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A REVIEW OF SURGICAL APPROACH OF SUSRUTA IN BHAGANDARA W.S.R FISTULA IN ANO AND ITS RELEVANCE IN PRESENT DAY

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ABSTRACT

A fistula-in-ano is an abnormal tract or cavity with an external opening in the perianal area that is communicating with the rectum or anal canal by an identifiable internal opening. Susruta based upon its incidence and difficulty in treatment has included *bhagandara* in *Ashtamahagada* and has described it in much detail. Over the last 30 years, many authors have presented new techniques in effort to minimize recurrence rates and complications, but despite 2,000 years of experience, fistula-in-ano remains a perplexing surgical disease. So there is a need to rediscover the ancient wisdom of *Susruta* in treatment of this complex disease and to develop new trends in the understanding of Fistula-in-ano. The aim of this study is to review *Bhagandara* in Susruta Samhita and analyze it in the light of present era's surgical texts, which may hold a key to its effective management.

Keywords : Fistula-in-ano, perianal area,*bhagandara* , *ashtamahagada* , surgical disease

INTRODUCTION

The true prevalence of fistula-in-ano is unknown. The incidence of a fistula-in-ano developing from an anal abscess ranges from 26-38%.[1,2]One study showed that the prevalence of fistula-in-ano is 8.6 cases per 100,000 population. The prevalence in men is 12.3 cases per 10,000 populations and in women is 5.6 cases per 10,000 population. The mean age of patients is 38.3 years. [3]References to fistula-in-ano date to antiquity. As with the first description of many other diseases the fascination of modern day medical historians for Hippocrates [460 BCE] remains unaltered for the earliest description of fistula-in-ano too. He is believed to be the first person to have made reference to surgical therapy for fistulous disease and is praised for being the first person to advocate the use of a seton. But again as with other conditions, these claims fall and fail when Ancient ayurvedic texts are analyzed. There should be no doubt after knowing the description of etiology, pathology , clinical features and surgical management of *Bhagandara*(fistula in ano) as described by *Susruta* [2000 BCE] that he was the first person to describe about the condition .His knowledge about the disease is apparent from the fact that he has mentioned it as a *Mahagada*(critical disease), which is indicative that he was well aware about the challenging nature of treatment of the disease and its much prevalent incidence in the population at that time even.

The treatment of fistula-in-ano remains challenging in contemporary system too. *Surgery* remains the mainstay of treatment. Over the last 30 years, many authors have presented new techniques and case series

to minimize recurrence rates and incontinence complications, but despite 2,000 years of experience, fistula-in-ano remains a perplexing surgical disease.

Concept of Bhagandara[4]- AcharyaSusruta has coined termed *Bhagandara* as it causes the *daraana* of the *bhaga, guda and bastin pradesha*, i.e. they break through the perineum , anus and bladder regions .[4]So *Bhagandara* is broad term describing a condition in which there is a fistulous tract connecting vagina , anus or even bladder. So, Perineal fistula will be more appropriate word for *bhagandara* .

The depth of knowledge of *Susruta* about the course of progress of the disease can be appreciated from the point, that he was able to identify the prodromal stage that, the disease begins as a deep rooted *Pidika*(swelling) around the *guda*(anal region) within two *angula*(finger) circumference with pain and fever, known as *bhagandarapidika*. That is, initially there will be accumulation of pus, which if not treated will burst open through a tract leading to *bhagandara* . That means *Susruta* was able to identify and predict which of the swellings in the anal region will have a course that if untreated will lead to fistula-in-ano , something which even the present day surgeons are not able to do convincingly .

Susruta has described 5 types of *bhagandara* depending upon the dosha involved, and has described their clinical features in much detail, viz*:*

1. *Shatponaka*– The *dosha* involved is *Vata*. It presents with a *pidika* , which is *Arunavarna,* associated with pain described as pricking, cutting, beating etc along with thin, frothy and copious discharge. In later stage multiple openings are present with discharge of flatus, urine and semen. Clinically in present scenario there are cases seen in which urine is discharged as in urinary fistulas, but discharge of semen is not seen usually, though theoretically it may be possible to have discharge of semen. Such kind of fistula presenting with multiple openings is usually tubercular or medullary carcinoma.
2. *Ushtagriva*- The *dosha* involved is Pitta. It presents with a *pidika*, which is *rakta varna,* thin, elevated like neck of a camel, associated with burning sensation along with discharge which is warm, offensive in smell. This is typical of Ischio-rectal abscess where there is a huge swelling resembling like the hump of a camel, associated with signs of inflammation and discharge which is always offensive suggestive of mostly mixed infection. Here, the specialty of *Susruta* in suggesting the similes which are common and can be easily understood by all, should be appreciated.
3. *Paristravi*– The *dosha* involved is *kapha*. Here during the *pidikavastha* it will be firm, painless swelling associated with itching. On bursting it becomes firm, indurated with slimy discharge. This is typically seen in tubercular granuloma. Here the granuloma is often surrounded by lymphocyte cuff and fibrosis. Disease presentation may range from an asymptomatic nodule to a simple fistula or a draining sinus to the complex presentations of multiple, draining fistulas or sinuses and wide involvement, with undermining of previously normal tissues [5]. This can be understood as initially when firm single tract exists it is *Kaphaja bhagandara*, but later as the disease progresses to form multiple tracts, it should be considered as *Vataj bhagandara* .

4. *Shambukavarta* – The *dosha* involved is *Tridosha.* It has a rapid course presenting as a huge swelling with multiple coloured discharges associated with pricking, burning and itching. It bursts to form a wide opening, that gradually tapers like a shell of conch. So, it is deep and the depth cannot be exactly assessed. Such rapid cause and vivid presentation are usually seen in infective gangrenous pathologies around the anus.
5. *Unmargi* – Here, there is no *doshika* involvement and primarily trauma is the cause. Consumption of bone along with the food. Undigested substances in food which may have sharp penetrating surface can produce injury to the anal wall and can penetrate the tissues. This injured region may get later infected to produce such fistula. Also, a foreign body like bone may get lodged into the abscess cavity, helping to maintain the chronic infective process. Even, the perforations in intestine or pelvic abscess leaking through perineal region can be categorized under *Unmargi bhagandara* .

Acharya Vagbhatta, has added three more types of fistula-in-ano, which can be seen in patients viz.- *parikshepi, ruju, arshobhagandara* .

Prognosis [6]- *Acharya Susruta* had a clear idea about the outcome of the treatment, and he was able to say that out of 5 types of *bhagandra* described, *Sambukavarta*and the traumatic ones (*unmargi*)are incurable and the rest are curable with difficulty. So *Susruta* has advised to begin the treatment, only after explaining the prognosis to the patient. This shows that *Susruta* gave much importance in obtaining the consent, before initiation of the treatment.

Management [7]- The approach of *Susruta* to the management of *Bhagandra* was greatly motivated by his efficacy to recognize the stage of disease and so was his intervention. If the intervention was in stage of *pidika*, the treatment was followed on the lines of *Vranashopha* (swelling) applying various procedures starting with *aptarpana* (fasting or low diet) with termination at *verechana*(purgation), aimed at reversal of unsuppurated stage. If from this stage onwards the disease process could not have been reversed *Susruta* had an approach of controlled suppuration ultimately leading to drainage using procedures like *snehan*(oleation), *avgaha*(warm irrigation), *svedana* (fomentation) etc. This is a hallmark and specialty of *Susruta* and his ability to control the course of disease and this process of controlled suppuration does not exist in contemporary science, even now. In case, if patient came in the stage of fistula, *Susruta* has told that fistulectomy (*sashayamudhare ch shastrein).* For this, the diagnosis of the fistula, using a probe and a proctoscope to ascertain the whether the opening presents externally, i.e. *parachina* or *bahirmukha*(blind external) or it opens internally, i.e. *arvachina* or *antarmukha* (blind internal) should be done and also to assess the direction of the tract, followed by complete removal of the tract.

The general operative principal of *Susruta* was that the whole cavity or receptacle of pus (sinus) should be raised up after identifying the tract with an *eshani* (probe), and the tract is then scrapped out. In case of blind internal fistula, the patient should be strapped and asked to strain downward and then once the internal opening is visible or accessible a probe is then introduced from inside and the tract is removed or else *agnikarma*(cauterization) or *kshara* (caustics)

should be applied. This was an ultra-modern approach of *Susruta* in case of complicated fistulas, where obliteration of internal opening would prevent further contamination and infection of the tract by fecal matter, thus allowing scope of spontaneous healing. This approach is still practiced by many modern day surgeons where by various means internal opening is obliterated to prevent the contamination by fecal material, using various tissue adhesives and biomaterials formed as fistula plugs. This is a general remedial measure which may be resorted to all the types of this disease.

Specific Measures :-*Shatponaka* – In fistula, having multiple external opening, it is challenging to treat the wound as a result of excising all the tracts by one continuous incision. Such procedure could also result in incontinence along with increased chances of contamination by urine and fecal matter. To overcome such a complication, *Susruta* had a unique and creative approach, to excise the tracts in multiple sittings. In such cases, the outer tracts are interconnected to convert into a single central tract. Then the resultant central tract is excised with minimal tissue involvement. Such an approach would prevent formation of a bigger wound and its subsequent contamination by fecal material. In order to connect these multiple tracts *Susruta* had used various incisions, viz;

a) *Langalaka*– A V-shaped incision or an incision which is equal on both the sides.
b) *Ardhalangalaka* – An incision with one arm longer than the other.
c) *Saravatobhadara* – An incision made in the region of the anus in the shape of a cross and a little removed from the raphe of the perineum. It was usually used in cases where the tracts can't be connected, as in case of Horse-shoe shaped fistula.
d) *Gotirthaka*– It is a longitudinal incision, by introducing the knife from one side.

Therefore, such an approach would allow the surgeons to prevent the formation of a huge ulcer at the perineal region, which is predisposed to various contaminants and also complication like incontinence, at the same time preventing much discomfort to patient.

Ustagriva– In acute inflammatory conditions like ischio-rectal abscess, the priority is to drain the pus. Similarly in *ustagriva* fistula where there is huge collection of the pus, *Susruta* has advocated complete excision, following probing. If the slough cannot be completely removed, then *kshara*is applied. This is the only indication where *kshara*is used in soft tissue, elsewere it is indicated in *kathina*(hard) and *utsanamamsa*(hypergranulated). Postoperatively, a paste of butter and pasted sesame should be constantly applied to it and ulcer should be duly bandaged.

Paristravi– In such case, when there will be induration along with minimal discharge, the external opening will be visible. So at that time, *shalya*(foreign body)or tract has to cauterized followed by application of *kshara*. If it does not heal, then whole tract has to be excised using appropriate incision.

a) *Ardhachandra* or *Chandrachakra* : It is a semicircular or circular incision. In such incision, the external opening has to be excised by burrow whole all around and hence creating a bigger tract, that may allow drainage of pus. Nowadays, many surgeons follow this technique in partial fistulectomy followed by *ksharsutra* ligation, where partial tract is excised and at the level

of internal sphincter *ksharsutra* is ligated. This is called Sphincter-saving surgery.

b) *Suchimukhi* – In case of a simple fistula, a fine needle is inserted and then a burrowing incision is placed all around the needle and then tissue is excised around the needle, so that only the tract is excised and surrounding tissue is not injured.

c) *Avangamukha*– In cases, where the external opening is not visible, the probe is inserted from the inside and taken out from outside, over which the tract is laid open. This is called as retrograde fistulotomy now.

d) *Kharjura-patra* – If more than one opening is present, i.e. one primary tract and other secondary openings. Then in such condition, the multiple openings are connected leaving behind the main tract and upon the healing of secondary openings, the primary tract is treated.

Unmargi – In *agantuja bahagandara*, there would be gangrenous changes. *Susruta* advised cautery to remove the tissue and follow measures which would be helpful in destroying the infective organisms. Also, the procedures should be followed to remove the foreign body. In present day scenario, cautery is not advisable in gangrenous conditions, as it produces tissue reaction. But still, the principal of *Susruta* to remove the foreign body, which is responsible for the maintaining chronic infective process along with the debridement of devitalized tissue holds true.

Tridoshaja – *Susruta* told it to be *pratyakhyaya* (incurable), because of the rapid course of disease and poor prognosis. This shows the ability of *Susruta* to decide depending upon the condition, 'when to cut & when not to cut'.

Postoperative Management [8] - *Susruta* was aware of the importance of postoperative care of the patient. He has explained in various treatise about the methods employed in postoperative period ranging from those for alleviation of pain to those which will help in wound healing.

For management of postoperative pain, *Susruta* has indicated the local application of *Anu taila.* The specialization of *Anu taila* is that it is prepared from wood of the crushing appliance used in extracting oil from sesamum which has absorbed oil for a long time .[9] This method is exactly what we understand by the word 'lyophilisation' today. In this special technique there is breakdown of bigger molecules into smaller, thus making it more bioavailable. The drug produced by this technique will have more rapid action of onset, which exactly desired of the drugs to be used for postoperative management.

The other method described for postoperative pain management by *Susruta* is to anoint the anal region of the patient with oil and the passing steam through a lid, or else patient should be made to sit immersed in a tub till waist in hot water so that pain may be relieved. This is exactly what we call today as 'SitzBath'. Other options advised are *Upnaha* (poultice), and internal administration of specially prepared alcoholic beverages etc. For local management of the wound various medicines having *shodhana* (antiseptic) properties are advised.

***Ksharsutra* – The hallmark of Ayurvedic Surgery in Present Era -** *Ksharsutra* is probably one of those modalities in ayurvedic surgery which has gained popularity and acceptance globally. Though, *Susruta* has described *Ksharsutra* in context of *nadivrana* (sinus), but at present it is ex-

tensively practised successfully in fistula-in-ano.

Do's &Don'ts[10]- *Susruta* has advised that even after the healing of fistulous wound the patient should avoid heavy exercises, sexual intercourse, riding on animal backs and heavy food for a year. These are the activities which directly or indirectly have effect on anal region and therefore can lead to reoccurrence. An area which is often ignored in contemporary science.

CONCLUSION

It is evident that *Susruta* was way ahead of his time, in his approach to the treatment of fistula-in-ano. Infact, he has described wide array of symptomatology under the umbrella of *bhagandara,* ranging from simple fistula-in-ano to complex cases involving multiple fistulas, horse shoe fistula and even the necrotizing infections involving the perineal region. His unique approach in treatment of fistula-in-ano according to the stage at which patient presents is an indicator of his efficient clinical acumen. *Susruta's* description of conservative management of *bhagandarapidika*, controlled suppuration, and description of various types of incision according to the presentation is a subject of further research and evaluation. Also, the prohibitions told by *Susruta* should be evaluated in order to prevent the chances of reoccurrence, a major drawback of modern day treatment of fistula-in-ano.

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