ANAL FISSURES; REGIONAL EPIDEMIOLOGY, SYMPTOMATIC PRESENTATION, INTERVAL AND QUALITY OF LIFE

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ABSTRACT

Objective: Anal fissures epidemiology, proportion of anterior and posterior location, gender based difference in location, risk factors and its association with anal fissure location. Moreover, to quantify quality of life and report average symptomatic presentation interval.

Material and Methods: This descriptive analytical study was conducted in Department of Surgery and Department of OBS&GYN of Lady Reading Hospital, Peshawar, KPK. Nonprobability Consecutive sampling of total of 100 patients were sampled. 100 normal individuals from general population were separately sampled with SF-12 for the purpose of comparison of quality of life. IBM SPSS 23 was used as a tool to process data and run different tests.

Results: 55% were male and 45% were female. Age range of was 18-65 with mean age of 32.60 years (SD±11.69). Of total anal fissures patients, 84% had posterior anal fissures and 16% had anterior anal fissures. 38% reported history of constipation, 26% had diarrhea, 18% had history of anal or perianal surgery, and 15% attributed their disease to the vaginal deliveries. The mean symptomatic presentation interval was 19.64 days (SD±16.65). The mean score of SF-12 in patients was 26.16 (SD of 5.22) compared to 39.03 in general population.

Conclusion: Anal fissures commonly occur in posterior midline location equally in both genders and risk factors does not significantly affect the location of the anal fissure. Anal fissures badly affect quality of life and SF-12 may be used as an assessment tool to quantify quality of life in these patients.

Keywords: Anal fissure, quality of life, health survey.

INTRODUCTION

The estimated incidence of the anal fissure is 1 in 360 that is 0.28%[1]. No data on the prevalence of the disease in our area/country is available as anal fissures is usually an acute disease and resolves. The incidence is even higher in the developed countries like USA where it is 0.11%[2].

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Constipation, diarrhea, previous anal surgery, anal penetration and vaginal deliveries in are the common risk factors for benign anal fissures. Primary anal fissures are more common in young patients[3]. Constipation was historically thought as the cause of fissures because of injury to mucosa with the passage of hard stools; however it is now shown that the anal fissures have relation with increased internal anal sphincter tone. Anal fissures are also found secondary to under lying pathology like crohn's disease, ulcerative colitis, STDs/HIV, or malignancy. Anal fissures are uncommon in older age and if found must be investigated for a secondary cause[4].

The proportion of posterior midline anal fissures is 90%, anterior midline anal fissures 10% and less than 1% are lateral or multiple. The anterior fissures are more common in women owing to vaginal deliveries[5, 6].

Conservative management of acute anal fissures includes improving dietary and defecation habits. All patients are advised to take more liquid/water and fibers. Warm Sitz

bath can relax internal sphincter and relieves pain thus helping in fissure healing. These simple measures should be advised to all patients with primary anal fissures. Local anesthetics can be advised to reduce pain. It has been shown that 87% of acute anal fissures and 50% of chronic anal fissures are successfully treated with conservative management [7, 8]. Topical ointments and creams of nitroglycerine and diltiazem are first line medical treatment option for fissure. Lignocaine and hydrocortisone was once used but has poor healing rates. Botulinum injection into the anal sphincter is an option. Different surgical techniques have been adapted for chronic non healing fissures e.g. lateral internal sphincterotomy, advancement flap procedures and fistulectomy. Four fingers stretch technique was previously employed.

Anal fissures are second to hemorrhoids as a reason to visit proctology clinics in Italy[9]. While in England the incidence of hospitalization for anal fissures in the period 2005-2006 was 1.56 per 10000 people. In 2009, 5199 patients were seen for anal fissures in Italian coloproctology clinics of whom 37% underwent surgery[10].

It is believed that most of the lateral anal fissures (away from the midline) are secondary in nature and needs further investigations[11].

Considerable studies have been carried out about the treatment of anal fissures and comparison of different modalities of treatment both at local and international level. However, very little is known about the disease epidemiology, quantification of quality of life with the disease and delay in presentation to a doctor. Delay in presentation can subjectively increase the chances of treatment failure and worsening of quality of life with the disease.

This study aim to find out anal fissures epidemiology, proportion of anterior and posterior location, gender based difference in location, risk factors and its association with anal fissure location. Moreover, to quantify quality of life and report average symptomatic presentation interval.

MATERIAL AND METHODS

This descriptive analytical study was conducted in Department of Surgery and the Department of OBS&GYN of Lady Reading Hospital, Peshawar, Khyber Pakhtunkhwa. This hospital receives patients from across the province, Khyber Pakhtunkhwa. ERB certificate was obtained from ethical committee Lady Reading Hospital, Peshawar. Sampling was done from July 2019 to June, 2020. Non probability, Consecutive sampling was done in the outpatient department and in the in-patients, admitted for anal fissures. A total of 100 patients were sampled considering frequency of anal fissures as 0.27%[1] with 99% confidence limit and 2% margin of error. Additionally, 100 normal individuals (1:2) from general population were separately sampled with Short Form Health Survey (SF-12) for the purpose of comparison of quality of life.

Patients of age 15 years or above, both genders, who were diagnosed to have anal fissures were included. Patients not yet diagnosed or successfully treated or not consenting were excluded. Symptomatic presentation interval was defined as the days between the start of symptoms related to anal fissures and first visit to a registered medical practitioner for the same symptoms. It was measured in days (best recall). Short form 12 version 1 altered for the disease was used as a tool to quantify quality of life (SF-12 which was originally devised to quantify quality of life of the American general population). Reverse scoring was done for item no. 10 of SF-12. Maximum possible score was 48 and a minimum of 12. DATA was collected by interviewer administered questionnaire. Questions were asked in the native language of the patient.. With each question, patients were stressed to answer with respect to anal fissures and not any other disease state or social issue.

IBM SPSS STATISTICS 23 was used as a tool to process data and run different tests. Frequencies were calculated, chi square cross tabs were used to find association of anal fissure location with different risk factors. Cronbach's alpha was used as a reliability test for Likert scale of SF-12. SF-12 scores of study population and general population was tested for normality. T test was used to compare mean scores of SF-12 of the anal fissures patients and general population. Q-Q plots were created to test for normality of data. Spearman correlation coefficient was calculated for association of symptomatic presentation interval and SF-12 score of anal fissure patients. $p < .05$ was considered significant.

RESULTS

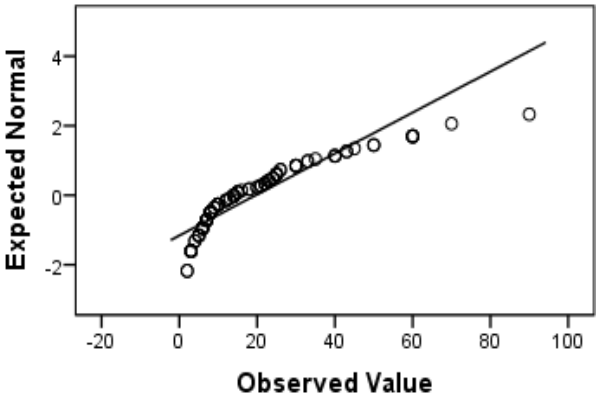

Fig.3 Q-Q plot of narmality of the symptomatic presentation interval.

Of the study population with (with anal fissures), 55% were male and 45% were female. In the general population sample 61% were males and 39% were females. The mean age of the population with anal fissures was 32.60 years with a standard deviation (SD) of 11.69. The mean age of general population was 32.62 years with SD of 11.71. Of total anal fissures patients, 84% had posterior anal fissures and 16% had anterior anal fissures. The occurrence of fissures away from midline was 10%. Among male, the proportion of posterior and anterior anal fissure was 81.81% and 18.18% while in females this proportion was 86.66% and 13.33% respectively. Most common occurrence of anal fissure was at 6 O'clock with frequency of 60%, 18% at 5 O'clock and 12 % at 12 O'clock. In the study population, 38% reported history of constipation, 26% had diarrhea, 18% had history of anal or perianal surgery, and 15% attributed their disease to the vaginal deliveries. The mean symptomatic presentation interval was 19.64 days with a SD of 16.65. The cross tab between anal fissure position and gender showed no significant correlation, (chi square) x^2= .433 (p= .511). Similarly, the cross tab between anal fissure location and history of constipation had x^2=2.99 (p= .083), with diarrhea x^2= .273 (p= .601), with history of surgery x^2= .007 (p= .932), and with vaginal delivery x^2= .093 (p= .760). None of the risk factors significantly affects the location of the anal fissures.

To test for the reliability of SF-12 Likert scale, Cronbach's alpha was calculated for both samples. For anal fissures patients sample Cronbach's alpha was .759 and for general population it was .792. The mean score of SF-12 in patients with anal fissures was 26.16 (SD of 5.22). The maximum score was 41 and minimum score was 17. Among the general population, the mean score was 39.03 with a maximum of 47 and a minimum of 25. The SF-12 score of both samples was normally distributed, Q-Q plot (figure 1 and 2). Means of the two samples were compared with t test, with t= -20.34 (p< .001) which shows significant difference.

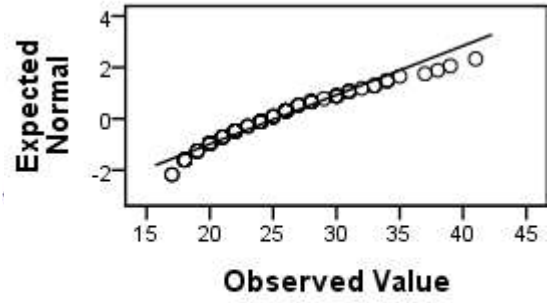

Fig. 1 Normality Q-Q plot of SF12 scores of patients with anal fissures.

Fig.2 Normality Q-Q plot of SF12 scores of the general population.

The symptomatic presentation interval was not normally distributed, Q-Q plot (figure 3). The spearman's correlation coefficient was calculated between symptomatic presentation interval and SF-12 score of patients with anal fissures and no significant correlation was found between them r=.063 (p= .534).

DISCUSSION

The location of anal fissures in our study population is similar to other reported studies; however the occurrence of lateral anal fissures i.e. away from the midline is considerably higher (10%) in our population than other studies (1%) [5,6]. It is believed that fissures in ano away from the midline are secondary to an underlying disease like tuberculosis, Crohn's disease or HIV. Further studies need to be conducted to determine how many of them are investigated and what underlying diseases occur and with what frequencies. No considerable variations exist between the location of AF in males and females.

Prevalence of risk factors vary among different reported studies as in our population 38% had history of constipation while in another study carried out in Sialkot, 85% population had history of constipation[1]. There is no significant difference in the location of anal fissure in males and females or in people with different risk factors like diarrhea, constipation, history of anal or perianal surgery or history of vaginal delivery just prior to development of anal fissure.

The SF-12 scores of the patients with anal fissures are significantly lower than the general population. Anal fissures badly drops the quality of life. This also shows that SF-12 can be

accurately modified to quantify a disease related quality of life, as in our case anal fissure. Similar studies used SF36 to assess quality of life before and after anal fissure treatment and observed considerable improvement in scores after topical treatment[12, 13, 14]. In another study, SF36 was used preop and six months after lateral internal sphincterotomy, and significant improvements in scores were observed[14]. In the assessment of success of a treatment modality for anal fissures, quality of life assessment in the form of SF-12 is equally effective.

The mean symptomatic presentation interval is fairly high (19.64 days). Early conservative treatment of anal fissures has higher success rates as compared to late treatment and chronicity. A study reported that healing rates of anal fissure in response to conservative treatment shows remarkable decrease in proportion to the duration of complaint[15]. A study conducted in France reported that 5 out of 6 individuals with proctologic problems conceal their symptoms[16]. Social constraints lead to delayed presentation and chronicity of the disease.

CONCLUSION

The acute anal fissures away from midline are considerably greater in our study as compared to other reports and needs proper consideration and workup in our population. SF-12 altered for disease may be effectively used to quantify and compare quality of life.

Author's contribution

1. Conceptualization, Research design, Data collection, Data interpretation, Critical Review of the article.
2. Conceptualization, Data collection, Drafting, Critical Review of the Article.
3. Research design, Data interpretation, Critical Review of the article.
4. Data collection, Data entry, Data analysis, Final approval of manuscript.
5. Data collection, Drafting, Data entry, Data analysis.
6. Research design, Data interpretation, Drafting.

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