ORGINAL ARTICLE

Overview of Kshar-sutra in treatment of Ano-rectal diseases- review of cases treated at ACTH in 2011-2012 : A Retrospective study

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ABSTRACT:

Background: Anorectal disorders including Fissure in Ano, Fistula in Ano and hemorrhoids are among the most common digestive complications. To our knowledge there has no any retrospective study of previous medical record data of Ayurveda Campus and Teaching Hospital (ACTH), Institute of Medicine, Tribhuvan University, Kirtipur, Kathmandu, Nepal available on the prevalence of major anorectal problems. Therefore, this retrospective was carried out to analyze the medical record of Shalya department OPD in fiscal year 2011-12 A.D. to estimate the prevalence of anorectal problems among the patients of anorectal complaints. Materials and Methods: This was a retrospective study conducted from January 2020 to December 2020 A.D. All the patients visiting the Department with anorectal complaints were screened. Name, sex, age, address and diagnosis was entered into Microsoft excel 2016 from registers of medical record; and analyzed in SPSS Version 2021 after coding the variables in excel. The findings were presented with percentage and frequency in pie and bar diagram. Results: Overall, anorectal cases (n=1067) were enrolled and analyzed in the study. The findings of major anorectal diseases like Fissure in Ano, Fistula in Ano and Hemorrhoids were commonly found in age group of 21-30 year; and followed by 31-40 year and 41-50 year. Fistula in Ano was also significantly found in the old age group of 61-70 year. Further more, the prevalence of Fissure in Ano, Fistula in Ano, Internal and External Hemorrhoids were 20%, 32%, 31.2% and 12% among ano-rectal problems in this Hospital during this fiscal year respectively. Conclusion: Anorectal diseases are one of the common diseases observed in adolescent and adult patients which is more common in male than female. The prevalence of Hemorrhoids is higher among Fissure in Ano and Fistula in Ano. Ksharasutra is the most effective procedure for treatment of these anorectal diseases.

Keywords: Ksharasutra, Fistula in Ano, Fissure in Ano, Hemorrhoids, Anorectal diseases, Prevalence.

INTRODUCTION:

Anorectal disorders (Guda roga) including Fissure in Ano, Fistula in Ano and Hemorrhoids are among the most common digestive complications. Rectum is the distal part of large intestine which stores the faces; and anus is the lower opening of gastrointestinal tract for passage of stool and is formed of sphincter muscles. The anal canal begins from the ano rectal junction and ends
at the anal verge that measures about 4 cm in length. The midpoint of the anal canal is called the dentate line. This dentate or pectinate line divides the squamous epithelium from the mucosal or columnar epithelium. Four to eight anal glands drain into the crypts of Morgagni at the level of the dentate line. Most rectal abscesses and fistulae originate in these glands. The dentate line also delineates the area where sensory fibers end. Above the dentate line, the rectum is supplied by stretch nerve fibers where pain nerve fibers are not found. This allows many surgical procedures to be performed without any anaesthesia above the dentate line.\(^2\) National Institute of Unani Medicine from May 2016 to April 2017. Demographic data, reason for consultation and Ano rectal examination was done for each patient. Higher prevalence (36.20\%) Conversely, below the dentate line, there is extreme sensitivity and the peri-anal area is one of the most sensitive areas of the body. The evacuation of bowel contents depends on action by the muscles of both the involuntary internal sphincter and the voluntary external sphincter.\(^3\)

Symptomatology of Anorectal problems are commonly presented with pain, bleeding per rectum, discharge per rectum, anal pruritus, mass around anus, mass during defecation, faecal impaction, constipation or difficulty in passing stool and faecal or flatus incontinence.\(^4\)

Fistula in Ano is an inflammatory disease that forms a tract in the anal region with a primary internal opening in the anal canal and a secondary external opening on the perianal skin. Even after several advancements in fistula treatment, failures are quite high.\(^4\) It has been considered a notorious disease to treat due to its recurrence and incontinence. The chances of recurrence in different types of anal fistulae range between 7-50 percent.\(^5\)

Internal or external or thrombosed hemorrhoids (Arsha), acute or chronic Fissure in Ano (Parikartika), low or high Fistula in Ano (Bhagandhara), perianal; ischio-rectal and Abscesses (Vidradhi), Polyps, Rectal prolapse (Gudabhramsa), Anal skin tags or Sentinel pile (Suskarsha), Pilonidal sinus (Nadi Vrana), Rectal ulcer, Strictures of anal canal or Rectum, Inflammatory Bowel Disease (IBD), Neoplasm’s (benign or malignant) are commonly observed Anorectal lesions in daily practices.\(^6\)\(^7\)\(^8\)

Hemorrhoids are an extremely common Anorectal condition, affecting approximately 10 million persons per year. One study estimated that more than 50\% of the US population over age 50 years has experienced hemorrhoids.\(^9\)\(^10\)

A study in India by Chaudhary et al. (2019) reported that prevalence of Fissure in Ano among patients with anorectal complaints was found to be around 18\%. Mixed dietary habits and constipation could be considered as risk factors for the fissure in Ano.\(^11\)

In context of Nepal, a study reported that 2.0\% of individuals over 18 years old had experienced rectal bleeding.\(^12\) Bhandari et al. (2020) conducted a cross-sectional study in rural area in 1768 patients; and reported that about 24 percent of patients in rural area had Fissure in Ano.\(^13\)

Major problems faced during the Fistula in Ano treatment are, extensive mutilation of anorectal and ischio-rectal area, prolonged Hospitalization, high rate of recurrence (21–36\%) and division of sphincter muscles leads to incontinence of faeces (3-7\%).\(^14\) Complications like sphincter incontinence, stricture, continuous pus discharge, etc., following the treatment are sometimes more severe than the disease.

Kshara-Sutra lost its popularity among Ayurvedic surgeons because of brevity of preparation and inadequate explanation of application procedure in the past. Later on effort of Dr. P.J. Deshpande, brought back the usefulness of Ksharasutra for treatment of nadi vrana and bhagandara.\(^15\) At present, treatment of Fistula in Ano, Piles and other anorectal problems with the help of Kshar-sutra is very popular among ayurvedic as well as allopathic surgeons.\(^16\)

Studies are very rare on focusing Anorectal related diseases and its management by Ksharasutra in Nepalese population. Therefore, the retrospective study had been conducted to analyze medical record of Shalya department of Ayurveda Campus and Teaching Hospital, Institute of Medicine, Tribhuvan University, Kirtipur, Kathmandu, Nepal to estimate the Hospital based prevalence of anorectal disorders and application of Kshara-sutra in the fiscal year 2011-2012 A.D.

**MATERIAL AND METHODS:**

A retrospective study was carried out using quantitative methods. A total 1696 patients visited in Shalya department of Ayurveda Campus and Teaching Hospital during fiscal year 2011-12 was entered in Microsoft excel 2016 and after
coding the variables; medical record data; and was analyzed in SPSS version 21 software. The findings were presented in frequency and percentage using bar and pie charts.

**Selection Criteria:** Medical record of Shalya Department, Ayurveda Campus and Teaching Hospital, Kirtipur in fiscal year 2011-2012 A.D. was segregated into inclusion and inclusion criteria as per the flow diagram presented in figure 1.

**Inclusion Criteria:** Piles, Fistula in Ano, Fissure in Ano, Pilonidal sinus and Sentinel tag was included. Patients’ age and sex was also included.

**Exclusion Criteria:** Other diseases were excluded from the study.

**Figure 1:** Medical record of total patients (n = 1696), Inclusion of patients having Anorectal problems (n = 1067), Exclusion of patients having other diseases (n = 297) and Missing diagnosis of patients (n = 332). Source: Medical records of Ayurveda Campus and Teaching Hospital FY 2011-2012

**RESULTS:**

**Gender of the Patients:** In this medical record data analysis of Shalya department of ACTH during 2011-12 A.D., male patients of anorectal diseases were found about two third (72%) of the total patients of anorectal diseases (n =1067).

**Figure 2:** shows percentage Gender (I A) and Grade of hemorrhoids (I B); First grade (I), Second grade (II), Third grade (III), Fourth grade (IV) and hemorrhoids in total (V) visited in ACTH during fiscal year 2011-12 A.D.

Female patients were recorded only 28%. It indicates that adult male are more affected by the anorectal diseases than female. It may also be the reason that in Nepalese society, females are reluctant to share about problems related to private part of the body (Figure 2A).

**Grade of Hemorrhoids:** In this medical record analysis (n=1067), in total 31.2 % of Internal hemorrhoids (V) was found; and about 10% of the hemorrhoids was further diagnosed as First grade (I), Second grade (II), Third grade (III) and Fourth grade (IV) hemorrhoids which were 1.4%,
4.2%, 3.3% and 1.3% respectively. Among the grade of hemorrhoids, the second and the third grade were the higher percentage which was 4.2% and 3.3% respectively (Figure 2B). It shows that patients become more anxious about progression of the disease into second and third grade; and they visit the Hospital for treatment.

**Age Group of the Patients and Major Anorectal Diseases:**

In this analysis, Fissure in Ano was found higher (8.72%) in the age group of 21-30 year and followed by age group of 31-40 year and age group of 41-50 year which was 4.40% and 2.62% respectively (Figure 3A). Similarly, Fistula in Ano was higher (9.37%) in the age group of 21-30 year; and followed by age group of 31-40 year, 41-50 year, 51-60 year and 61-70 year which were 6.00%, 4.87%, 4.69% and 4.59% respectively (Figure 3B).

**Figure 3:** Shows percentage of Fissure in Ano (2A), Fistula in Ano (2B), External Piles (2C) and Internal Piles (2D) in different age group of patients visited in ACTH during fiscal year 2011-12 A.D.

Likewise, External Piles was found higher (4.59%) in the age group of 21-30 year; and followed. External Piles was higher (4.59%) in the age group of 21-30 year and followed by the age group of 31-40 year and 41-50 year which were 2.81% and 1.87% respectively (Figure 3C). In the same way, Internal Piles was found higher (10.87%) in the age group of 21-30 year; and followed by 31-40 year, 41-50 year, 51-60 and 61-70 year which were 7.22%, 5.53%, 3.28% and 2.25% respectively (Figure 3D). The anorectal diseases; Fissure in Ano, Fistula in Ano, External and Internal Piles were gotten higher in age group of 21-30 year and followed by age group of 31-40 year, 41-50 year and 51-60 year. Fistula in Ano was also significantly found in the age group of 61-70 year.

The above findings show that major anorectal problems start to progress in adolescent and become major anorectal problem in adulthood. Hence, Fissure in Ano, Fistula in Ano, External and Internal Piles are the major health problems of adult age group; and Fistula in Ano continues to the old age.

**Resident of the Patients:** Patients were visited from 55 out of 75 districts of the country in the fiscal year 2011-2012 A.D. Most of the patients were from Kathmandu (59.1%) followed by Lalitpur (10.6%), Bhaktapur (4.6%), Nuwakot (1.6%), Sarlahi (1.1%), Sunsari (1.1%) and Kailali 1% districts. Rest of the districts recorded fewer patients’ visit to ACTH during the year.
Hospital Based Prevalence of Ano-rectal Diseases

In total 1067 out of 1696 patients was included in the study who visited to Shalya department OPD of ACTH with complaint of Anorectal problems in the fiscal year 2011-12 A.D. In this medical record data analysis, internal hemorrhoids was found 31.2% and external hemorrhoids was 12%. In total Piles (Internal and external hemorrhoids) was showed 43% that was the highest prevalence of the disease among anorectal problems in this Hospital during this fiscal year. About 10 % of internal hemorrhoids was further diagnosed as 1st, 2nd, 3rd and 4th grade hemorrhoids which were 1.4%, 4.2%, 3.3% and 1.3% respectively. Furthermore, Fistula in Ano and Fissure in Ano were found 32% and 20% among all the anorectal problems which were the second and third highest prevalence respectively. Pilonidal sinus and Sentinel tag were diagnosed 3% and 2% respectively. Moreover, some of the patients were diagnosed more than one diseases like Fissure in Ano with hemorrhoids or Fistula in Ano or with Sentinel tag. Other ano-rectal diseases were anal abscess, anal lesion, anal papilloma, anal stenosis, anal ulcer, bleeding P/R, colon cancer, constipation, pruritus ano, Rectal prolapse and Rectal polyp.

Kshara-sutra Application: Ksharasutra is a parasurgical procedure usually applied for anorectal problems such as Fistula in Ano and Hemorrhoids. A medicated thread is applied in the fistula tract and tied it through the openings of the tract. Similarly, bulge of the Hemorrhoids is tied at base with the thread which cuts the tissues and heal it. The result was found that 20% patients of Fistula in Ano and 6 % patients of Hemorrhoids with multiple grade was visited to the Hospital for Ksharasutra application during the fiscal year. It indicates that Ksharasutra procedure is only applied to the particular diagnostic features of the above diseases.

Follow up: In this retrospective study, 58% patients were visited to the Hospital more than one time whereas 42% patients were visited only one time for management of their anorectal problems. Most often, 10% of Fissure in Ano, 20% of Fistula in Ano, 12% of Internal Piles and 7% of External Piles patients were visited to the Hospital on their follow up. It shows that in general, Ayurveda management including Ksharasutra procedure is effective for the anorectal problems.

DISCUSSION:

In Nepal, adult male is more affected by the anorectal diseases than female. It may also be the reason that in Nepalese society, females are reluctant to share about problems related to private part of the body. Several studies show that Female patients were reluctant to disclose the anorectal problems and did not seek medical attention. An Indian semi urban study reported that 66.67% were males and 33.33% were female with Hemorrhoids after clinical examination which is in line with our analysis of medical record data.

In our retrospective study, the Hospital based prevalence of Fissure in Ano was found 20% among all anorectal cases treated at ACTH during 2011-12 A.D. In previous study, Fissure in Ano (FA) was affected both male and female and is common in young and adult population. A previous study shows that FA affects both males and females and is common in all age groups, especially young people, which supports this retrospective study. Study by Giridhar et.al. revealed the highest prevalence of FA in the group 21-30 years. Healing and side effects of topical 2% Diltiazem gel and lateral internal sphincterotomy in the treatment of chronic Fissure in Ano. In this prospective trial, 60 surgical out patients and/or admitted patients with chronic fissure in ano were randomly divided into Group 1 (Diltiazem gel Conceptually similar work has been carried out by another author in which the mean age of FA is 40.13 years. Despite advancements and extensive investigations; the exact etiology of anal fissure is still unknown. However, a possible cause of fissure could be either direct trauma from passage of hard stool or diarrhea or the spasm of internal sphincter muscle leading ischemia to the affected area. A previous study conducted by Bhandari et.al. (2019) reported that the highest percentage of FA was found in 21.7% and 21% of patients during winter and pre-winter simultaneously. Besides winter, FA in rainy season was found significant. In Nepal, Yadav et.al. surveyed that was found 28.7% % of Fissure in Ano which is near about our finding of Hospital based prevalence of the disease. Previous studies do not support direct evidence for winter and rainy seasons being a cause for FA. However, constipation and diarrheal episode may have been the main indirect factor linked. Studies showed that constipation which prevailed during winter, contributes 25% for FA and diarrhea episode which increased during rainy season is considered as predisposing factor for FA.
most commonly recorded in age group 21-30 year; and followed by age group of 31-40 year and 41-50 year.

In a previous study, most patients with Fistula in Ano was between the ages of 20 and 60 with mean age of 40 in both genders.\textsuperscript{29} Sainio reports that men were afflicted twice as frequently as women\textsuperscript{29} which supports our study. In Nepal, Yadav\textit{et al.} surveyed that was found 2.2\% of Fistula in Ano which is vast difference from our Hospital based prevalence of the disease. In a previous study reported that the mean age of the patients was 38.3 years. A study conducted in UK reported that most patients of Fistula in Ano was aged between 40 and 59 years or between 20 and 39 years. The United Kingdom-standardized point prevalence estimate of Fistula in Ano was 1.35 (95\% CI: 1.23-1.48) per 10000 patients in 2017 and the Europe-standardized estimate was 1.39 (95\% CI: 1.26-1.52) per 10000 patients\textsuperscript{31} which most commonly develops from an infected anal crypt. While the majority of anal fistulas are idiopathic, they are also associated with Crohn’s disease (CD).

In our retrospective study, Hospital based prevalence of internal and external Hemorrhoids were found 31.2\% and 12\% among all anorectal cases treated at ACTH during 2011-12 A.D. respectively. It was most commonly recorded in age group 21-30 year and followed by age group of 31-40 year and 41-50 year. An Indian semi urban study conducted by Ravindranath\textit{et al.} (2018) revealed that Hemorrhoids are one of the common diseases observed in patients below 40 years of age.\textsuperscript{21} Also called piles are masses or clumps of tissues which consist of muscle and elastic fibers with enlarged, bulging blood vessels and surrounding supporting tissues present in the anal canal of an individual. This condition is a common ailment among the adults. The actual burden of the disease remains unknown. Hence author had undertaken this study to assess the incidence and the risk factors of this disease among the patients in the area. 63 patients between the ages 20 and 80 who had come to the outpatient ward with hemorrhoids were included into the study. The demographic details from all the patients were noted. Their dietary habits, bowel habits, amount of physical activity, smoking and alcohol use as well as over the counter medication use were noted in detail. Out of the 63 patients under study, 66.67\% were males and 33.33\% were females, with the most common age group affected was below 40 years of age. Less than 40\% of the patients were vegetarians, with more than half of the patients having a mixed diet. More number of women history of hemorrhoids in their family (47.6\%). This was in concordance to the study conducted by Ali\textit{et al.} (2017), where the most common age group was 20-39 years.\textsuperscript{24} A slightly higher age prevalence was reported by Pigot\textit{et al.}\textsuperscript{35} This was contradicted in a study by Khan\textit{et al.}, who observed that patients above 40 years of age were more at risk than those below.\textsuperscript{26} Our study also reported that Hemorrhoids was found below 40 year. This may be because of dietary habit and geographical location.

A study in Nepal reported that Hemorrhoids (31.2\%) was the most prevalent anorectal disorder.\textsuperscript{26} This is also similar to our findings of internal Hemorrhoids. Geraldine\textit{et al.} (2017) reported 25\% of prevalence of Hemorrhoids in his study which is in line with our findings.\textsuperscript{20}

Ksharsutra (Medicated seton) is the most widely used treatment for fistula in Ano and Hemorrhoids in India and Nepal. Success rate and non-recurrence are surely appreciable but weekly sittings and pain during changing of Ksharsutra make it difficult for the patient to pursue the treatment.\textsuperscript{35} Ksharasutra (medicated seton) therapy is being practiced in India with high success rate (recurrence of 3.33\%) in the management of complicated Fistula in Ano.\textsuperscript{35}

In this analysis, 58\% patients were visited to Shalya department OPD of ACTH on multiple follow up whereas 42\% didn’t continue follow up for their complaints. It may be because of relief of complaints from single visit or treatment course.

**CONCLUSION**:

The most of the anorectal problems start in adolescent and progress with consequences in adult. The prevalence of Fissure in Ano, Fistula in Ano, external and internal Hemorrhoids among patients in the fiscal year with anorectal complaint were found to be 20\%, 32\%, 31.2\% and 12\%. Ksharasutra is the most effective procedure for treatment of these anorectal diseases.

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ABBREVIATION:

OPD = Outdoor patient department

ACTH = Ayurveda Campus & Teaching Hospital

P/R = Per rectum

FA = Fissure in Ano

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