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Dr. Sachin Jadhav
Assistant Professor, Department of General Surgery, Dr VMGMC and SCSMSR, Solapur, Maharashtra, India

Dr. Ritvik Jaykar
Professor, HOD, Department of General Surgery, Dr VMGMC and SCSMSR, Solapur, Maharashtra, India

Dr. Kamlesh Ghodichor
Resident, Department of General Surgery, Dr. VMGMC and SCSMSR, Solapur, Maharashtra, India

Corresponding Author:
Dr. Sachin Jadhav
Assistant Professor, Department of General Surgery, Dr VMGMC and SCSMSR, Solapur, Maharashtra, India

A clinical study of perianal abscess

Dr. Sachin Jadhav, Dr. Ritvik Jaykar and Dr. Kamlesh Ghodichor

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Abstract
Introduction: An abscess is a painful condition in which a collection of pus developed near the anus. Most anal abscesses are a result of infection from small anal glands.
The most common type of abscess is a perianal abscess. This often appears as a painful boil-like swelling near the anus. It may be red in color and warm to the touch. Anal abscesses located in deeper tissue are less common and may be less visible.
Methods and Material: There will be prospective study of 100 patients with Anorectal abscess admitted in the department of General Surgery. The present study was conducted over a period from August 2019 to August 2021.
Results: Perianal abscesses are very common. They are more common in men than in women.
Majority of the aerobic and anaerobic organisms cultured from the perianal abscesses are of GIT and skin flora origin. Although antibiotics may prevent suppuration if given early or may prevent spreading of an abscess, they cannot be substituted for drainage of abscess. An anal fistula indicates a chronic phase of an unhealed abscess. Because of this after drainage of perianal abscesses it is advised to do careful examination.

Keywords: Perianal abscess, anorectal abscesses, anal canal

Introduction
Perianal abscesses are the most common type of anorectal abscesses. These abscesses can cause significant discomfort for patients. A perianal abscess is an acute phase manifestation of a collection of pus that arises from infection of cryptoglandular epithelium lining the anal canal or from a skin infection. Perianal abscesses account for the most common variety of anorectal abscesses. They represent approximately 60% of reported anorectal abscesses.
The prevalence of perianal abscesses in the general population is much higher than seen in clinical practice since most patients with symptoms referable to anorectum do not seek medical attention.
Perianal abscesses are more common in men than women. Although perianal abscess is common in healthy individuals there are other risk factors that are strongly associated such as diabetes, Crohn's disease, obesity, immunosuppression, anal fissure etc.
Perianal abscess can expand into nearby tissues (e.g., supralevator space, ischiorectal space) if undrained or may progress to a generalized systemic infection. In most of the patients surgical drainage under general or local anesthesia is needed to alleviate pain and sepsis. Subsequently 15-47% of such patients suffer recurrent abscess and fistula in ano formation after the surgical drainage.
Isolation of gut specific organisms from the pus from a perianal abscess would suggest that a fistula may be present, and a careful review of the case is necessary. Depending on the results of bacteriologic evaluations, it is seen that gastrointestinal tract (GIT) flora predominate in perianal abscess. The predominant anaerobic bacteria cultured are the *Bacteroides* spp., *Peptostreptococcus* and *Clostridium* spp.; whereas the most often isolated aerobic and facultative bacteria are *Staphylococcus aureus*, *Enterobacteriaceae*, *Streptococcus* spp., and *Enterococcus* spp.
Surgical drainage is the cornerstone of treatment for perianal abscesses. It aims only at controlling infection of the adjacent structures. The anal sphincters may get damaged if the perianal abscesses are untreated or inadequately treated.

This study describes clinical presentation, Common age group, common organism, the complications, and the risk factors associated.

Aims and Objectives

- To study clinical presentation of perianal abscess.
- To identify risk factor causing perianal abscess.
- To identify common age group involve.
- To identify most common organism.
- Growth with culture and sensitivity and group of antibiotics.
- To study most common complications associated.

Methods and Material

There will be prospective study of 100 patient admitted in department of general surgery.

- Patient data will be collected including detail history examination
- Patient will be investigated for routine laboratory (CBC, BSL, LFT, RFT) investigation, radiological (Local USG), microbiological investigations (Gram stain. Zn stain. Culture and sensitivity) and pathological investigation
- Patient will be operated as per requirement for incision and drainage.
- Data will be entered in proforma in tabulated format and analyzed with respect to aims and objectives.

Inclusion criteria

Patients who present with acute swelling in the perianal region in the age group more than 10 yrs with pus being let out on incision and drainage.

Exclusion criteria

1. Patients under the age group of 10 yrs
2. Patient not willing to participate in the study
3. Patients with other types of anorectal abscess

Data collection

The data of each patient will be collected on a proforma specially designed for this study and which includes demographic details, clinical features, past medical history, clinical and Lab values which will be analysed for statistical significance and correlation.

Observation and analysis

Table 1: Age distribution:

Age	Numbers
Below 20	10
20-40	11
40-60	43
Above 60	36

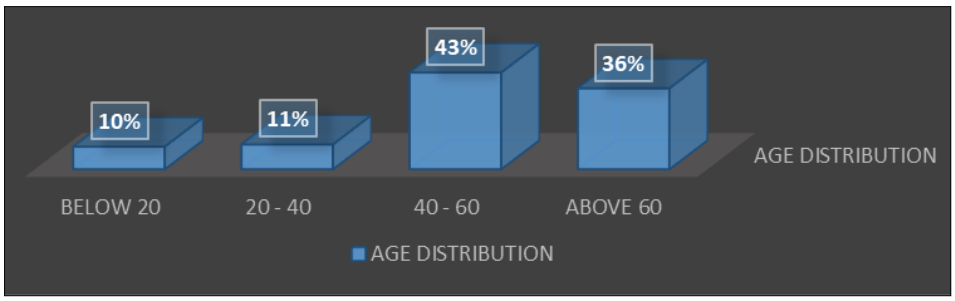


Fig 1: Age Distribution

From above table it is evident that the most commonly affected age group in our study is 40-60 years followed by above 60 years.

Table 2: Sex distribution

Sex	Numbers
Male	66
Female	34

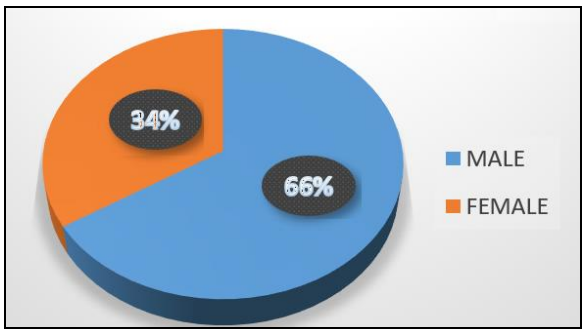


Fig 2: Sex

From the above diagram it evident that males are more commonly affected than females in our study. Male to female ratio is 1.9:1.

Symptoms Distribution

Fever- 78%
Pain -100%
Swelling -49%
Discharge -39%
Constipation -9%

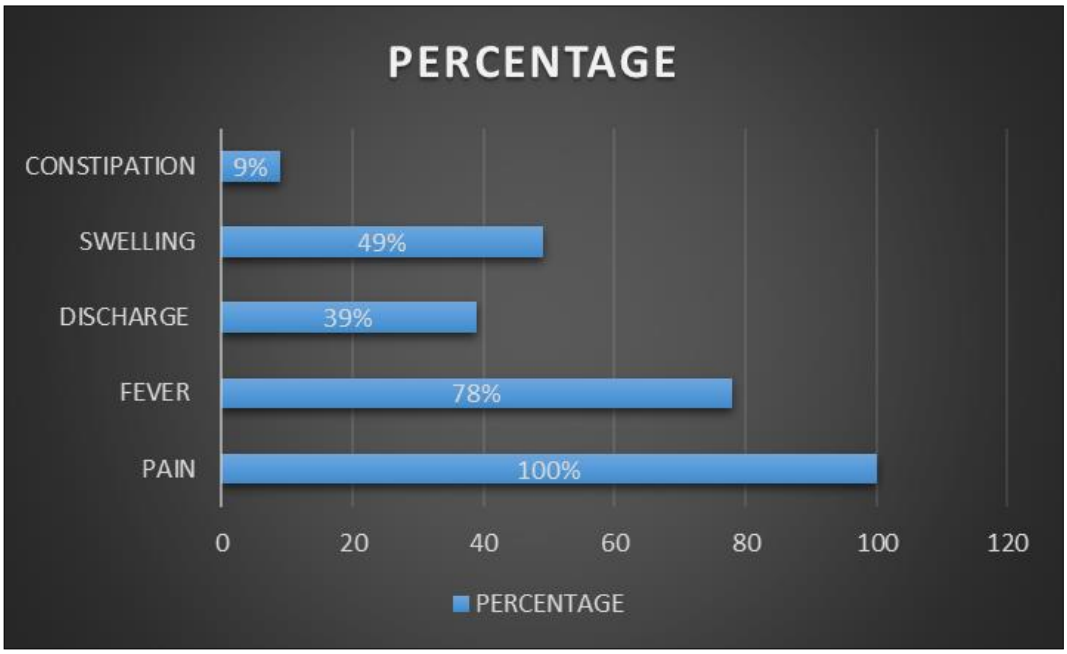


Fig 3: Percentage

From the above table it is evident that Pain over swelling is most common presenting symptom in our study followed by Fever.

Types of Abscess
Perianal - 65%
Ischiorectal - 25%
Intersphincteric - 5%
Supralevator - 4%
Submucosal - 1%

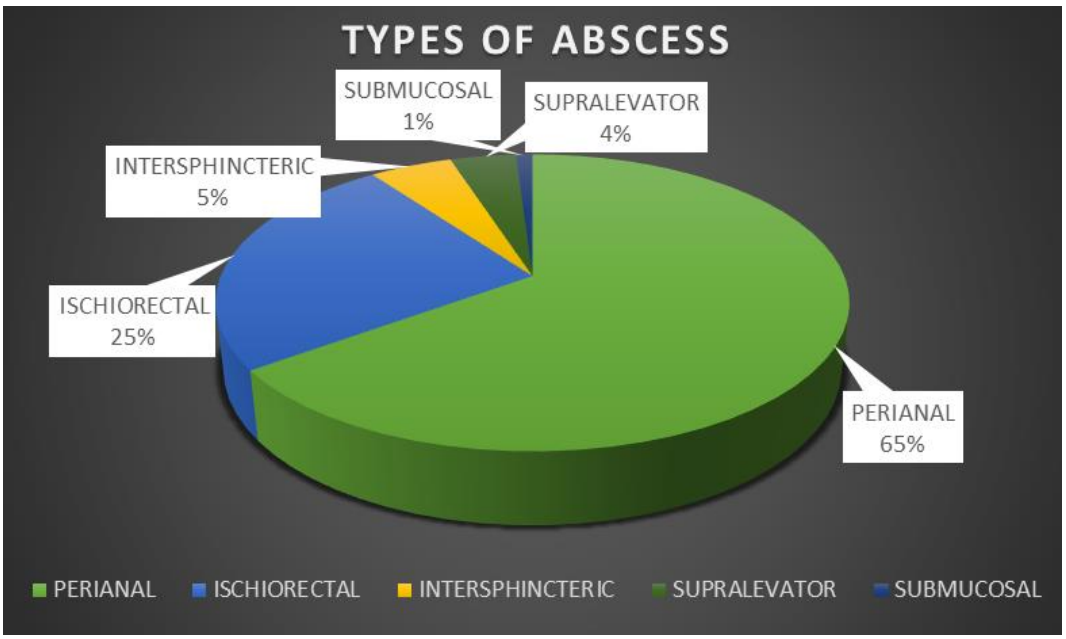


Fig 4: Types of Abscess

From the above table it is evident that, Perianal Abscess and Ischiorectal abscess compromises majority of the Anorectal abscess in our study.

CO-Morbid Conditions
Diabetes mellitus - 25%
Hypertension - 13%
Obesity - 16%
Tuberculosis - 3%
Crohn's disease - 2%
Hidradenitis Suppurative - 3%
HIV - 4%
HbsAg - 2%

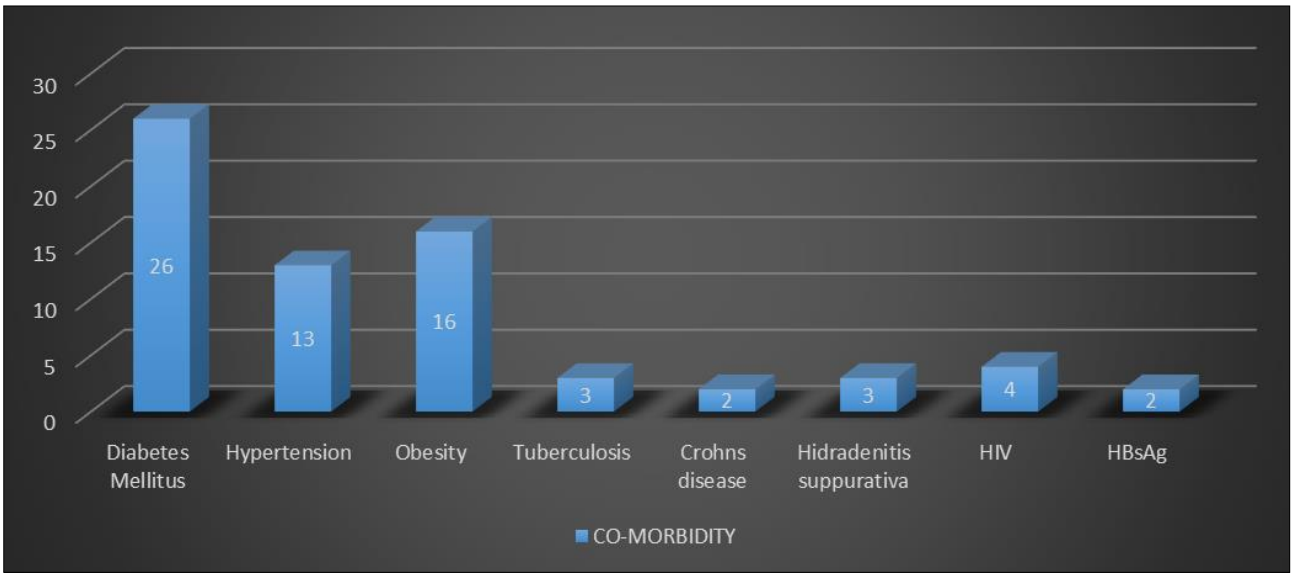


Fig 5: Co-Morbidity

From the above chart, it is evident that Commonest Co-morbidities at the time of presentation of perianal abscess is Diabetes mellitus followed by Obesity.

Organism Grown
Eschericha Coli - 41%
Staphylococcus aurius - 13%
Klebsiella Spp - 16%
Pseudomonas Spp - 4%
Proteus Spp - 10%
Enterococcus Spp - 6%
Citrobactor Spp - 4%
Bacteroids - 1%
No Growth - 5%

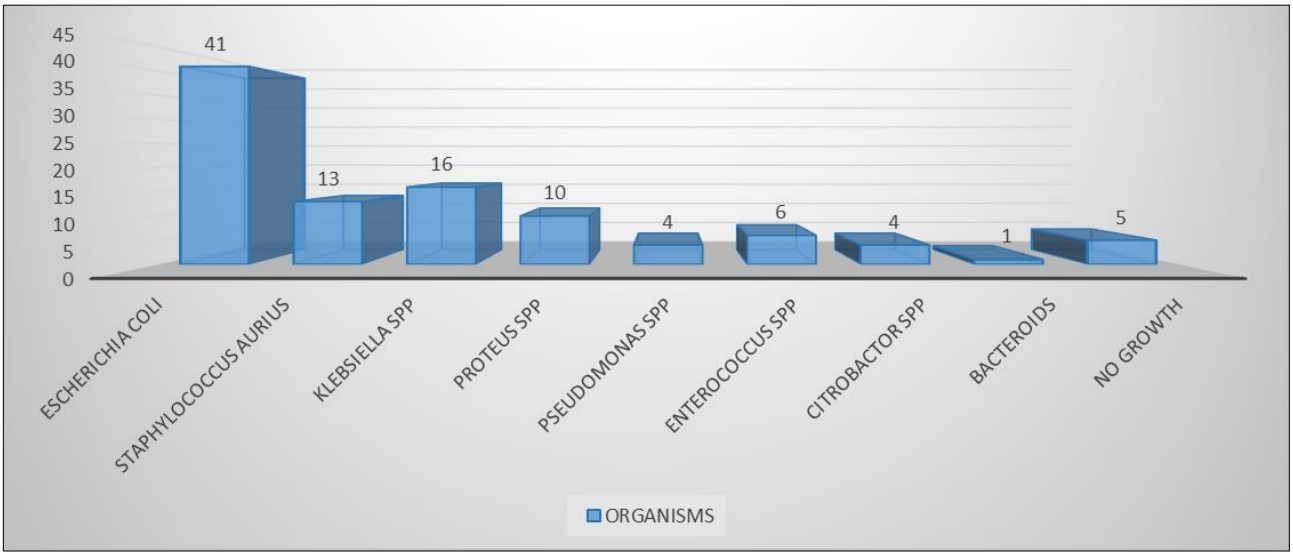
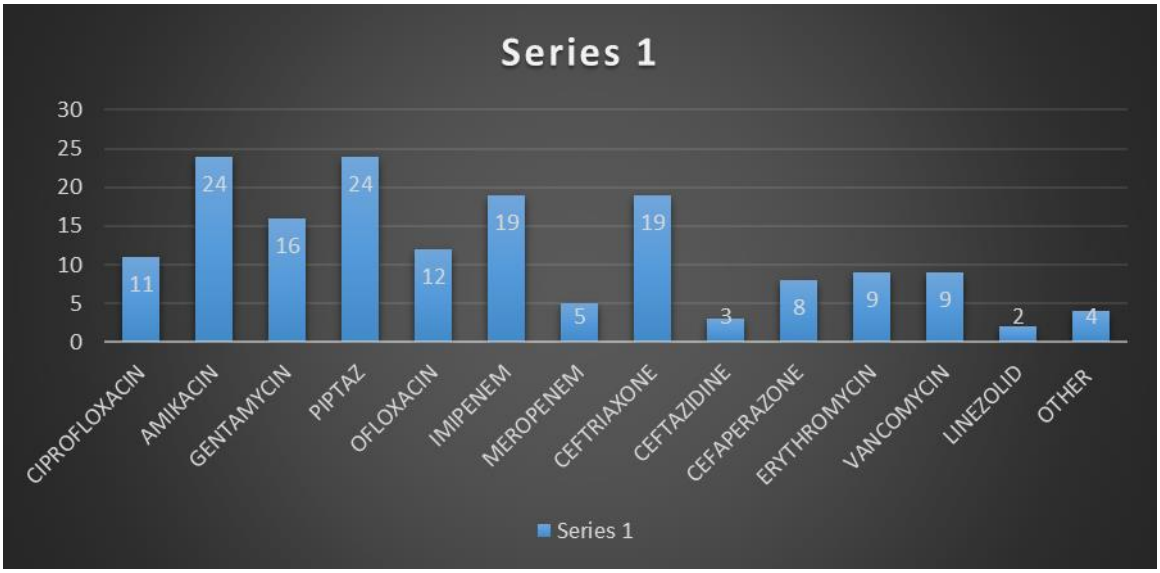


Fig 6: Organisms

From the above chart, it is evident that Commonest organism which grown on culture in our study is *Eschericha coli* followed by *Klebsiella* species.

Sensitive Antibiotics
Ciprofloxacin - 11%
Amikacin - 24
Gentamycin - 16%
Piptaz - 24%
Ofloxacin - 12%
Imipenem - 19%
Meropenem - 5%
Ceftriaxone - 19%
Ceftazidine - 3%
Cefoperazone - 8%
Erythromycin - 9%
Vancomycin - 9%
Linezolid - 2



From the above chart, it is evident that most bacteria are sensitive to intravenous Piperacillin and Amikacin antibiotics

Treatment Given
Incision and drainage - 84%
Conservative - 16%

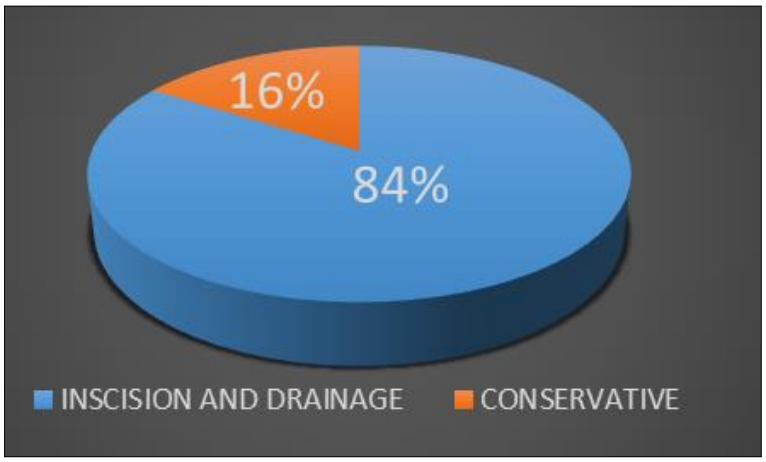


Fig 8: Treatment

From the above chart it is evident that most of the patient recovered after incision and drainage.

Complications
Fistula in ano - 7%
Recurrence - 3%
Death - 3%

From the above chart it is evident that most common complication related to perianal abscess is Fistula in ano followed by Recurrence.

Outcome
Healed - 97%
Death - 3%

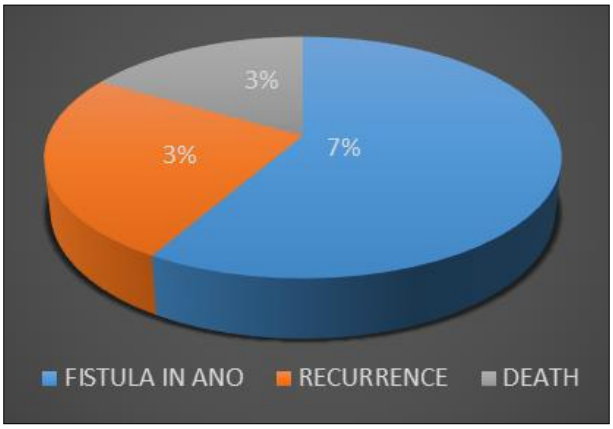


Fig 9: Complications

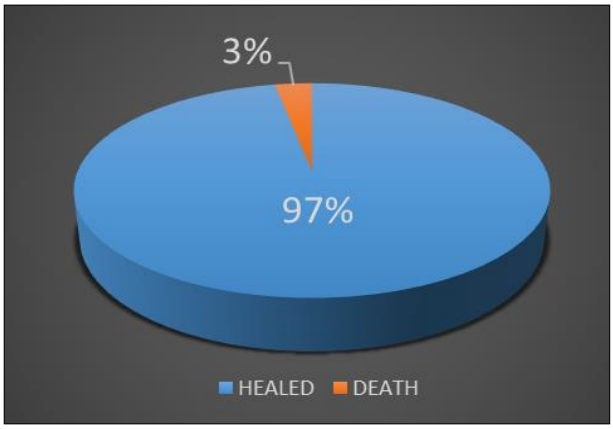


Fig 10: Outcome

From the above table it is evident that most of the patient recovered after Perianal abscess. Healed to death ration is 97:1.

Hospital Stay
2-3.3 days - 7%
3.3- 4.6 days - 11%
4.6-5.9 days - 20%
5.9 -7.2 days - 28%
7.2-8.5 days - 1%
8.5-9.8 days - 2%

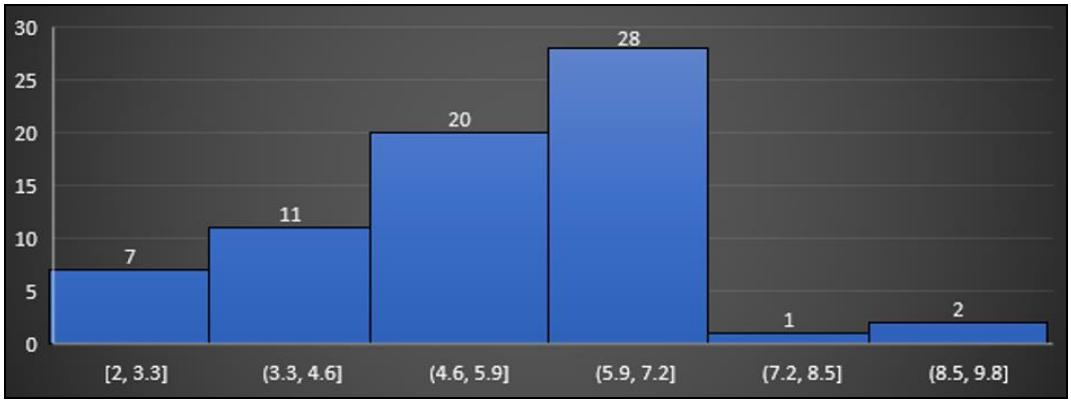


Fig 11: Hospital Stay

From the above table it is evident that average hospital stay for the healing is 5.9 to 7.2 days.

Duration for wound healing
16-20 days - 14%
20-24 days - 16%
24-28 days - 27%
28-32 days - 15%
32-36 days - 3%

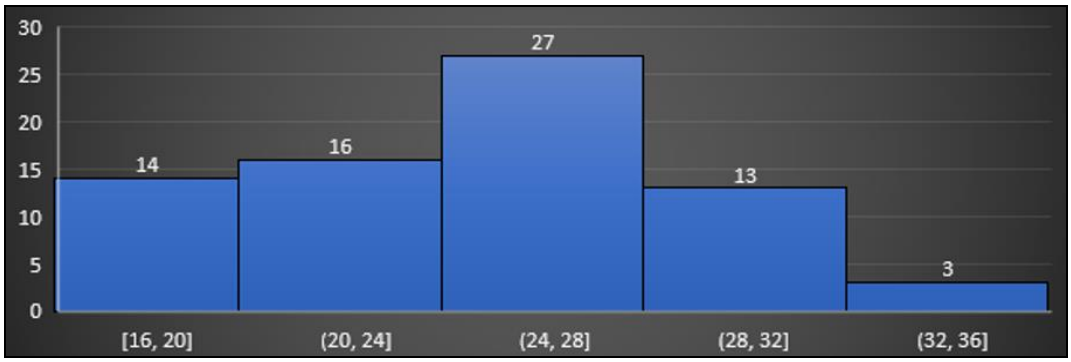


Fig 12: Duration for wound healing

From the above table, it is evident that the average day required for wound healing is 24-28 days.

Time requeres to start routine work-
6 - 7.5 Days - 29%
7.5 -9 Days - 19%
9 -10.5 Days - 18%
10.5-12 Days - 5%
12-13.5 Days - 1%
13.5-15 Days -1%

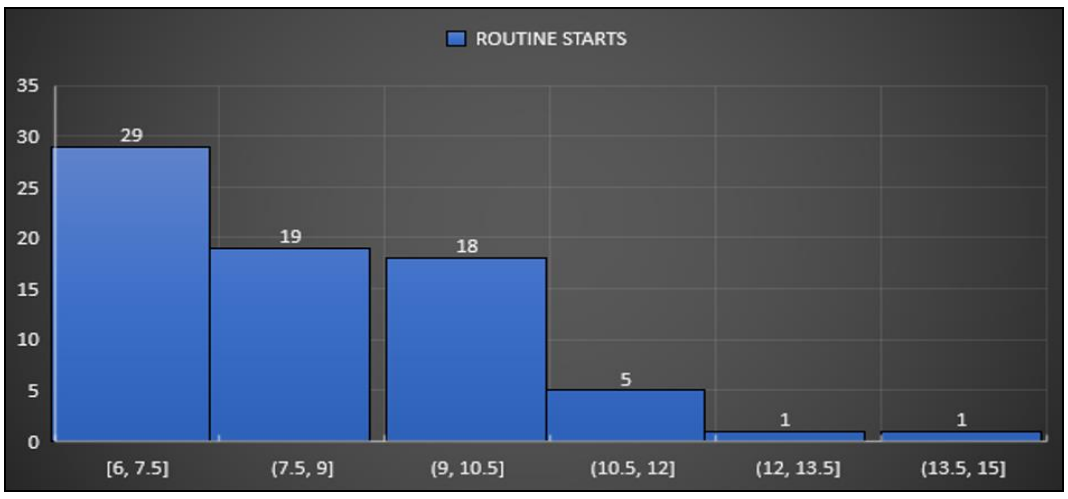


Fig 13: Time requeres to start routine work

From the above table it is evident that average days required to start routine work is 6-7.5 days.

Discussion

In this study 100 patients with perianal abscesses were studied. Of the 100 patients 66 patients were male and and 34 patients were female. As per Mehmet Ulug *et al*. who did a study on "The evaluation of bacteriology in perianal abscesses of 81 adult patients" 86% were male patients and 14% were female patients and the mean age of patients was 40.5+11.3 yrs in males and 35.8+13 yrs in females. In this study 66% were males and 34% were females and the mean age of male and female patients was 42.3+11.8 yrs (range 21-80) and 37.6+7.4 yrs (range 19-50) respectively.

In the report by Ramanujam *et al*. the age of the patients ranged from 10 yrs to 82 yrs with 65% of patients in their third to fourth decade of life. In this study patients ranged in age from 10 – 80 yrs with 11% of patients in the age group of 21-40 yrs and 43% of patients in the age group of 41-60 yrs.

In a report by Hill *et al*. the number of male patients with perianal abscess were twice the number of female patients. As per the study by Ramanujam *et al*. on "Perianal abscesses and fistulas" involving 1023 patients, the male to female ratio was 2:1. In this study the male to female ratio is 1.9:1.

Perianal pain (100%) and swelling (62%) were the most common clinical findings recorded in the study by Mehmet *et al*. In this study the most common presenting feature was pain which was present in all patients (100%) followed by fever (78%), swelling (49%), discharge (39%) and constipation (9).

Smoking and alcoholism was noted in 24 patients. Fifteen patients were alcoholics and nine were smokers. Both alcoholism and smoking was noted in 4 patient.

Incision and drainage of abscess was done in 84 patients and 16 patient managed conservatively, and antimicrobial therapy was given to all.

In this study the most common type of abscess was Perianal (65%) and ischiorectal (25%), followed by intersphinceric (5%), supralevator (4%), submcosal (1%).

Out Of the 100 specimens, all except 5 specimens yielded bacterial growth. Aerobic bacteria only were isolated in 80 patients (80%), anaerobic bacteria only in 3 patients (3%), mixed aerobic and anaerobic bacteria in 5 patients (5%). A total of 8 anaerobic and 85 aerobic isolates were recovered from 100 abscesses. The predominant isolates were *Escherichia coli* (n = 41), *Staphylococcus aureus* (n=13), *Klebsiella* (n=16), *Proteus mirabilis* (n=10), *Enterococcus* spp. (n=6), *Pseudomonas* (n=4), *Bacteroides fragilis* (n=1) and no growth in 5 patient, In the study by Mehmet *et al*. 7 specimens yielded no bacterial growth. Aerobic bacteria alone were isolated in 53% of patients, anaerobic bacteria alone in 9.9% patients and mixed aerobic and anaerobic bacteria in 28.4% of patients. A total of 31 anaerobic and 101 aerobic organisms were cultured from 81 abscesses. The predominant anaerobic organisms were Bacteriodes s (n=6) and Peptostreptococcus (n=6). The predominant aerobic isolates were *Escherichia coli* (n= 41), *Klebsiella* (n=16), *Staphylococci* (n= 13), *Proteus mirabilis* (n=10) and *Enterococcus* (n= 6).

Most of the organisms were sensitive to piperacillin-tazobactam (24%) and amikacin (24%), followed by Imipenem (19%) and Ceftriaxone (19%), Gentamycin, ofloxacin and Ciprofloxacin

According to Mehmet Ulug *et al*. a predisposing condition was present in twenty eight (34.5%) patients. A single comorbid condition was present in 15 patients, two comorbid conditions were present in 12, and three comorbidity were present in two. Diabetes (22.2%), obesity (8.6%), and malignancy (6.1%) were the most common underlying comorbid conditions.

In this study, an underlying condition was present in 53 patients out of 100 patients. A single condition was present in 35 patients, two comorbid conditions were present in 18. Diabetes mellitus (26%), hypertension (13%), and obesity (16%) were the most common conditions. four patient had AIDS and another two patient had HBsAg infection.

The patients were followed for a period of three months. In this study 87% of patients developed no complications. Complications occurred in 13 patients. Of these seven patients developed fistula in ano, three presented with recurrent abscess and three patients died due to sepsis. According to Mehmet ulug *et al*. complications were noted in 38% of patients, most common being fistula in ano (27%), followed by recurrence (9%) and sepsis in one patient.

Total duration for wound healing was 24-28 days (27%), 20-24 days (16%) followed by 28-32 days (13%) and16-20 days (14%).

Conclusion

Perianal abscesses are very common. They are more common in men than in women. Majority of the aerobic and anaerobic organisms cultured from the perianal abscesses are of GIT and skin flora origin.

The isolation of anaerobic bacteria together with aerobic organism is not surprising since anaerobes are the predominant organisms in GIT.

Isolation of gut specific organisms from the pus from a perianal abscess would suggest that a fistula may be present and a careful review of the case is necessary. Whereas if skin organisms are grown in culture further evaluation is unnecessary. Incision and drainage is the main treatment for perianal abscess.

This is important because the abscess environment (low PH, capsule of the abscess, and the presence of binding proteins) is detrimental to the effectiveness of antibiotics.

Although antibiotics may prevent suppuration if given early or may prevent spreading of an abscess, they cannot be substituted for drainage of abscess.

With appropriate drainage of the abscess most of them resolve. However a Significant number of patients who underwent treatment for perianal abscess would develop persistent aggravating symptoms.

An anal fistula indicates a chronic phase of an unhealed abscess. Because of this after drainage of perianal abscesses it is advised to do careful examination

Under anesthesia seven to ten days later when the results of culture and sensitivity are available to look for an underlying fistula.

Conflict of Interest

Not available

Financial Support

Not available

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