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Review Article

CONCEPT OF FISTULA IN ANO (NASOORE-E-MAQAD) AND ITS MANAGEMENT IN UNANI SYSTEM OF MEDICINE

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ABSTRACT

The perianal fistula is one of the most frustrating problems and its management is still a challenge for surgeons. It is first described by great Unani Physician Hippocrates around 400 BC. Hippocrates not only described the pathophysiology, clinical presentations and the management of Fistula in Ano but also explain the goal of the treatment which is the obliteration of the fistulous tract without hampering the continence. After Hippocrates, there are many surprising and amazing advancement made by the Arab scholars mainly by the great Unani surgeon Abulqasim Al-Zahrawi. Besides the use of Setons, He explained many other surgical techniques for the management of the perianal fistulas for example Amal-e-Kharam (a modified form of the cutting seton), Fistulotomy or Fistulectomy and Cauterizations etc. Because no single procedure is appropriate for all type of fistulas, so it must be treated according to the clinical presentations, patient's conditions, degree of the involvement of the anal sphincters and the surgeon's experiences etc. Centuries passed many new and advanced techniques are developed for the management of perianal fistulas but the basic principle remains constant i.e. Obliteration of the fistulous track without hampering the continence. The aim of this paper is to evaluate and validate the classical techniques for the management of perianal fistulas explained by Unani scholar which are still in practice and considered as newer and advanced procedures crediting or thanking the Unani surgeons.

Keywords: Amal-e-Kharam, Setons, Fistulotomy, Fistulectomy

INTRODUCTION

Fistula is a Latin word means an abnormal tube like or pipe like passage.[1]The concept of fistula in ano (Nasoore Maqad) is present since hundreds and thousands of years but the oldest known reference at the beginning of the recorded medical history is around 400 BC (around 2000 years old). This reference is obtained by the book of the famous Greek Physician and the Father of Medicine Hippocrates. Hippocrates was the first person in the world who described Nasoore Maqad in his book "Corpus Hippocraticum'' with highly appreciable details and suggest the Setons therapy for the complicated and high anal fistulas.[2&3] The fistula in ano is defined as a track lined by granulation tissue that connects deeply in the anal canal or the rectum and superficially on the skin around the anus [4]. According to Unani System of Medicine the *Nasoore Maqad* is described as a bad and dirty wound which occurs in relation to the rectum and the anal canal mostly due to perianal sepsis and always exudes serosanguinous or infected materials and usually associated with pain and burnings. These wound are deeply connected that is why it is considered as the *Aseerul-Indemal Qarha* which not heals easily.[5-13].

Steele R.S et al (2011) claimed that approximately 30% to 50% of patients with an anorectal abscess, a persistent tract, or fistula-in-ano, develops, extending from the anal canal to the perineal skin.3,4 Unfortunately, there is no definitive way to predict who will develop one, or how to prevent one. Patients often report persistent purulent drainage or intermittent perianal swelling and tenderness followed by spontaneous discharge[15].

ETIOPATHOGENESIS

According to *Hakeem Khajandi* and *Ibn Sina* the most common cause of the *Nasoore Maqad* is perianal abscesses which has burst or ruptured spontaneously or due to its improper drainage[5&9],(This is the most widely accepted theory behind the Origin of the anal fistula, and now a days this theory is known as the crypto glandular theory of the perianal sepsis and fistula).[14-15]

The other causes of the *Nasoore Maqad* are Chronic and longstanding Bleeding, Dysentery or Diarrhoea, Constant and long term use of highly spicy diets, Chronic Rectal inflammations and irritations etc[11] (if we observe keenly then all the above mentioned symptoms are now a day's are diagnosed as Ulcerative Colitis and Crohn's Diseases etc.)

CLASSIFICATION OF NASOORE MAQAD

According to Unani Medicine the *Nasoore Maqad* is broadly classified into two groups

Nasoore Ghair Nafiz: It is not an actual type of *Nasoor* because it has only an external opening like a blind track without the internal opening. This is an easily treatable type and now a day this type is best termed as "Sinus" having an opening, discharge and chronicity etc. In earlier era, it is also included in the category of fistula due to its similar presentations like opening, discharge and chronicity etc.[5-13 & 16]

Nasoore Nafiz: This is the real type of fistula because it has both external and internal openings and both are connected to each other. This group is further divided into two types:

1. The internal opening is located below the muscles which surrounds the rectum and responsible for the voluntary holding of the faeces i.e. anal sphincters. This type was also thought to be a treatable type but it takes longer time. Now days this type is well known as low anal fistulae.
2. The internal opening is located above the anal sphincter. This is the most challenging and frustrating type for both surgeons and the patients due to its chronicity, high recurrence rate, complications and difficulties. Now a day it is well known as high anal fistulae.[5-13 & 16]

The finding of the internal opening is most important thing during the management of the fistulae as it helps in the tracing of the direction of the track, missing of this point leads to recurrence due to wrong and incorrect management.

Garcia A.G. et al (1996) claimed regarding the factors which are related to the recurrence of fistulae as any technical difficulty in pre-operative evaluation, complex type of fistula, missing the right track during surgery, horseshoe extension, lack of identification or lateral location of the internal fistulous opening, previous fistula surgery, lack of expertise of the surgeon performing the procedure, lack of treatment of aetiological factors and lack of proper follow-up[17]

Sygut A. Et al (2010) reported regarding the importance of the finding of the internal opening of the fistula as the management of fistulae depends upon its proper evaluation which includes finding the direction of track as well as number and location of internal opening, whether high or low, in relation to the anorectal ring. In a systematic review, the relative risk of anal fistula recurrence was 20-fold higher in patients in whom the internal opening was not identified compared to those with the internal opening identified[18].

HOW TO DIFFERENTIATE BETWEEN THE NAFIZ AND GHAIR NAFIZ NAWASEER (SINUS AND FISTULA) ACCORDING TO UNANI METHOD OF EXAMINATION

Patient is asked to lie down supine on the examining table with flexion at hip and knee (Lithotomy Position), After cleaning and Syringing with arq gulab[19], a blunt and malleable trocar (Probe) is inserted into the external opening with one hand, and it is gently pushed inside according to its track, simultaneously the index finger of the another hand is inserted into the anal canal at the expected site of the internal opening to feel the tip of the trocar inside (digital examination). If the tip of the trocar is felt inside the anal canal coming out then it is a case of Nasoore Nafiz (Fistula). And if the tip of the trocar is not touching the examining finger and there is a mucosal or muscular layer felt between the trocar and finger then it is a case of Sinus (Ghair Nafiz).[5-10, 13, 16 & 20] There is also a clinical method which is described in Unani literatures to differentiate between the sinus and fistula. This method is especially used when the fistulous tract is so narrow and the use of trocar or threads is not possible. To perform this test the patient is asked to lie down in Lithotomy position ,The anal canal is tightly packed with cotton roll to prevent leakage of gases and faecal matter from the anus during the test, after that patient is said to hold the breath and strain as it is done during defecation, At this point the external opening is carefully examined for any leakage of gases or faecal matter, If it is so then it is considered that the tract is connected to anus or rectum with an internal opening and it should be treated as fistula in ano[5-10, 13, 16 & 20] .

HOW TO DIFFERENTIATE BETWEEN THE HIGH ANAL AND LOW ANAL FISTULAS (NAWASEER) ACCORDING TO UNANI METHOD OF EXAMINATION

When the diagnosis of fistula is confirmed, the examination is further proceeded to differentiate between the high anal and low anal fistulas. For this a matted thread or Seton or fine malleable trocar is inserted from the external opening and it is gently pushed inside to come out from the internal opening (digital examination) and now the patient is asked to contract and elevate the rectum as it is done during the holding of faeces and urine. During this contracted condition of the rectum the examiner feels the location of the internal opening with the help of thread at internal opening. If it is located above the contracted anal sphincter or there is any resistance during withdrawal of the thread (inter sphincter) then it is a case of high anal fistula, and if it is located below the contracted rectum or there is no resistance during withdrawal of the thread then it is considered as low anal fistula [5-7, 13 & 16.]

MANAGEMENTS OF NAWASEER ACCORDING TO UNANI MEDICINE

1. SETONS

It is the most ancient and popular technique for the treatment of the fistula advised by Hippocrates at the beginning of the recorded medical history[21].But it was the Great Arabic Scholar Zakarya Al-Razi who attributed to be first to use the Setons in surgery[22 & 23]. It can be anything like a ligature, silk, nylon or linen etc[4]. Actually this is the earliest form of the medicated threads (Kshar Sutra) [24]; this technique is basically suggested for high anal and inter sphincter fistulas. Use of Setons gives mainly two benefits. It cuts the fistulous track with a passage of time, usually it takes three weeks to one year to cut through the tissues (cutting Setons) and it also facilitates the local drainage which relieves in inflammatory conditions[25-26].

Ritchie RD et al (2009) and Vial M. Et al (2010) claimed regarding the management of the high anal fistulae with Setons that the use of seton is a traditionally favoured method for treating high fistulae, and those associated with inflammatory bowel conditions such as Crohn's disease, to minimize the incontinence problem[27-28].

2. FISTULOTOMY OR FISTULECTOMY

Lay the fistulous track widely open or to excise it completely are termed as Fistulotomy or Fistulectomy respectively to ensure that the wound heals from the depth outwards.[29] This is the best and highly suggested technique since the Muslim era for *Nasoore Nafiz* (low anal fistulas). To do this procedure, the patient is asked to lie down supine in Lithotomy position. After anaesthetization and cleaning a blunt and malleable probe is inserted into the fistula from external opening to the internal opening and held at this position. Now using a sharp knife the whole length of the track is fully incised to expose the granulated track. The wound is cleaned and the unhealthy tissues are scrapped to make a fresh and healthy wound, this is Fistulotomy and when the full length of the track is excised and removed and laid open then it is known as the Fistulectomy. Finally the wound is packed with cotton soaked in *Mudammile Qurooh, Muhallil* and *Habis* medicines and it is left unstitched to heal with secondary intention. This procedure is strictly contraindicated in case of high anal and inter sphincter fistulas because it leads to faecal incontinence due to cutting of the anal sphincters.[7-8, 16 & 20]

3. CAUTERIZATION

Cauterization (cauterisation or cautery) is a procedure used to burn the skin or flash of a wound with a heated instrument or caustic agents in order to stop bleeding or to prevent infection. Cautery is a device used to destroy the tissue by electricity, freezing, heat or corrosive chemicals. It is used in potentially infected wounds and to destroy excess granulation tissue. Thermocautery consists of a red-hot or white-hot object, usually a piece of wire or pointed metallic instrument, heated in a flame or with electricity.[1] all types of cautery (burn, freeze and use of caustics) are mentioned in Unani System of Medicine (USM) but regarding the management of fistula in ano, only Thermocautery and chemical cautery are applied.

Chemical cautery*:* There are many single and compound drugs widely used and advised by classical Unani scholars in their books such as *Naushadar, Hadtaal, Gandhak, Zangar, Para, Choona, Neela Thotha, Suhaga, Sindoor, Phitkiri, shingarf* etc are the examples of the *mufrad* drugs and *Sheyafe Ghurab, Roghan Nasoor* and *Marham Zangar* are the example of *murakkab* drugs. The chemical cautery is beneficial when used in early non healing wounds. These erosive and caustic (*Muharriq and Akkaal*) drugs destroy the unhealthy granulation tissues and make the wound fresh and healthy, after that, the wound is packed and dressed with *Munabbite Lahm*, *Mudammile Qurooh, Musakkin, Muhallil* and *Habis* drugs for faster healing such as *Kundur, Murr Makki, Damul-Akhwain, Sibr Zard, Zafran, Anzroot (Dawae Akseerin) and Gulnar, Mazu, Mom safed, Post Anar and Safeda Kashghari* are commonly used.[5-9, 11, 13, 16 & 19.]

Thermocautery*:* This procedure is mainly used when the chemical cautery is not sufficient. This is advised by many Unani scholars but mainly practiced by Abulqasim Alzahrawi. It is basically done in high anal fistulas. To perform this, take a fine and malleable trocar which must be according to diameter, length and course of the fistulous tract (this measurement done before the procedure of cauterization). Now heat the trocar sufficiently and insert suddenly into the tract and rotate it vigorously within it to burn and destroyed the unhealthy granulation tissues, after that remove the trocar and clean the tract and pack it with wick dipped in liquid fat to remove the remaining burned unhealthy granulation tissues due to demulcent effect of fat. Now treat this newly made wound with proper cleaning and dressing with *Mudammile Qurooh*, *Musakkin, Muhallil* and *Munabbite Lahm* drugs as mentioned above[7, 20].

4. AMALE KHARAM

Amale Kharam **(**almost similar to the Kshar Sutra procedure**)** is a procedure which is basically the modified and advanced form of the Setons (especially the Cutting Seton) and it is done in case of high anal or multi tracked fistulae, in most of the cases it is combined with other procedures. This procedure is done by a special instrument which was made and designed by Abulqasim Al-Zahrawi himself. This instrument is highly malleable and having an eye at the tip for insertion of the thread. After cleaning and syringing with Arq Gulab, trace the full course of the fistula and then a matted thread made with silk (*Resham*) is pierced in the instrument and passed from the external opening to the internal opening with one hand, and the thread is received by the finger kept in the anal canal, now both the end of the threads are tied and kept for two to three days as it is. Once the thread is fixed in the track after few days, the both the ends of the thread are opened and rubbed vigorously to debride the fistulous track and make a new wound. Now remove the previous thread and insert a new thread and repeat the same procedure until the wound is cut throw with a period of time without hampering the continence.[6-7, 9 & 16]

According to Sungurtekin U. et al (2016) the purpose of the fistula surgery is to eradicate the fistulous tract without hampering the anal continence. Different techniques have been proposed to decrease the risk of postoperative anal incontinence. Seton placement is one of them. Theoretically, Seton is an alternative to one-stage fistulotomy, since it facilitates the division of anal sphincters more slowly and preserves sphincter functions. This technique is basically recommended to preserve the postoperative anal incontinence. Loose seton is defined as a ligature made from any type of material (mostly it is made with heavy silk) and placed in the fistulous track around the anal sphincter and tied without any tension[30].

5. COMBINED PROCEDURE

The combination of the above-mentioned procedure according to the situation of the disease (staged operation) was advised by Abulqasim Al-Zahrawi. Since the muscles which surround the anal canal (anal sphincter) are not a voluntary muscles and it contracts and relax automatically like a purse string (because it is supplied by autonomic nervous system). When theses muscles are cut down during procedure, it leads to faecal incontinence, so in high anal and complicated fistulae, it is better to do a combined procedure as no single procedure is appropriate for all types of fistulae, so it must be treated according to the clinical presentation, patient's conditions and degree of the involvement of the anal sphincters etc[7].

COMPLICATIONS OF THE FISTULA OPERATION

Almost all Unani scholars mentioned in their books that the fistula is very irritating and frustrating problem for both surgeons and patients. It is kind of very bad and Aseerul-Indemal wound and its management is not an easy task due to high difficulties in its management, high rate of recurrence and post-operative severe complications. The Unani scholars around1000 years ahead have very deep and complete knowledge about the external and internal anal sphincters and their innervations. Zakarya Al-Razi gave very good example that *"the internal anal sphincter is not a voluntary component and it contracts and relaxes automatically like a purse string without any voluntary control".*[31]During the fistula operation if the internal anal sphincter (IAS) is cut down then it leads to faecal incontinence which is untreatable, and when diseased condition is left due to fear of trauma to the IAS then it leads to recurrence[5-9, 13, 16 & 20].

CONCLUSION

The management of *Nasoore Maqad* is still a challenging and frustrating problem for the Surgeons and Patients. In recorded history, the pathophysiology and the management of the fistula in ano is first described by Hippocrates around 400 BC. After Hippocrates, there were much advancement made by the Arab scholars mainly by the great Unani surgeon *Abulqasim Al-Zahrawi*. Besides the use of Setons, He explained many other surgical techniques for the management of perianal fistulae for example Fistulotomy, Fistulectomy, Cauterization of the fistulous tract and the "*Amale Kharam*" (use of threads to treat fistula) etc, as no single procedure is appropriate for the all types of fistulae. Centuries passed many new and advanced techniques developed for the management of perianal fistulae but the basic principle of treatment is still same i.e. obliteration of the fistulous tracks without obliterating the patency of the anal canal.

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