cranz) administration in anal fissure. *Res J Pharmacogn* 2019;6:62-63
- [36] Mosleh G, Badr P, Azadi A, Abolhassanzadeh Z, Hosseini SV, Mohagheghzadeh A. Wallflower (*Erysimum cheiri* (L.) Crantz) from past to future. *Res J Pharmacogn In press*.
- [37] Fürst R, Zündorf I, Dingermann T. New knowledge about old drugs: the anti-inflammatory properties of cardiac glycosides. *Planta Med* 2017;83:977-984.
- [38] Nelson RL, Manuel D, Gumienny C, Spencer B, Patel K, Schmitt K. A systematic review and meta-analysis of the treatment of anal fissure. *Tech Coloproctol.* 2017;21:605-625.