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Tracing Surgical Management of Fistula in Ano (Nasoore-E-Maqad) in Unani Medicine

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1. Abstract

The fistula in ano is one of the most challenging issues and is always a struggle for surgeons to handle. Hippocrates not only defined the pathophysiology, clinical manifestations and management of Fistula in Ano, but also clarified the object of the procedure, which is to obliterate the fistula tract without effecting the continence. There are a lot of shocking and impressive developments made after Hippocrates by the Unani scholar mostly by al-Razi, the great Unani surgeon Abulqasim Al-Zahrawi and Ibn Sina. In addition of using Setons, they mentioned many other surgical techniques for perianal fistula management such as Amal-e-Kharam, Fistulotomy and Fistulectomy and Cauterizations, etc. Because no particular treatment is appropriate for any form of fistula, it must be performed according to the clinical indications, the circumstances of the patient, the degree of involvement of the anal sphincters and the experiences of the surgeon, etc. The most modern and innovative methods for the management of perianal fistulae are in practice since a few centuries but the underlying concept remains unchanged i.e. the fistulous track is removed without hampering the continence. The paper presents detailed review of the classical techniques described by renowned Unani scholar for the management of perianal fistulae and the basic fundamentals of the management of fistula in ano stated in the Unani literature which are still practiced.

2. Introduction

Fistula is a Latin word which means an abnormal pipe or tube-like passage from a normal cavity or tube to a free surface or to another cavity [1]. The fistula in ano is defined as a track lined by granulation tissue that connects deeply is the anal canal or the rectum and superficially on the skin around the anus [2]. The documented

medical history observes that Hippocrates (460-370 BC) was aware of anorectal fistulae, and he attempted to interpret their mechanism of origin. He tried to treat them either in a conservative manner using laxative and purgative medicines, or surgically through an anoscope. He had understood very well the value of the surgical option which is now a regular choice. In fact, there are a number of operations aimed primarily at reducing the risk of recurrence and incontinence [3].

The Unani scholar Abu al-Hasan Ali ibn Sahl Rabban al-Tabari, Abu Bakr Muhammad ibn Zakariyya al-Razi (Rhazes or Rasis), Abu al-Qasim Khalaf ibn al-Abbas al-Zahrawi (Albucasis), Ibn Sina (Avicenna), Ali ibn al-Abbas al-Majusi, Zayn al-Din Sayyed Ismail ibn Husayn Gorgani, Ali bin Hubl Baghdadi, Najib ad-Din Abu Hamid Muhammad ibn Ali ibn Umar Samarqandi, Amin-ad-Daula Abu-l-Farag ibn Yaqub ibn Isḥaq Ibn al-Quff al- Maseehi, Hakim Akbar Arzani, Hakim Mohammad Azam Khan, Hakim Mohammad Ajmal Khan, Hakim Ghulam Jeelani and Hakim Mohammad Hasan Qurshi practiced a variety of methods to treat fistulae [4-10, 13-18, 26].

Literature of Unani system of medicine states that the fistula in ano is formed after a perianal abscess in the relation to the rectum and the anal canal has busted spontaneously with incomplete healing. It is deep and wide inside towards anal canal but its mouth or external opening is narrow. It is filled with white hard tissue which is called bad tissue. Mostly this perianal abscess is converted into fistula in ano [4, 5, 6, 7, 8].

3. Etiopathogenesis

The etiopathogenesis of the fistula in ano is described by the renowned Unani physician Abu al-Hasan Ali ibn Sahl Rabban al-Tabari in his famous book "Firdous al-Hikmah (Paradise of wisdom)", that waste materials come to the perianal area and develop the perianal inflammation. If these waste materials are hot (ha'ar) in Mizaj then inflammation will be hot (ha'ar) and cold (barid) then inflammation will be cold (barid) in Mizaj. Sometimes, the waste materials that come to perianal area is very hot then it will develop the ulcer at the edges of anal area. The fistula is also developed due to the waste materials that deposit layer by layer in anal area and develop putrefaction. Here, severe burning sensation is produced [9].

According to Hakeem Khajandi that the most common cause of fistula in ano is perianal abscess. The perianal tissues are damaged and changed into fistula due to delay in incision and drainage of abscess [4].

According to the Ibn Sina who wrote in his famous book Alqanoon fit-Tib (The Canon of Medicine) that the fistula in ano is developed due to perianal abscess and after surgery. It can be developed by hemorrhoids and fssure in ano also [4, 6, 7, 8, 10].

According to the Najib ad-Din Abu Hamid Muhammad ibn Ali ibn Umar Samarq and i wrote in his book Moalejat Sharah Asbab that the fistula in ano is developed from perianal abscess. When this abscess is not excised with due time and it does not heal with proper management then infection increases progressively and damage adjacent structures. It runs deeply and forms of a tract. This tract is changed into the fistula [6].

The accepted hypothesis as crypto glandular theory of perianal sepsis and fistula is in accordance with the observations of the Unani concepts of the formation fistula [11, 12].

The another causes of the fistula in ano are dysentery or diarrhoea, rectal inflammations, excessive non vegetarian diet, alcohol and use of extreme spicy foods, etc., that are described by Hakim Mohammad Hasan Qurshi in his book Jame-ul-Hikmat [8] and the renowned Indian Unani physician Hakim Mohammad Ajmal Khan in his famous book "Haziq" [13].

4. Clinical Features

The fistula in ano are acute and chronic. Acute is soft and chronic is hard fistulae.10 One or more opening of fistula present at anal edges, from which mostly exudes yellowish or serosanguineous fluid, pus or tainted substances all the time, but sometimes faces excretes from the opening of fistula in ano at the time of defecation or when compressed the opening area exudes serosanguineous fluid or pus. It is associated with pain because the collection of nerves in the area is more and burning sensation is also present at the time of defecation. The treatment and cure of the disease is very difficult [4, 5, 6, 7, 8, 13, 14, 15].

5. Classification of Fistula in Ano

The fistula in ano is commonly divided into three types in Unani system of Medicine: [8, 13]

5.1. Nasoore Ghair Nafiz

It is not a real form of fistula in ano because it is a blind track which has only an external opening without an internal opening. It is an easily managed and now referred to as "Sinus". In the earlier age, because of its related presentations such as opening and discharge etc., included in the category of fistula [4, 5, 6, 7, 8, 10, 13, 16, 17].

5.2. Nasoore Nafiz

This is the real form of fistula in ano as both external and internal openings are connected. It is very bad form of fistula in ano [4, 5, 6, 7, 8, 10, 13, 16, 17]. It is further classified into two groups: One form of fistula is near to anal opening. In the second form the fistula is far away from anal opening [4, 10].

According to Mohammad Hasan Qurshi and Hakim Ajmal Khan that one more form of fistula that the internal opening is present but external opening absent. It is more dangerous form of all forms of fistula [8, 13].

6. Differentiation Between the Nafiz (Sinus) and Ghair Nafiz Nawaseer (Fistula) Stated in The System of Unani Medicine

Patient is asked to lie on the examination table in Lithotomy position, after syringing and cleaning with arq gulab (Rosa damascus) [18], a blunt malleable probe (which is made by iron, copper, tin or stannum etc.) is inserted with one hand into the external opening and gently pushed inside to its tract, at the same time, the index finger of the other hand is inserted into the anal canal at the intended location of the internal opening to feel the tip of probe. If the probe tip is felt then it is a case of Nasoore Nafiz (Fistula). If the tip of the malleable probe does not reach the investigating finger and there is a feeling of mucosal or muscular layer in between the finger and the probe then it is a case of Sinus (Ghair Nafiz).

There is another clinical method of differentiation between the sinus and fistula that is mentioned in Unani literature. This method is especially used when the fistulous tract is too narrow to use malleable probe. The patient is told to lie in the lithotomy position to perform this examination. The anal canal is tightly packed with cotton, cloths and patient's hand to avoid leakage of gasses and faecal matter during the examination, then examiner puts his finger on the external opening. Now the patient is told to hold the breath and strain as during the defecation, is carefully examined for any gas or faecal leakage, if so, the tract is considered to be connected to anus or rectum with an internal opening and should be considered as fistula in ano. If there is no any gas or faecal leakage then it will be sinus. Mostly fistula in ano has one opening but sometimes it has multiple openings [4, 5, 6, 7, 14, 17].

There is another clinical method of differentiation between the sinus and fistula that is mentioned in Unani literature. A funnel's tube puts on the external opening of fistula. Some smoke is reached through funnel. If the patient feels hotness in the anal canal or rectum. It is a fistula or he does not feel hotness, is a sinus [7, 27].

7. Differentiation Between the High Anal and Low Anal Fistulae in The System of Unani Medicine

If the fistula diagnosis is confirmed, the examination can further differentiate between the high anal and low anal fistula. For this purpose, a fine malleable probe is inserted through the external opening and is gently pushed inside to and now the patient is asked to contract anus as it is done during the holding of faeces and urine. Now the probe is further pierced and felts gripping of probe by muscles that means its internal opening is near to inner edge of muscle. So, this fistula is tied and if muscle does not grip the probe and probe remains outside the grip of the muscle then it will not be tied because it will do more damage and its recovery is irreversible [10, 16].

8. Managements of Fistula in Ano in the Unani System of Medicine

According to Al-Zahrawi who wrote in his famous book Jarahiyate Zahrawi that the physician should not worry about fistula in ano because it would not be cured. But sometimes it may be cured in some people [14].

9. Medicinal Management

9.1. Per Orally

1. 1.Some physicians advise to make fine powder of Post Beekh Kibr (Capparis spinosa) 2-part, Sa'atar (Zataria multiflora) 1-part and administer five-gram orally.
2. 2.Majoon Ushaba 5g is also beneficial in fistula.

9.2. Local Application

According to Gilani that

1. 1.Brge Neeb (Melia azadirachta) 1 part, Aab ahak nadeeda (Iron) ½ part or less make fine, add Abe Brge Neeb (Melia azadirachta) and fill in the fistula. It is more beneficial.
2. 2.Maghaz Narjeel Daryai (Lodoicea maldivica) is grinded like sandal (Santalum album) in Loab Dahan and apply as tila (ointment).
3. 3.Murdar sang (Mono oxide of lead), Gulnar (Punica granatum), Zard Chob (Curcuma longa) Damul akhwain (Dracaena ombet), Shab yamani (Alum), Shakhe gozan sokhta (Herts horn), Mom safaid (Wax) 10g each and roghan Zaitoon (Olea europaea) 40g to make paste and apply this paste on wound.
4. 4.Surma (Antimonium nigram), Sindoor (Oxide of red lead) each and every 7 grams, Seemab (Mercury), Shangraf (Red sulphide of mercury), Mom (Wax) each and every 3 grams, Neela Thotha biryan (Copper sulphate) 3.5 grams, roghan Kunjud (Sesamum indicum) 70 grams make a fine powder afterwards add Seemab (Mercury) and once again grind. Now add this powder in molten mom (Wax) to make paste and apply locally.

According to Sawedi that

1. 1.Sibr (Aloe barbadensis) or Beekh Anjdan (Aspragus officinalis) 2 parts, Khakastar Chob Angoor (Vitis vinifera) 1 part add both in yolk of egg to make paste and is applied.
2. 2.Sharab khuna (Alcohol), Shahad (Honey), Sibr (Aloe barbadensis) are mixed and is applied.
3. 3.Sandrus (Tetraclinis articulata), Sibr (Aloe barbadensis), Samagh Zaitoon (Olea europaea), Aab zard aloo (Prunus arminica) to make paste and is applied.
4. 4.Rasas muharak (Tin, Stannum) added in Roghan Gul (Rosa damascus) and it is applied locally. It is more beneficial.
5. Majoosi and Hakim Mohammad Ajmal khan mention

that conservative treatment is not beneficial in the fistula where leakage of gases or faeces occurs. In this condition fistula need to be operated by experienced surgeon [4, 10].

10. Para-Surgical Management

10.1. Setons

This is the most ancient fistula management, recommended by Hippocrates, who inserted horse hairs with lint into the fistula and it was periodically tightened [19, 20]. Zakarya Al-Razi is credited being the first to use the Setons in surgery [21, 22]. This may be a ligature, silk, nylon or linen, etc.2 Practically this technique is suggested for high anal and inter-sphincter fistula. Usage of Setons primarily offers two advantages. With the passage of time it cuts the fistulous line, typically it takes three weeks to a year to cut through the tissues (cutting Setons) and it also promotes the local drainage that relieves inflammatory conditions [23, 24].

10.2. Cauterization

Cauterization is a technique that is used for destruction of diseased tissue and to produce hemostasis during surgery with a caustic chemical, electric current, a frozen probe, a hot iron, a laser, or ultrasound [1]. Most of the forms of cautery are listed in Unani System of Medicine but only thermocautery and chemical cautery are applied to the management of fistula in ano.

a. Chemical cautery

There are many single (Mufrad) and compound (Murakkab) drugs commonly used and recommended by Unani scholars such as Naushadar (Ammonium chloride), Hadtaal (Arsenic disulphate), Gandhak (Sulphur), Zangar (Copper disulphate), Para (Mercury), Choona (Lime), Neela Thotha (Copper sulphate), Suhaga (Borax), Sindoor (Oxide of red lead), Phitkiri (Alum), Shingarf (Red sulphide of mercury), etc., as examples of single drugs. Sheyaf Ghurab, Roghan Nasoor and Marham Zangar are example of compound drugs.

The chemical cautery is more effective if used in non-healing ulcers. Such erosive and caustic drugs dissolve the unhealthy granulation tissues and make the wound fresh and clean, after which the wound is packed and dressed with Munabbite Lahm (Tissue regenerator), Mudammile Qurooh, (prohealers) Musakkin,(analgesic) Muhallil (anti-inflammatory) and Habis drugs (Astringent Drugs) for quicker healing such as Kundur (Boswaila serrata), Murr Makki (Commiphora murrh), Damul-Akhwain (Dracaena ombet), Sibr Zard (Aloe barbadenesis), Zafran (Crocus sativus), Anzroot (Dawae Akseerin), Gulnar (Astragalas sarcacola), Mazu (Quercus infectoria), Mom safed (Wax), Post Anar (Punica gratum) and Safeda Kashghari (Lead carbonate) are commonly used [4, 5, 13, 9, 16, 18].

b. Thermocautery

It consists of a red-hot or white-hot material, usually a piece of wire or a pointed metallic instrument, heated in a flame or with electricity [1]. This technique is often used in situations where the chemical cautery is not enough. Most of the Unani scholars suggest this but Abul Qasim Alzahrawi primarily practiced this. To do so, a fine malleable probe that must be uniform in the diameter, length and course of fistulous track. Now heat the probe sufficiently and suddenly insert it into the tract and rotate it vigorously inside to burn the unhealthy granulation tissues, then remove the probe and clean the tract and fill it with a wick dipped in liquid fat to remove the remaining burnt unhealthy granulation tissues due to demulcent fat impact [14]. Now manage a thorough cleaning and dressing of this freshly made wound with Mudammil-e-qurooh (prohealers), Musakkin (analgesic) and Munabbite lahm (Tissue regenerator) drugs as listed above [14].

10.3. Amale Kharam

Ibn Sina, Najibuddin Samarqandi and Ali bin Hubal Baghdadi state that fistula is treated with Kharam. Kharam is a procedure in which a matted hair or silk thread is knotted at different places and it is passed through external opening up to internal opening, left tightly tied. After some time, it is rubbed like saw so that the nasty tissue is destroyed and healthy tissue grows. This procedure is repeated till complete excision of fistula [5, 10, 16].

Amale Kharam is a procedure that is modified and advanced form of the cutting of Setons. This procedure is done by a special instrument which was invented by Abulqasim Al-Zahrawi. This instrument is extremely malleable and has an eye on the one end like a needle for thread insertion. After cleaning with Arq Gulab (Rosa damascus), a matted thread is threaded into the instrument and transferred from the external opening to the internal opening, the thread is accessed by the finger kept in the anal canal, both ends of the thread are tied and kept as it for few days. Once the thread is fixed in the track after few days, both the ends of thread are opened and rubbed vigorously to debride the fistulous track. Now discard the previous thread and insert a new thread and repeat the same process until the wound is trimmed for a period of time without interfering with the continence [14]. If fistula is not open inside then an internal opening is made. If fistula is deep then procedure is not feasible because faeces excrete through it that interferes healing [14].

11. Surgical Management

11.1. Fistulotomy and Fistulectomy

The whole length of fistulous track is excised called Fistulotomy or Fistulectomy to make sure that the wound heals outward from the

depth [25]. In these two methods, the patient is told to lie in the Lithotomy position. After anaesthetization and cleaning, a blunt and malleable probe from the external opening to the internal opening is inserted and it is left at this location. Now the entire length of the track is fully incised using a sharp knife to remove the granulated path. The wound is cleaned and the damaged tissues are stripped to develop a new and clean wound, that is fistulotomy and when the whole length of the track is excised and removed and left open then it is known as the fistulectomy. Lastly, the wound is filled with cotton soaked in medicines like Mudammile Qurooh (prohealers), Muhallil (anti-inflammatory) and Habis advia (Astringent Drugs) and left open to heal [7, 10, 15, 16, 17].

According to the Ibn Sina fistula may be treated by surgical intervention [4, 10]. Jurjani mentioned that its only treatment is surgery, but after surgery the munnabite laham (Tissue regenerator) medicines are used, for example Sibr (Aloe barbadensis), Murr (Commiphora myrrh), Damuul akhwain (Dracaena ombet), Kundur (Boswalia serrata), Zafran (Crocus sativus), Anzroot (Astragalas sarcacola) taken in equal quantity and ground to make a fine powder. The powder is sprinkled on the fistula. This medicinal formula has been named as "Akseereen". If Zangar (Copper disulphate), Surma (Antimonium nigram), Gulnar (Punica granatum) and white Zaj (Alum) are added in the above formula then it is more effective and its potency is enhanced.4 Hakim Ahmad al Hasan al Jurjani and Ali bin Hubl Bughdadi advised that fistula is excised and packed with old cotton for two days. After two days Basaliqoon paste is applied [14, 16].

Hakim Ahmad al Hasan al Jurjani advised that the patient should take sitz bath with the medicines as brge moru and nagarmotha and post anar and juft baloot etc [15].

11.1.1. When Fistula is Near to Anal Opening

According to Ibn Sina and Mohammad Azam Khan the fistula is near to anal verge or hollow viscera or near to that place where a finger may reach it, is prognostically good. If it will be excised then all muscles will not be damaged in the operation but some muscles may and the rest muscles act to retain faeces [4, 10].

11.1.2. When The Fistula Is Far Away from Anal Opening

According to the Ibn Sina and Mohammad Azam Khan the fistula far away from anal opening will be excised which is the only treatment then all muscle will be damaged and incontinence of faeces develops due to loss of voluntary action of muscles [4, 10]. Jurjani also states that the surgical intervention should be avoided, if the fistula is far away from anal opening because muscles of anal area are cut down and paralysed. In this condition the medicines are applied that produces abrasions and to make a fresh ulcer for healing. Afterwards if needed then paste or ointment of Munnabitte laham (Tissue regenerator) medicine is used for treatment or if needed then it is closed with the help of suture [4].

11.2. Management Depends Upon Course of Track

If the fistula is adjacent to the vein, arteries and nerve then the operation of fistula is more dangerous and sometime the fistula may extend to bone, joint of thigh or muscle of thigh, urinary bladder and urethra. The evidence of fistula reaching to urinary system is that urine passes through it [4, 14, 16, 17]. If the fistula reaches to the neck of urinary bladder or muscles of thigh, it is treated with conservative treatment than excision of fistula [16].

If it reaches to joint of thigh or bone, it can be identified by the probe reaches to that part. If the fistula does not touch to bone and there is no pain but it always exudes pus then no treatment will be effective and it will not be filled with paste [14].

11.3. Diet

Soft and light diet example Polenta (khichdi) or bread dipped into mutton soup or vegetables like Gourd, Ridge Gourd, Indian round gourd, Spinach or Lady finger etc., should be advised and constipation should not be developed. If the constipation is developed then severe purgative medicines should not be given but laxative like decoction of Anjeer vilayti (Ficus carica) five pieces dipped in 250 ml milk at night will remove the constipation. Avoid excessive spicy and fried food, jaggery, red chili and those diets taking more time for digestion [8, 13].

12. Combined Procedure

Abul Qasim Al-Zahrawi has advised the combination of the above described treatment according to the disease situation [14]. It may be understood as the muscles which form anal sphincter are voluntary and involuntary muscles. When these muscles are cut during the operation, it leads to faecal incontinence, so it is best to go for a combination operation in high and complicated fistulae, because no single procedure is suitable for all forms of fistulae, and it must be carried out according to the clinical situation, the circumstances of the patient and the degree of involvement of the anal sphincters, etc.

12.1. Complications of the Fistula Operation

The both managements of fistula may be surgery or medicines applied to remove the infected or damaged tissues may be dangerous [4, 6].

12.2. During Surgery

Sometimes fistula may develop dangerous diseases like convulsion and syncope or shock [5].

12.3. Post-Surgery

Almost all Unani scholars claimed in their books that fistula is a very painful and stressful problem for surgeons and patients alike. Its treatment is not easy due to high risk of recurrence and serious

complications after surgery. Zakarya Al-Razi gave a very good example of how "the internal anal sphincter is an involuntary component that continuously contracts and relaxes like a purse string without voluntary controI [26]. If the internal anal sphincter is cut down during the fistula surgery, this leads to faecal incontinence, which is incurable [4, 5, 9, 16, 17]. If the internal opening is present far away in the anal canal from anal verge and above the muscles which surrounds the rectum that it should not be cut because it leads to faecal incontinence due to cutting of that muscle [16].

13. Conclusion

Managing fistula in ano for the surgeons and patients is still a challenging and frustrating problem. In recorded history Hippocrates first mentions the pathophysiology and fistula treatment in ano around 400 BC. After Hippocrates, other Unani scholars made much progress worthy of note are the great Unani surgeon Abu Bakr Muhammad ibn Zakariyya al-Razi, Abul Qasim Al-Zahrawi and Ibn Sina. In addition to the use of Setons, they mentioned many other surgical procedures for the management of perianal fistulae, e.g. Fistulotomy, Fistulectomy, Cauterization of the fistulous track and Amale Kharam etc., as no particular procedure is sufficient for all forms of fistulae. Many new and innovative methods developed now a days for the management of perianal fistulae have passed through centuries but the basic concept and treatment of fistula in ano is still the same, i.e. the removal of the fistulous tracks without eliminating the patency of the anal canal and prevent complications as incontinence of faces.

14. Contribution of authors

Dr. Saiyad Shah Alam: conceptualized the study and reviewed final draft

Dr. Jamaluddin: Collection of the material from the relevant literature and prepared the draft of the review.

Dr. M. Shakeel Ansari: Reviewed the draft and checked for technical details.

Dr. Ghulamuddin Sofi: Critical appraisal and correction of the draft.

References

1. Venes D, Davis FA. Taber's cyclopedic medical dictionary. 2009; 804: 362.
2. Bailey H, Bulstrode CJ, Love RM, O'Connell PR. Bailey & Love's short practice of surgery. Crc Press. 2008: 1265-8.
3. Tsoucalas G, Gentimi F, Kousoulis AA, Karamanou M, Androutsos g. Imperforate anus and perianal fistula in Ancient Greek medical writings. Annals of Gastroenterology. 2012; 25: 241-2.
4. Khan M.A. AkseereAzam; chapter: Nawaseer, published byIdaraKitabul-Shifa. New Delhi. January 2011; 676.
5. Kabeeruddin H. Moalejat Sharah Asbab. Urdu translation; chapter: Nawaseer. published by IdaraKitabul-Shifa. New Delhi. 2009; 537-8.
6. Jeelani G, Makhzanul-Ilaj. chapter: Perianal fistulae, published by IdaraKitabul-Shifa. New Delhi. 2005; 571.
7. Arzani A, Tibbe Akbar. Urdu translation by Allama Husain M. published by Faisal publications. Deoband, India. 511-2.
8. Hasan Qurshi HM, Jam-ul-Hikmat. chapter: Bhagander, published by IdaraKitabul-Shifa. New Delhi. 2011; 796-7.
9. Tabri AHAIH, Firdausul-Hikmat. Urdu translation by Sambhali MAS. published by IdaraKitabul-Shifa. New Delhi. 2010; 252.
10. Ibn Sina, Alqanoon Fil-Tib. Urdu translation by Kanturi G.H. published by IdaraKitabul-Shifa New Delhi. 3: 1321-2.
11. Bhat S.M, SRB's Manual of surgery. chapter: Perianal fistulae. Jaypee Brothers medical publishers. 2013; 1051.
12. Steele SR., et al. Practice parameters for the management of perianal abscess and fistula-in-ano; Disease of the colon and rectum volume. 2011; 54: 1465-74.
13. Khan A, Haziq. chapter: Perianal fistulae. published by Madeena publishing company. Karachi. 1983: 374.
14. Zahrawi AQ, JarahiyateZahrawi. chapter: Management of the perianal fistulae, published by Central Council for Research in Unani Medicine. Department of health and family welfare. New Delhi India. 2012; 137.
15. Jurjani AH, KhawazmeShahi Z. chapter: Nawaseer. published by IdaraKitabul-Shifa. New Delhi. 472.
16. Baghdadi IH, Kitabul-Mukhtarat Fil-Tib. published by Central Council for Research in Unani Medicine, department of health and family welfare. New Delhi India. 4: 72-3.
17. Al-Majusi AI, Kamilus-Sana'ah. published by IdaraKitabul-Shifa. New Delhi. India. : 565-6.
18. Al-Maseehi IQ, Kitabul-Umda Fil-Jarahat. published by Central Council for Research in Unani Medicine. department of health and family welfare. New Delhi India. 2: 200.
19. Soliman F, Sturgeon G, Hargest. Revisiting an ancient treatment for transphincteric fistula-in-ano 'There is nothing new under the sun' Ecclesiastes Iv9, The Royal Society of Medicine. 2015; 108: 482-9.
20. Subhas G, Bhullar JS, Al-Omari A, Unawane A, Mittal VK, Pearlman R. Digestive Surgery. 2012; 29: 292-300
21. Syed IB. Islamic Medicine: 1000 years ahead of its times. Jishim. 2002; 2:2-9.
22. Hitti P. The Arabs: A short History; Henry Regnery. Chicago. 1943; 143.
23. HamalainenKJ, SainioAP. Cutting setons for anal fistulas: high risk of minor control defects. Dis colon rectum 1997; 40:1443-7.
24. Ritchie RD, Sackier JM, Hodde JP. Incontinence rates after cutting seton treatment for anal fistula. Colorectal disease. 2009; 11: 564-71.
25. Rinoul RF. Farquharsan's textbook of operative Surgery; 8th edition, CHURCHIL LIVINGSTONE: A branch of Harcourt Brace and

company limited. 515.

26. ZakaryaRazi AMB, Al-Hawi Fil-Tib. published by Central Council for Research in Unani Medicine, department of health and family welfare. New Delhi India. 2004; 11: 29-31.
27. Rizwan Ahmad H.K, TarjumaSharahAsbab. Urdu translation; chapter: Nawaseer. published by Central Council for Research in Unani Medicine. department of health and family welfare. New Delhi India. 174-5.