# OUTCOME OF PERI-ANAL SURGERIES WITHOUT USE OF PROPHYLACTIC ANTIBIOTICS, IN TERMS OF POST OPERATIVE WOUND INFECTION

**Muhammad Asif, Ahsan Ali Mirza, Ayesha Saeed**

Pakistan Atomic Energy Commission (PAEC) Hospital Islamabad Pakistan

## ABSTRACT

***Objective:*** To determine the outcome of perianal surgeries without use of antibiotics in terms of post operative infection.

***Study Design:*** Descriptive study.

***Place and Duration of study***: Department of general surgery, Pakistan Atomic Energy Commission General Hospital, from Jan 2014 to Jun 2015.

***Material and Methods:*** All patients, both male and female admitted for hemorrhoidectomy, fistulectomy and lateral internal sphincterotomy for Anal Fissure with minimum 02 months follow-up were included in the study through non probability consecutive sampling technique. The selected patients were not administered any antibiotics pre or postoperatively. All these patients were followed up for any post-operative surgical site infection up to 02 months. Patients were advised only to take pyodine sitz bath regularly.

***Results:*** One hundred and eighty two patients were selected for the study. Patients mean age was 48.0 ± 11.4 years. 68.68% were male and 31.3% were female patients. In our study most frequent clinical presentation was hemorrhoids (37.9.0%), followed by anal fissure (33.5%). Least frequent clinical presentation was of anal fistula (28.57%). None of the patients developed surgical site infection post operatively.

***Conclusions:*** In our study we found that there was no additional beneficial role of prophylactic antibiotics in perianal surgeries Perianal surgeries can safely be performed without the use pre or post-operative antibiotics there by significantly reducing health care expenses.

**Keywords:** Anal Fissure, Fistula in ano (FIA), Fistulectomy, Hemorrhoid, Hemorrhoidectomy, Lateral Internal sphincterotomy (LIS).



## INTRODUCTION

Perianal pathologies are commonly encountered in surgical practice[1]. Fistula in ano (FIA) is very common disease of anus and rectum. It is very common in the populations worldwide. Fistula-in-ano, is a persistent pathological passage between the epithelium of the anus and the perianal skin. Prevalence of fistula in ano is second highest after hemorrhoids. The prevalence of fistula in ano in India in a defined population of some states, approx varied from 17 to 20%. In UK (London) hospital around 10% of all patients were reported to have this disease amongst anorectal diseases[2]. Hemorrhoidal disease has a very common clinical presentation with a prevalence of 4% of the adult population[3]. Haemorroids are dilated veins in the anal canal and sometimes in the rectum. They are usually caused by chronic constipation but some times related with chronic diarrhea. Major symptoms start with bleeding per rectum after defecation. Fissure in ano is the most common disease in surgical outpatient departments. It is a vertical superficial tear in anal canal just starting from anal verge and extending upward involving anoderm. However anal fissure is always distal to the dentate line. It is often associated with severe pain (cutting in nature), with scanty amount of bleeding during and after defecation. Bleeding usually presents as streaks of blood over stool or few drops following passage of stool. Fissures are mostly at 6 o'clock (posterior midline) or 12 o'clock (anterior midline) at anus usually associated with a sentinel tag. Skin tags indicate

**Correspondence: Dr Muhammad Asif,** General Surgeon PAEC Hospital Islamabad Pakistan *(Email: dr.asif394@yahoo.com)*
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chronic inflammatory changes. Few patients complain of swelling, pruritus and discharge. The Pathogenesis of anal fissure is unclear. A very common and acceptable theory says that raised resting anal sphincter pressure or anal muscle spasm causes comparative ischemia of mucosa of anal canal particularly in posterior midline tears, which results in persistence of internal sphincter hypertonia followed by hard stool due to constipation. It results in constant raised anal pressure[4]. Lateral internal sphincterotomy is gold standard treatment for anal fissure[5]. Haemorrhoidectomy, anal fistulectomies and anal sphincterotomies are generally considered contaminated operations due to bacterial colonization of anal wounds after such procedures[6]. Antibiotics may be administered to decrease the risk of postoperative wound infection[7]. Antibiotics used in such procedures are perhaps also due to a low but certain incidence of very severe postoperative perineal sepsis[8]. However frequency of postoperative infectious complications following these perianal procedures is very low at 0.5% to 1%. There is lack of evidence whether antibiotics should be given or not in such perianal surgeries[9]. Keeping above in view we conducted our study to assess the outcome of 3 different peri anal surgeries without the use of pre and post-operative antibiotics in terms of surgical site infection.

## PATIENTS AND METHODS

This prospective descriptive study was conducted from Jan 2014 to Jun 2015. Sample size was calculated by WHO calculator with 95% confidence interval, anticipated population proportion 4.5% and absolute precision 5%[10]. All the admitted patients undergoing open fistulectomy for low lying fistulae in Ano, open lateral internal sphincterotomy and open haemorrhoidectomy, were included in this study by non probability consecutive sampling technique. Patients with early haemorrorids requiring only bandings were excluded from the study. All surgeries were performed by surgical unit of our hospital. In most cases spinal anesthesia was administered and general anesthesia was given only to those patients where spinal anesthesia failed or patients opted for general anesthesia. One thing common in all these peri-anal procedures was that the wounds were not closed or stitched and were left as such. These open wounds were expected to heal by secondary intention. Patients were advised to take warm water sitz baths twice daily for 5 minutes after mixing 10ml of pyodine solution in the water. Sitz bath was started on 1st post-operative day and continued till wound started to granulate. Patients were asked to follow up in OPD till the wound started to heal by secondary intention. Maximum follow up time period was 02 months. No antibiotics were given to any patient. Data were collected with special focus on postoperative wound infection.

**Table: Demographive data and clinical presentations of patients undergoing perianal surgeries (n=182).**

| Variable | |
|---|---|
| Age, mean ± SD | 48.0 ± 11.4 |
| Male % (n) | 125 (68.68) |
| Female % (n) | 57 (31.3) |
| Anal Fissures % (n) | 61 (33.5) |
| Fistula in Ano % (n) | 52 (28.57) |
| Haemorrhoids % (n) | 69 (37.9) |

Wound infection was described as patients presenting with fever more than 38°C, severe pain at operation site, and pus discharge from the wound.

### Data Analysis

All statistics were recorded on a predesigned proforma and analysis was done by using SPSS 21. Mean and standard deviation were calculated for the quantitative variables like age. Categorical

variables were presented by frequency and percentage.

## RESULTS

In total, 182 patients were included in study from Jan 2014 to June 2015. The patients mean age was 48.0 ± 11.4years. Sixty eight point sixty eight percent were male patients and 31.3% were female patients as shown in table.

In our study most frequent clinical presentation was haemorrhoids (37.9.0%), Followed by anal fissure (33.5%). Least frequent clinical presentation was of anal fistula (28.57%). None of the patients developed surgical site infection post operatively.

## DISCUSSION

Perianal surgeries generally have low rates of postoperative wound infections[11,12]. Hence difficult to follow and make an assessment in such procedures. Faecal flora is associated with such wounds. De Paula et al examined the anal wounds of the patients that underwent open haemorrhoidectomy and found many bacteria with rising numbers. The bacteria most commonly isolated, was E coli[13]. When there is prolonged unhealed post-operative perianal wound and recurrent fistulae formation then we should suspect tuberculosis as well[14]. Local immune-inflammatory defenses of the wound site helps in healing after such open perianal procedures[15]. In another study by Burke EC et al, there was no wound infection in HIV patients undergoing such perianal surgeries[16]. In a study where patients for open hemorrhoidectomy were studied, transient bacteremia was found in about 8% of procedures[17]. However recurrent perianal infections are sometimes associated with the malignancy of rectum and colon as well[18]. In another study, bacteremia was found in few cases, after proctoscopy and sclerotherapy (treatment of hemorrhoids[19]). There were no serious complications or local infections noted in any of these studies with transient bacteremia. For such transient bacteremia, no antibiotics were needed till it resolved automatically. In another study, well compareable to our study, wound healing rate was similar in both groups whether wound was left open or its margins were sutured after lateral internal sphincterotomy[20]. Decreasing bacteria concentrations in perianal wound sites can help in early healing. In our study we managed to decrease bacterial load by advising sitz baths to all patients. Local and systemic use of metronidazole has been tried in many studies of perianal surgeries and use of antibiotics has been found fruitful in such cases especially for control of infection and pain[21,22] which is contrary to our study[23].

Another study showed that, with the administration of antibiotics, there was no advantage of wound healing or control of infection and pain as compared to control population/ group. The results were quite similar to our study[24]. Role of antibiotics is beneficial in colo-rectal surgeries. This is applicable mostly in pelvic and abdominal surgeries but not for peri-anal cases especially where after such procedures wound is left open for secondary healing[25]. There is not sufficient convining evidence that prophylactic antibiotics actually reduce postoperative wound infections following such perianal procedures. So further studies with larger sample size are warranted.

### Limitations of the Study

This study has certain limitations. Patients included in this study were of three different diseases including third and fourth degree of hemorrhoids, anal fissures and low lying fistula in ano. There are different types of surgeries carried out for such perianal diseases. These surgeries are not completely comparable, and a few can cause postoperative wound complications like pain and sepsis. The small sample size was another limitation of this study.

## CONCLUSION

In our study we found that there is no additional beneficial role of prophylactic antibiotics in perianal surgeries. Perianal surgeries can safely be performed without use of pre or post-operative antibiotics thereby significantly reducing health care expenses.

## CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

## REFERENCES


1. Arora G, Mannalithara A, Mithal A, Triadafilopoulos G, Singh G. Concurrent conditions in patients with chronic constipation: A population-based study. PLoS One 2012; 7(10): e42910.
2. SupreethJoyal LC, Bhuyan SK, Gupta TS, Dudhamal A. Comparative clinical study of snuhi ksheera sutra, tilanala kshara sutra and apamarga kshara sutra in bhagandara. (Fistula in Ano) Ayu 2012; 33(1): 85–91.
3. McCloud JM, Jameson JS, Scott AN. Life-threatening sepsis following treatment for haemorrhoids: A systematic review. Colorectal Dis 2006; 8(9): 748-55.
4. Golfam F, Golfam P, Golfam B, Pahlevani P. Comparison of topical nifedipine with oral nifedipine for treatment of anal fissure: A randomized controlled trial. Iran Red Crescent Med J. 2014; 16(8): e13592.
5. Nelson RL, Chattopadhyay A, Brooks W, Platt I, Paavana T, Earl S, et al. Operative procedures for fissure in ano. Cochrane Database Syst Rev 2011 9;(11): CD002199.
6. Goh M, Chew MH, Au-Yong PS, Ong CE, Tang CL. Non surgical faecal diversion in the management of severe perianal sepsis: a retrospective evaluation of the flexible faecal management system. Singapore Med J 2014; 55(12): 635-9.
7. Singh A, Ahmed K, Aydin A, Khan MS, Dasgupta P. Fournier's gangrene. A clinical review. Arch Ital Urol Androl 2016; 88(3): 157-64.
8. Klag T, Goetz M, Stange EF, Wehkamp J. Medical therapy of perianal crohn's disease. Viszeralmedizin 2015: 31(4): 265-72.
9. Wasey N, Baughan J, Gara Prophylaxis in elective colorectal surgery: the cost of ignoring the evidence. Can J Surg 2003; 46(4): 279–84.
10. Guy RJ, Seow-Choen F. Septic complications after treatment of haemorrhoids. Br J Surg 2003; 90: 147–56.
11. Sirikurnpiboon S, Awapittaya B, Jivapaisarnpong P. Ligation of intersphincteric fistula tract and its modification: Results from treatment of complex fistula. World J Gastrointest Surg 2013; 5(4): 123–28.
12. Aysan El, Aren A, Ayar E. A prospective, randomized, controlled trial of primary wound closure after lateral internal sphincterotomy. Am J Surg 2004; 187(2): 291-4.
13. De Paula PR, Speranzini MS, Hamzagic HC, Bassi DG, Chacon-Silva, Novo NF, et al. Bacteriology of the anal wound after open hemorrhoidectomy: Qualitative and quantitative analysis. Dis Colon Rectum 1991; 34: 664–69.
14. Milgrom Y, Goldman G, Hillel AG, Pojurovsky S, Ackerman Z. Tuberculosis: A rare cause of peri-anal disease. Isr Med Assoc J 2013; 15(12): 782-3.
15. De Paula PR, Matos D, Franco M, Speranzini MB, Figueiredo F, Barbosa de Santana IC, et al. Why do anal wounds heal adequately? A study of the local immune inflammatory defense mechanisms. Dis Colon Rectum 2004; 47: 1861–67.
16. Burke EC, Orloff SL, Freise CE, Macho JR, Schecter WP. Wound healing after anorectal surgery in human immune deficiency virus-infected patients. Arch Surg 1991; 126: 1267–70.
17. Bonardi RA, Rosin JD, Stonesifer GL, Bauer FW. Bacteremias associated with routine hemorrhoidectomies. Dis Colon Rectum 1976; 19: 233–36.
18. Panwalker AP. Unusual infections associated with colorectal cancer. Rev Infect Dis 1988; 10(2): 347-64.
19. Adami B, Eckardt VF, Suermann RB, Karbach U, Ewe K. Bacteremia after proctoscopy and hemorrhoidal injection sclerotherapy. Dis Colon Rectum 1981; 24: 373–74.
20. Kang GS, Kim BS, Choi PS, Kang DW. Evaluation of healing and complications after lateral internal sphincterotomy for chronic anal fissure: Marginal suture of incision vs open left incision: Prospective, randomized, controlled study. Dis Colon Rectum 2008; 51(3): 329-33.
21. A l-Mulhim AS, Ali AM, Al-Masuod N, Alwahidi A. Post hemorrhoidectomy pain: A randomized controlled trial. Saudi Med J 2006; 27: 1538–41.
22. Ala S, Saeedi M, Eshghi F, Mirzabeygi P. Topical metronidazolecan reduce pain after surgery and pain on defecation in postoperative hemorrhoidectomy. Dis Colon Rectum 2008; 51: 235–38.
23. Garg P. Local and oral antibiotics with avoidance of constipation (LOABAC) treatment for anal fissure: A new concept in conservative management. Indian J Surg 2016; 78(1): 80.
24. Seow-En I, Ngu J. Routine operative swab cultures and post-operative antibiotic use for uncomplicated perianal abscesses are unnecessary. ANZ J Surg 2017; 87(5): 356-59.
25. Nguyen N, Yegiyants S, Kaloostian C, Abbas MA, Difronzo LA. The surgical care improvement project (SCIP) initiative to reduce infection in elective colorectal surgery: Which performance measures affect outcome? Am Surg 2008; 74: 1012–16.