

Prevalence of Benign Anal Conditions in Patients using Hand in Comparison with Jet Flush or Bidet Flush for Cleaning Anal Region after Defecation in a Tertiary Care Teaching Institute Puducherry

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Abstract: ***Introduction:** Anal hygiene or anal cleansing refers to hygienic practices that are performed on a person's anus, usually shortly after defecation. In water based cleaning either a hand is used for rubbing the area against running water and in bidet systems or jet flushes pressurized water does the job of cleaning. Repeated hitting of the anus by water stream could potentially cause injury to the anal canal epithelium and lead to development of benign anal conditions. There are several studies on prevalence of benign anal conditions but only few studies are available regarding using hand in comparison with jet flush or bidet flush. Hence, the study was undertaken. **Objectives:** To determine the prevalence of benign anal conditions in patients using hand and jet flush or bidet flush after defecation and to compare both techniques of anal cleansing and find out the better method for anal hygiene to be practiced after defecation. **Methods:** A Cross-sectional study was conducted in tertiary care teaching hospital from September 2021 to November 2021 on 161 patients in general surgery department with complaints of benign anal conditions. After taking consent, the data was collected regarding patient details; the type of anal cleansing technique using a questionnaire and per rectal examination was carried out to confirm the diagnosis. Data was entered in Microsoft- Excel and analysed using SPSS version 20.0. **Result:** The prevalence of Benign anal conditions in subjects using Jet flush was found to be 52.2% and subjects who used Hand for washing was 47.8%. Fissure in ano was observed to be more in subjects 80(49.7%) who were using Jet flush for anal cleansing and found to be statistically significant ($p < 0.05$). Fistula in ano was seen more in subjects who used hand for washing. **Conclusion:** The prevalence of Benign anal conditions in subjects using Jet flush was found to be high when compared to subjects who used Hand for washing. Fissure in ano was observed to be more in subjects who were using Jet flush for anal cleansing. Water used as a sharp stream to cleanse after defecation is hazardous and should be avoided. Hand for washing can be considered as better method for anal hygiene to be practiced after defecation.*

Keywords: Anal cleansing, Anal hygiene, Bidet flush, water, Jet flush

1. Introduction

Anal hygiene or anal cleansing refers to hygienic practices that are performed on a person's anus, usually shortly after defecation. The scientific objective of post defecation cleansing is to prevent exposure to pathogens.¹ Methods for cleansing the peri-anal region after defecation differ around the globe. The process of post defecation cleansing involves either rinsing anus and inner buttocks with water or wiping the area with dry materials such as toilet paper.^{2,3}

Water used as a single sharp stream in toilet commode for post defecation cleansing is a common practice in several countries across the globe including India. In water based cleaning either a hand is used for rubbing the area against running water and in bidet systems or jet flushes pressurized water does the job of cleaning. Anal cleansing techniques play a very important role in the mechanism of different benign anal conditions. Repeated hitting of the anus by water stream could potentially cause injury to the anal canal epithelium and lead to development of benign anal conditions.⁴ Different benign anal conditions are: Fissure in ano, Hemorrhoids, Fistula in ano, Pruritis ani, Anal skin tags, Anorectal abscess, Interspincteric abscess.⁵

Study rationale:

There are several studies on prevalence of benign anal conditions but only few studies are available regarding using hand in comparison with jet flush or bidet flush. Hence, the present study was undertaken.

Aim:

To determine the prevalence of benign anal conditions in patients using hand and jetflush or bidet flush after defecation.

Objectives:

- 1) To determine the prevalence of various benign anal conditions in patients using hand and jet flush or bidet flush after defecation for anal hygiene.
- 2) To compare both techniques of anal cleansing and find out the better method for anal hygiene to be practiced after defecation.

2. Materials and Methods

The present cross-sectional study was undertaken in a tertiary care teaching hospital, Sri Venkateshwaraa Medical College Hospital and Research Centre at Puducherry by involving 161 patients in General Surgery department from September 2021 to November 2021.

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The study population comprised patients with Benign anal conditions. The sample size was calculated based on it and using the formula $n = 4pq/d^2$, Where n = sample size, p =proportion of benign anal condition; $p= 55.9\%$, $q=100-p$; $q=44.1\%$, d =absolute precision of 8%. The final sample of 154 was arrived and approximated to 160.⁴

After obtaining institutional ethics committee clearance, study subjects were enrolled from the Outpatient department of General Surgery by Convenient sampling technique after applying inclusion and exclusion criteria.

Inclusion criteria:

- 1) Age above 18 years
- 2) Both males and females
- 3) Benign anal conditions after confirming by examination.

Exclusion criteria:

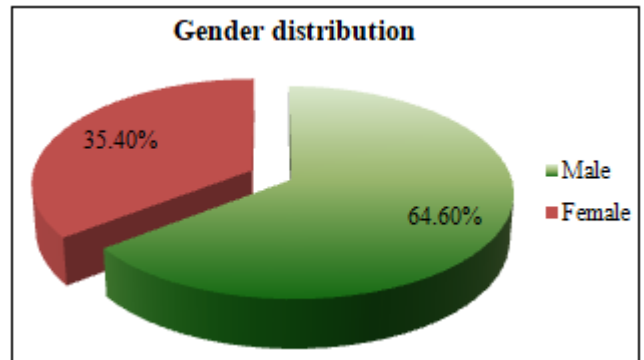
- 1) Children
- 2) Pregnant women
- 3) Immunocompromised patients
- 4) Malignant anal conditions

The interview method was used to collect data on socio-demographic details such as patient’s name, age, gender, the type of anal cleansing technique by using a pre-tested, semi-structured questionnaire after informed written consent from the subjects. Examination such as Per rectal examination was carried out on study subjects.

Data was entered in Microsoft- Excel and analysed using SPSS version 20.0. Categorical variables such as frequency and proportions were used. Chi square test was used to find the significant association between categorical variables. p-value less than 0.05 was considered to be statistically significant.

3. Results

In the present study, the mean age of the subjects was 38.2 ± 10.2 years with range from 17 to 70 years. Out of 161 subject, 104 (64.6%) were males and 57 (35.4%) were females.



Graph 1: Pie chart showing distribution of study subjects according to gender

Table 1: Age and gender distribution of study subjects (n=161)

Age group (years)	Male	Female	Total
≤ 20 yrs	3(1.9)	2(1.2)	5 (3.1)
21 – 30 yrs	23(14.3)	17(10.6)	40 (24.8)
31 – 40 yrs	45(28)	17(10.6)	62 (38.5)
41 – 50 yrs	24(14.9)	14(8.7)	38 (23.6)
51 – 60 yrs	5(3.1)	5(3.1)	10 (6.2)
>60 yrs	4(2.5)	2(1.2)	6 (3.7)
Total	104(64.6)	57(35.4)	161 (100)

Figures in parenthesis indicate percentage.

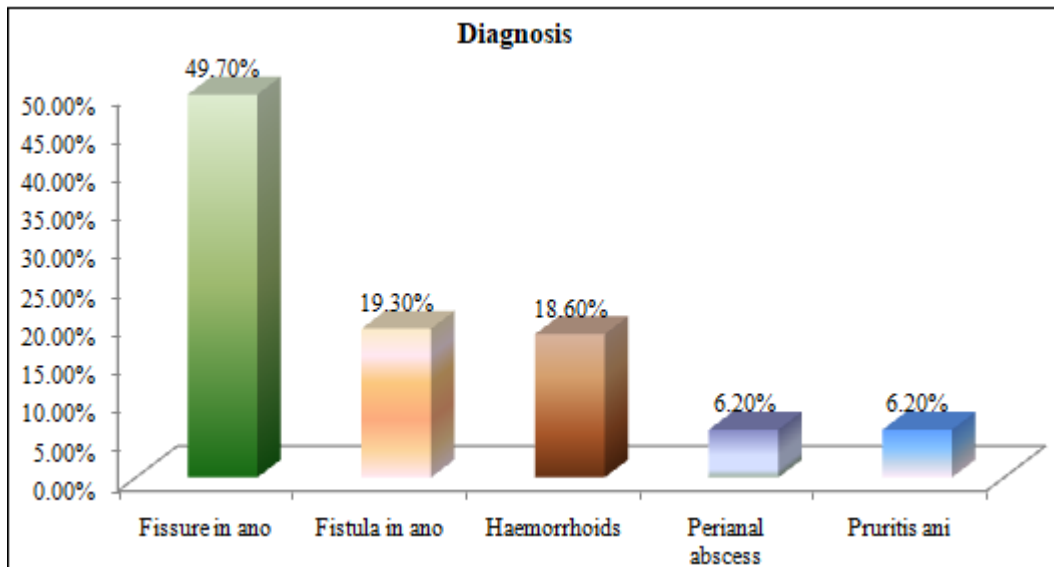
Majority i.e. 62 (38.5%) of the subjects were in the age group of 31-40 years. Among them 45(28%) were males and 17(10.6%) were females. Followed by 40(24.8%) were between 21-30 years which included 23(14.3%) males and 17(10.6%) females respectively. (Table 1)

Table 2: Distribution of study subjects based on Diagnosis(n=161)

Diagnosis	Male	Female	Total
Fissure in ano	50(31.1)	30(18.6)	80(49.7)
Fistula in ano	21((13.0)	10(6.2)	31(19.3)
Haemorrhoids	23(14.3)	7(4.3)	30(18.6)
Perianal abscess	4(2.5)	6(3.7)	10(6.2)
Pruritis ani	6(3.7)	4(2.5)	10(6.2)
Total	104(64.6)	57(35.4)	161(100)

Figures in parenthesis indicate percentage.

In this study, 80(49.7%) of the study subjects were diagnosed Fissure in ano followed by 31(19.3%) of the subjects were diagnosed Fistula in ano. 30(18.6%) were found to have Haemorrhoids, 10(6.2%) had Pruritis ani and 10(6.2%) had Perianal abscess. Among males, 50(31.1%) of the subjects were diagnosed Fissure in ano and among females, majority 30(18.6%) were diagnosed Fissure in ano. (Table 2)



Graph 2: Component Bar chart showing distribution of Distribution of study subjects based on Diagnosis

Table 3: Distribution of study subjects based on Anal Cleansing Techniques (n=161)

Anal Cleansing Technique	Male	Female	Total
Hand for Washing	45(28.0)	32(19.9)	77 (47.8)
Jet Flush	59(36.6)	25(15.5)	84 (52.2)
Total	104(64.6)	57(35.4)	161 (100)

Figures in parenthesis indicate percentage.

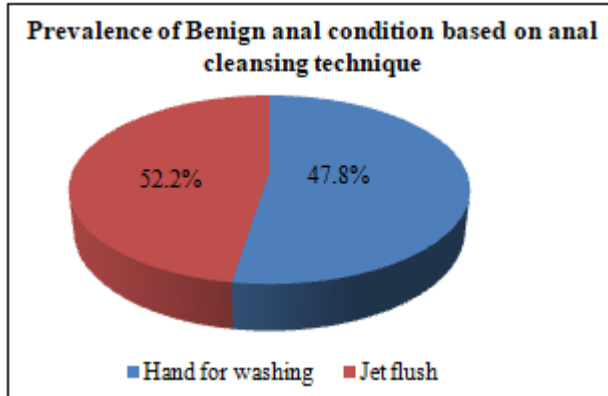
Majority i.e. 84 (52.2%) of the subjects used Jet flush for anal cleansing followed by 77 (47.8%) used Hand for washing anal region. (Table 3)

Table 4: Comparison of both technique of anal cleansing with diagnosis of study subjects:

Diagnosis	Anal Cleansing Technique		Total
	Hand for Washing	Jet Flush	
Fissure in ano	31(19.3)	49(30.4)	80 (49.7)
Fistula in ano	22(13.7)	9(5.6)	31 (19.3)
Haemorrhoids	15(9.3)	15(9.3)	30 (18.6)
Perianal abscess	5(3.1)	5(3.1)	10 (6.2)
Pruritis ani	4(2.5)	6(3.7)	10 (6.2)
Total	77(47.8)	84(52.2)	161 (100)
Chi Square test value = 9.615		P value = 0.047 (P<0.05)	

Figures in parenthesis indicate percentage.

Out of 161 study subjects,84(52.2%) of the subjects who used Jet flush for anal cleansing had Benign anal conditions which was high compared to 77(47.8%)of those used hand for washing as anal cleansing technique. There was significant association between Anal cleansing technique and Benign anal conditions.(P <0.05).(Table 4)

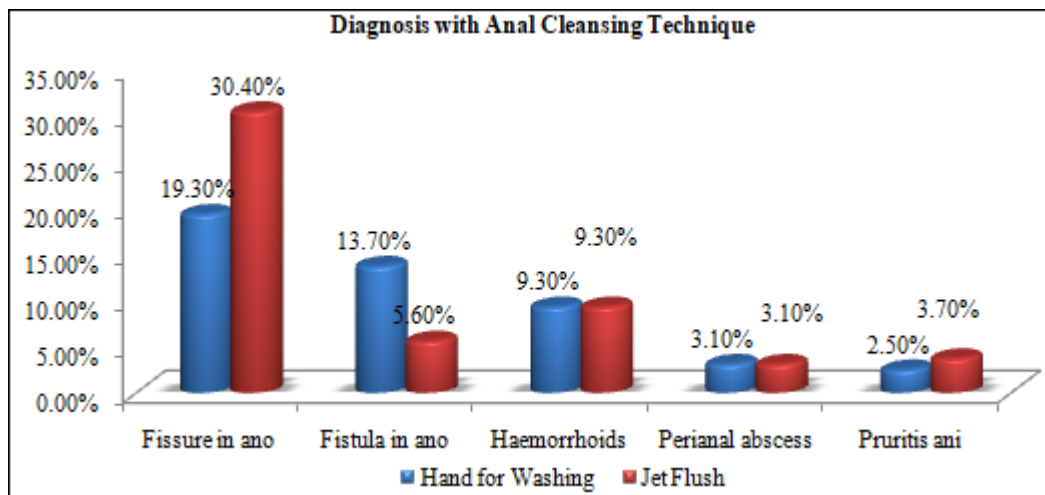


Graph 3: Pie chart showing Prevalence of Benign anal conditions based on anal cleansing technique

The prevalence of Benign anal conditions in subjects using Jet flush was 52.2%

The prevalence of Benign anal conditions in subjects using Hand for washing was 47.8%

Among 84(52.2%) subjects who were using Jet flush, Majority 49(30.4%) subjects had Fissure in ano and among 77(47.8%) of those used hand for washing as anal cleansing technique, most of them 22(13.7%) had Fistula in ano. Out of 30 (18.6%) subjects of Haemorrhoids, 15(9.3%) were using Jet flush and 15(9.3%) were using hand for washing. 10 (6.2%) subjects had Perinatal abscess, 5(3.1%) were using Jet flush and 5(3.1%) were using hand for washing. Out of 10 (6.2%) subjects of Pruritis ani, 6(3.7%) were using hand for washing and 4(2.5%) were using Jet flush.(Table 4)



Graph 4: Multiple bar chart showing Distribution of study subjects based on Benign anal conditions with anal cleansing technique

4. Discussion

This study was conducted to determine the prevalence of various Benign anal conditions based on anal cleansing technique and to compare both techniques of anal cleansing and find out the better method for anal hygiene to be practiced after defecation. Overall, the results showed that the prevalence of Benign anal conditions in subjects using Jet flush was 52.2% and subjects using Hand for washing was 47.8%. Similarly, a study conducted in Mohaliby Pankaj Garg et al found that the incidence of fissure in ano was 55.9% in the group using water stream which was significantly higher than the control group.⁴

In contrary to this, the present study showed prevalence of Fistula in ano was high among subjects 22(13.7%) used hand for washing.

In the present study, there was a predominance of male subjects (64.6% vs 35.4) and majority of study subjects were aged between 31-40 years which is similar to a study conducted by Varadarajan MS et al., among 325 subjects from Tamil nadu with anorectal ailments, majority 54% were males and under 40 years.⁶

In this study, Out of 161 benign anal conditions, most of them i.e 80(49.7%) had Fissure in ano and among 80 subjects, 49 were using Jet flush for anal cleansing. Similarly a study conducted by Pankarjgarg et al in Mohali showed that the incidence of fissure in ano was 55.9% in the group using water stream.⁴

Another study conducted by Khan RM et al., showed that 15.6% subjects were found to have anal fissure and a study conducted by Varadarajan MS et al., among 325 subjects from Tamil nadu with anorectal ailments, 30.7% had anal fissures. Previous study conducted by Ranjit Chaudhary et al in Bhopal showed that the prevalence of anal fissure was 18%.^{7,6,8}

In this study, benign anal conditions like haemorrhoids, perianal abscess and pruritis ani have no much significant difference with anal cleansing technique.

5. Conclusion

- 1) The prevalence of Benign anal conditions in subjects using Jet flush was found to be 52.2%
- 2) The prevalence of Benign anal conditions in subjects using Hand for washing was 47.8%
- 3) Among Benign anal conditions, Fissure in ano was observed to be more in subjects who were using Jet flush for anal cleansing and found to be statistically significant. Water used as a sharp stream to cleanse after defecation is hazardous and should be avoided. Hand for washing can be considered as better method for anal hygiene to be practiced after defecation.
- 4) In this study, Fistula in ano was seen more in subjects who used hand for washing.
- 5) Benign anal conditions such as Haemorrhoids, perianal abscess and pruritis ani has no significance with jet flush or hand for washing technique.

6. Future Scope

Further studies are needed in different population to confirm the study results and it helps in reducing the burden of benign anal conditions.

Ethics approval and consent to participate

Institutional ethical clearance was obtained and informed consent was taken from study subjects. Institutional Ethics Committee

My manuscript does not involve the use of any animal or human data or tissue.

Conflicts of Interest: Nil

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