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A CLINICAL STUDY ON PERI ANAL TUBERCULOSIS IN S.V.R.R.G.G. HOSPITAL TIRUPATI

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ABSTRACT: Tuberculosis around the anus is a rare form of extra pulmonary tuberculosis It is necessary to recognize it due to a specific treatment.⁽¹⁾ Perianal tuberculosis is an uncommon condition; it may not be easily distinguishable from the other inflammatory anal diseases. Undiagnosed cases are associated with high recurrence rates. Perianal tuberculosis can have varied presentation, frequently mimicking other common as well as rare diseases. Ano perianal tuberculosis may be associated with abdominal tuberculosis either as an extension of the original lesion or due to its spread via the lymphatics. **AIMS & OBJECTIVES OF STUDY:** To study the prevalence of ano-perianal tuberculosis in patients attending surgery OPD, SVRR Government General Hospital, Tirupati. To prevent recurrence and morbidity due to peri anal tuberculosis by early detection and intervention with anti tuberculous drugs. **MATERIALS AND METHODS:** **STUDY DESIGN:** Prospective study. **STUDY SETTING:** The present study was conducted at Department of General Surgery, SVRR Government General Hospital, and Tirupati. After getting institutional approval, written and informed consent was taken from each patient. **PERIOD OF STUDY:** 12 months. **SAMPLE SIZE:** 142 patients who attended Surgery OP and were admitted in General Surgery ward, SVRR Government General Hospital, Tirupati with anal and perianal lesions like anal fistulae, perianal suppurations, growths, ulcers during the study period. **INCLUSION CRITERIA:** Age more than 15 years, Both men and women are included, Both sputum positive and negative for AFB, Both HIV positive and negative patients, All Anal and perianal (more than 3cm and within 3cm of anal verge) lesions are included, Willingness of the patient to participate in the study. **EXCLUSION CRITERIA:** Age less than 15 years, Patients who are not willing to participate in the study. **CONCLUSION:** Tuberculosis was responsible for 11% cases in recurrent fistula-in-ano responding standard surgery. Anti- tuberculous therapy led to healing within 06 months. A tubercular fistula-in-ano is seldom diagnosed pre- operatively on the basis of clinical picture. Therefore- in all cases of recurrent fistula-in-ano, histopathological examination of the excised fistula is mandatory and once tuberculosis is confirmed, antituberculous treatment should be immediately started to ensure early healing and cure of the disease. The correlation was clinically significant but stastically non-significant.

KEYWORDS: Tb, HIV, Anal Fistula, Perianal Abscess.

INTRODUCTION: Tuberculosis around the anus is a rare form of extra pulmonary tuberculosis. It is necessary to recognize it due to a specific treatment.⁽¹⁾ Perianal tuberculosis is an uncommon condition; it may not be easily distinguishable from the other inflammatory anal diseases.

Undiagnosed cases are associated with high recurrence rates. Perianal tuberculosis can have varied presentation, frequently mimicking other common as well as rare diseases. Ano

ORIGINAL ARTICLE

perianal tuberculosis may be associated with abdominal tuberculosis either as an extension of the original lesion or due to its spread via the lymphatics.

Infection by Koch's bacillus is still a public health problem in the under developed, developed and developing countries where the human immunodeficiency virus is gaining epidemic form, the appearance of multidrug resistant bacilli, large immigrant populations and poverty, poor hygiene, reject of national tuberculosis control programmes and education all play their part in the increased incidence of the disease.

Tuberculosis continues to be a major source of morbidity and mortality in the world; 30%-50% of world population has TB (3 billion) = 8-10 million/year, more than 3 million are in Sub-Saharan Africa, and 5,000 people die/day = 2.3 million/year.

It is estimated that approximately 50% of adult Indian population is affected with Mycobacterium Tuberculosis. About 2.2 million (WHO 2005 estimates) new cases of tuberculosis are occurring annually in India (worldwide 6 million cases). In comparison to only pulmonary tuberculosis, which comprises around 68.4%, the incidence of combined pulmonary and extra pulmonary and pulmonary alone comprise 12% and 20 to 25% of the total disease burden respectively. Extra pulmonary Tuberculosis has increased in the last few years (about 5% of all cases) displaying a wide spectrum in its clinical characteristics. Anal localization of tuberculosis is still rare (0.7%).

Shukla et al (1988) reported that in India, tuberculosis accounted for up to 14 percent of cases of fistula in ano. Anal discharge was present in all cases and perianal swelling in one third Constitutional symptoms were not present in any patient.⁽²⁾

TB of the gastrointestinal tract is the sixth most frequent form of extra-pulmonary site, after lymphatic, genitourinary, bone and joint, miliary and meningeal tuberculosis.

Tuberculosis can affect any part of the gastro intestinal tract from esophagus to anal canal, frequently encountered in tropical countries. Tuberculosis of the bowel distal to ilio cecal junction is rare and considered as a differential diagnosis of proctological disorders. The most frequently recognized ano rectal tuberculous lesions are suppurations and fistulae. Tuberculosis is a neglected cause of anal sepsis, often unrecognized, and therefore does not get the desired treatment.

The presentation of the disease may have several forms with atypical and non-characteristic clinical picture, which makes it difficult to diagnose pre operatively.

Clinically all patients with anal tuberculosis may simulate carcinoma. These patients present with per rectum bleeding and anal pain while passing stools. Anal fissure in an unusual location, slow to heal, should be appropriately screened to rule out tuberculosis.

The diagnosis of tuberculosis in pilonidal sinus disease is elusive, necessitating a high index of suspicion Tuberculosis can be a part of complicating infections in HIV positive patients.

Although described as one of the causes of granulomatous diseases within the anorectal region, yet perianal TB, without the presence of any previous or active pulmonary infection, is extremely rare.

Several studies have described the unusual manifestations of extra pulmonary tuberculosis in ano perianal region with non-specific clinical features and the need for high index suspicion. Undiagnosed cases are associated with high recurrence rates. Due to the varied presentation of

anal TB, it should be suspected in all lesions not responding to conventional approaches. All such recurrent or complex fistulae i.e. those with more than one external opening should undergo Histopathological examination to exclude tuberculosis.⁽³⁾

This study of the prevalence of tuberculosis in ano perianal lesions helps in early detection and treatment of tuberculosis so that we can curtail the morbidity and mortality. Purpose of this study is to determine the frequency of tubercular fistulae –in ano especially in recurrent or complex fistulae, tubercular ano-perianal suppurations, Pilonidal sinuses, perianal ulcers, anal & perianal growths with or without pulmonary tuberculosis and not responding to conventional surgical treatment.

Various forms of ano – perianal Tuberculosis

1. Fistula in ano (Most common).⁽⁴⁾
2. Peri anal suppurations.⁽⁴⁾
3. Perianal non-healing sinus.
4. Anal fistulae with tuberculous salpingitis.⁽⁵⁾ or epididymitis.⁽⁶⁾
5. Non-healing ulcer at anal orifice.⁽⁷⁾
6. Anal ulceration with inguinal lymphadenopathy.⁽⁸⁾
7. Anal fissure.⁽⁹⁾
8. Recurrent perianal growth (tuberculous verrucosa cutis).⁽¹⁰⁾
9. Rectal stricture.⁽¹¹⁾
10. Atypically localized scrofuloderma.⁽¹²⁾
11. Pilonidal sinus.⁽¹³⁾
12. Rectal submucosal tumor.⁽¹⁴⁾
13. Varicose Anorectal Tuberculosis.⁽¹⁵⁾
14. Hemorrhoidal thrombosis with fever and purulent discharge.⁽¹⁶⁾

Tuberculosis should generally be taken into consideration in the differential diagnosis of the ulcerative lesions of the anal and perianal regions for these lesions do occur in the said areas despite their rarity.⁽¹⁷⁾

Symptoms of anoperianal tuberculosis:

1. Anal pain, fever and cough.⁽¹⁸⁾
2. Anal or peri anal ulcer with purulent exudates.
3. A non-healing wound around the anus.⁽¹⁹⁾
4. Anal fistulae (usually recurrent with multiple external openings, gross scarring and induration).⁽²⁰⁾
5. Acute perianal abscess.⁽²¹⁾
6. Perianal cutaneous ulcerations.⁽²²⁾
7. Bleeding anal ulcer.⁽²³⁾
8. Associated anal lesions in HIV positive patient.⁽²⁴⁾
9. Anal stricture.⁽²⁵⁾

Tuberculosis of the bowel distal to ilio cecal junction is rare and considered as a differential diagnosis of proctological disorders.⁽²¹⁾

ORIGINAL ARTICLE

While the rate of patients with extra pulmonary Tuberculosis has increased in the last few years (about 5% of all cases) displaying a wide spectrum its clinical characteristics, anal localization is still rare (0.7%).⁽²²⁾ 10% of anal fistulae are associated with Inflammatory Bowel Disease, tuberculosis, malignancy, and radiation.⁽²³⁾

Perianal tuberculosis may manifest as an ulcerative, verrucous, lupoid and miliary form, fistulous, fissure forms.⁽²⁴⁾ and the reasons for such a spectrum of clinical manifestations not fully understood, but the site, the number, and the virulence of organisms appears to have some bearing upon the problem.⁽²⁵⁾

The most common type is the ulcerative lesion which tends to have well-defined boundaries and be characterized by mucopurulent discharge.⁽²⁶⁾ and pain.⁽¹⁸⁾

The verrucous type tends to extend into the anal passage from the perianal region with a development pattern similar to that of a wart. However, it may appear as haemorrhoidal nodule, perianal abscess or anal fistula.⁽²⁷⁾

Nearly all TB fistulas are complex, secondary tracks or additional complications are common, even at first presentation.⁽¹⁷⁾

Anal Tuberculous sepsis should be considered in cases of known pulmonary or extra pulmonary tuberculosis or if anal sepsis persistent, recurrent or complex in nature.⁽²⁸⁾

Peri orificial TB results from autoinoculation of mycobacterium into the peri orificial skin and mucous membrane in patients with advanced TB.⁽²⁹⁾

Anal tuberculosis complicated by secondary amyloidosis.⁽³⁰⁾ Miliary tuberculosis can present as acute perianal abscess.⁽³¹⁾

Tubercular aetiology must be suspected in cases of chronic persistent perianal abscess.⁽³²⁾

As all excised fistula in ano are not invariably subjected to histopathological examination, it may also be agreed that some cases of Tuberculous fistula in ano are missed and the incidence of anal or peri anal tuberculosis may not be as low as reported in literature.⁽¹⁷⁾

Histological examination of the excised fistula is mandatory for the diagnosis of anal tuberculosis.⁽⁴⁾ Peri anal cutaneous ulcerations in tropical countries have multiple causes Bacterial, viral and parasitic.⁽³³⁾

The main differential diagnosis for ano perianal tuberculosis remains the Crohn's disease, a debilitating disease that is growing in incidence in both developing and developed countries.

Clinical manifestations vary from asymptomatic skin tags to severe, debilitating perineal destruction and sepsis.⁽¹⁷⁾ However, the histological differential diagnosis of Crohn's disease and intestinal, perianal tuberculosis can be very challenging, as both are chronic granulomatous disorders with overlapping histological features.⁽³³⁾

Despite availability of various tests, early diagnosis of anal and peri anal tuberculosis remains a challenge. In countries like India the search begins with the routine tests like total leucocyte count, Erythrocyte sedimentation rate, Mantoux test, detection of acid fast bacilli in the discharge or tissue sections from the lesion.⁽²⁾ Clinical diagnosis is usually dependent on microscopic detection using Ziehl – Neelsen stain and Mycobacterial culture.⁽¹⁹⁾ But the sensitivity and specificity of these two methods are low.

Tuberculosis is a neglected cause of anal sepsis, often it is not recognized and, therefore, is not treated properly, results in recurrence of fistulas after routine surgical treatment.⁽²³⁾

ORIGINAL ARTICLE

Resurgence in tuberculosis during the HIV era produces a new spectrum of presentations for the surgeon and therefore, invasion by tubercle bacilli is often seen at unusual sites of the gut and reported in literature distinct features, which include anal pain, or discharge, multiple or recurrent fistulae in ano and inguinal lymphadenopathy, are not characteristically distinct from other anal lesions.⁽¹⁴⁾

Anal tuberculosis is less uncommon and has no distinct clinical presentation. Tubercular fistulae are usually multiple. Anal tuberculosis is also seen in paediatric patients.⁽³⁴⁾

Treatment of Tuberculous lesions of anus should include conventional surgical treatment of anal sepsis and specific medical anti tuberculous treatment.⁽³⁵⁾ Anti Tuberculous drugs have changed the dismal outcome for patients with ano perianal tuberculosis. They have also made surgery safe and curative. In most cases, patients are treated with combination of four anti Tuberculous chemotherapeutics.⁽²²⁾

Effective anti Tuberculous therapy can result in resolution of persistent or recurrent anal fistulae.^{35,20} The recommended surgical procedures today are conservative and a period of preoperative drug therapy is controversial.¹⁷

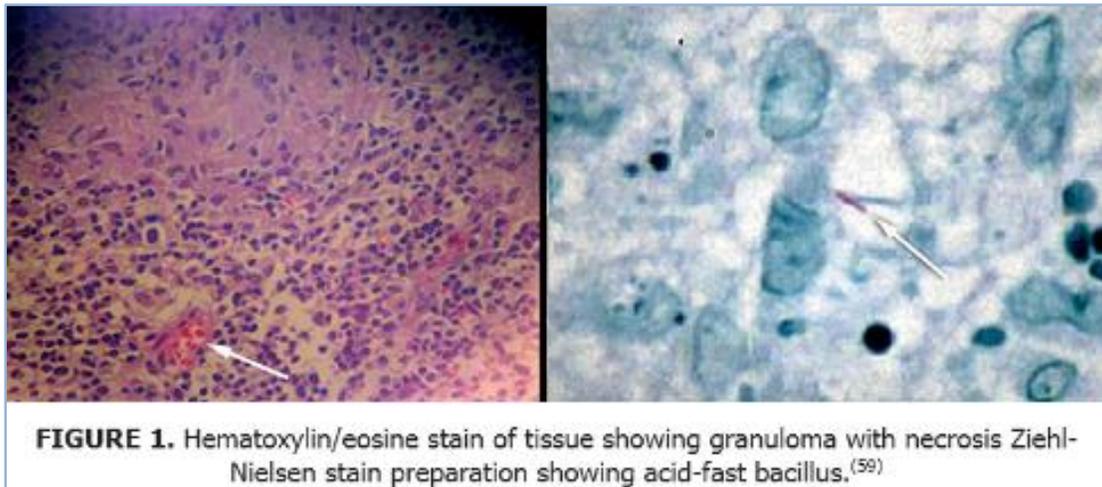


FIGURE 1. Hematoxylin/eosine stain of tissue showing granuloma with necrosis Ziehl-Nielsen stain preparation showing acid-fast bacillus.⁽⁵⁹⁾

AIM OF STUDY:

1. To study the prevalence of ano-perianal tuberculosis in patients attending surgery OPD, SVRR Government General Hospital, Tirupati.
2. To prevent recurrence and morbidity due to peri anal tuberculosis by early detection and intervention with anti tuberculous drugs.
3. By studying the Clinical & Histopathology and microbiology of secretions of anal and perianal lesions, we can diagnose Ano-perianal Tuberculosis early and can plan treatment to reduce the morbidity.
4. We can analyze the prevalence of ano perianal localization of extra pulmonary tuberculosis.
5. Predict the treatment outcome.
6. Predict the prognosis of the patient.

ORIGINAL ARTICLE

MATERIALS AND METHODS:

STUDY DESIGN: Prospective study.

STUDY SETTING: The present study was conducted at Department of General Surgery, SVRR Government General Hospital, and Tirupati. After getting institutional approval, written and informed consent was taken from each patient.

PERIOD OF STUDY: 12 months.

SAMPLE SIZE: 142 patients who attended Surgery OP and were admitted in General Surgery ward, SVRR Government General Hospital, Tirupati with anal and perianal lesions like anal fistulae, perianal suppurations, growths, ulcers during the study period.

INCLUSION CRITERIA:

- Age more than 15 years.
- Both men and women are included.
- Both sputum positive and negative for AFB.
- Both HIV positive and negative patients.
- All Anal and perianal (more than 3cm and within 3cm of anal verge) lesions are included.
- Willingness of the patient to participate in the study.

EXCLUSION CRITERIA:

- Age less than 15 years.
- Patients who are not willing to participate in the study.

Investigations to be done for the patients:

1. Biopsy from the edge of the anal fistulae, ulcer edge.
2. Fistulectomy specimen for Histopathology.
3. AFB Staining and Culture of Purulent discharge from fistula and perianal abscess.
4. Fistulogram.
5. Mantoux test, ESR.
6. Chest X-ray.
7. ELISA –HIV Test.

Statistical Analysis:

1. Assessment of prevalence of tuberculous anal fistulae, in the study group (simple/complex/recurrent).
2. Assessment of prevalence of tuberculous anal-perianal suppurations, ulcers, growths, in the study group.
3. Assessment of prevalence of tuberculous anal lesions associated with pulmonary TB, in the study group.
4. Assessment of prevalence of tuberculous anal lesions associated with HIV infection, in the study group.

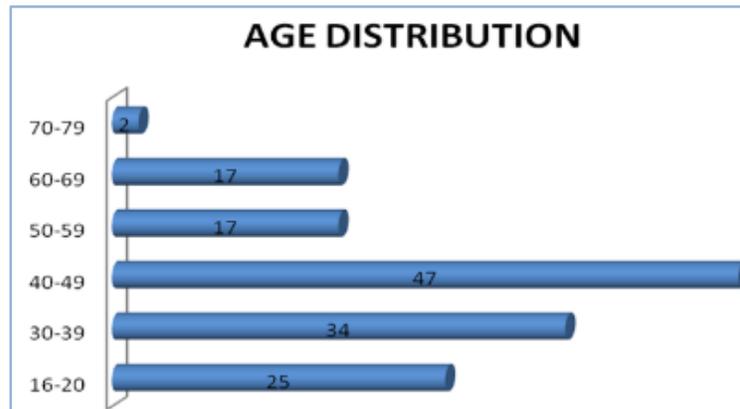
RESULTS: A prospective study was undertaken in a group of 142 patients fulfilling the criteria and investigated as per proforma and results documented and analyzed.

ORIGINAL ARTICLE

Age group (years)	Male No. of cases	Male (%)	Female No. of cases	Female (%)	Total cases	Total (%)
16-29	21	17.6%	4	17.3%	25	17.6%
30-39	28	23.5%	6	26%	34	23.9%
40-49	39	32.7%	8	34.7%	47	33%
50-59	14	11.7%	3	13%	17	11.9%
60-69	16	13.4%	1	4.3%	17	11.9%
70-79	1	0.8%	1	4.3%	2	1.4%
Total	119	100%	23	100%	142	100%

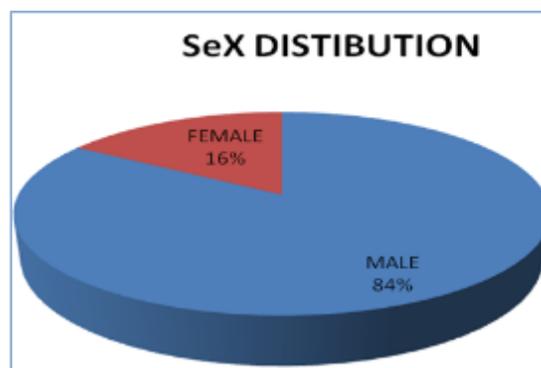
Table 1: Age and Sex Distribution

The youngest patient was 16 year old and the oldest was 70-79 years. Maximum number of cases was seen in the age group between 40-49, 47 cases accounting for 33% of cases. Minimum numbers of cases are seen in the age group of 70-79, 2 cases accounting 1.4%



Graph 1

Majority of patients are around 40-49 years (33%) with male predominance 39 (32.7%) and females are 8 accounting for around (34.7%). This is followed by 30- 39 years and 16-29 years. Patients in 70-79 years are least number with 1.4%.



Graph 2

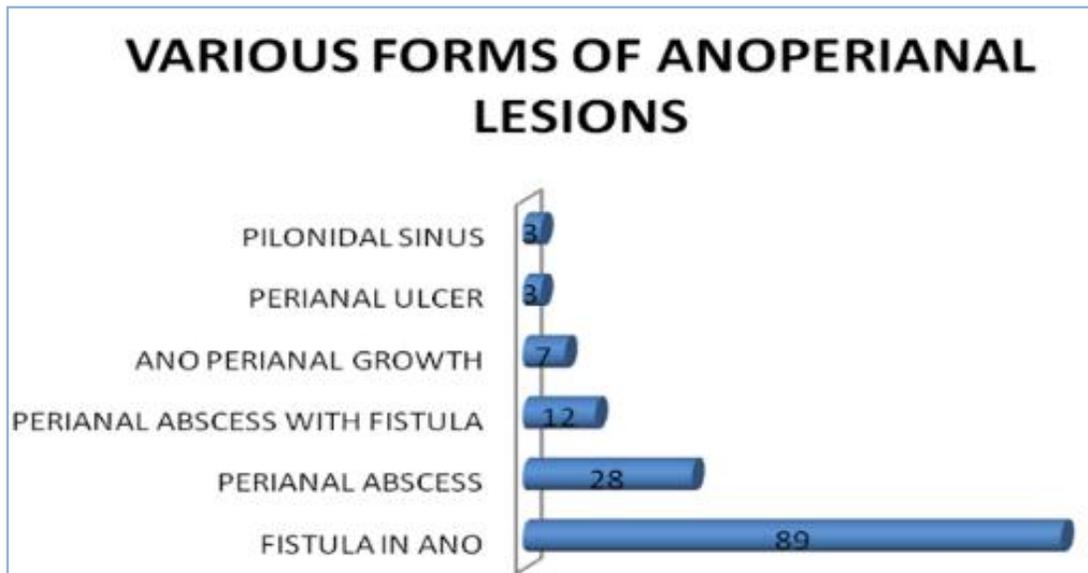
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Sex distribution of the patients showing male predominance accounting for 84% and female patients around 16%.

Anoperianal disease	Frequency	Percent (%)
Low anal fistula	63	44.4
Multiple anal fistula	18	12.7
Recurrent anal fistula	5	3.5
High anal fistula-single opening	3	2.1
Perianal abscess	28	19.7
Perianal abscess with fistula	12	8.5
Perianal ulcer	3	2.1
Pilonidal sinus	3	2.1
Anoperianal growths	7	4.9
TOTAL	142	100

Table 2

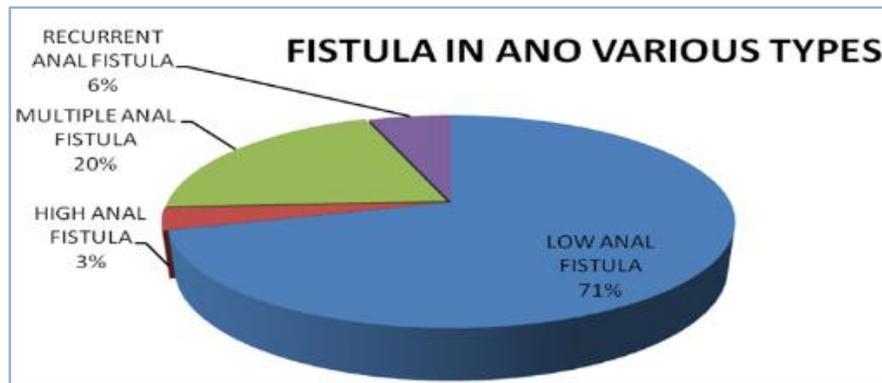
Tabular column showing occurrence of various forms of ano perianal lesions among the 142 study population.



Graph 3

The maximum cases of ano perineal tuberculosis presented with fistula in ano 89 cases, followed by peri anal abscess in 28 cases, Perianal abscess with fistula in 12 cases, Anoperianal growths in 7 cases, Perianal ulcer & Pilonidal sinus in 3 cases each.

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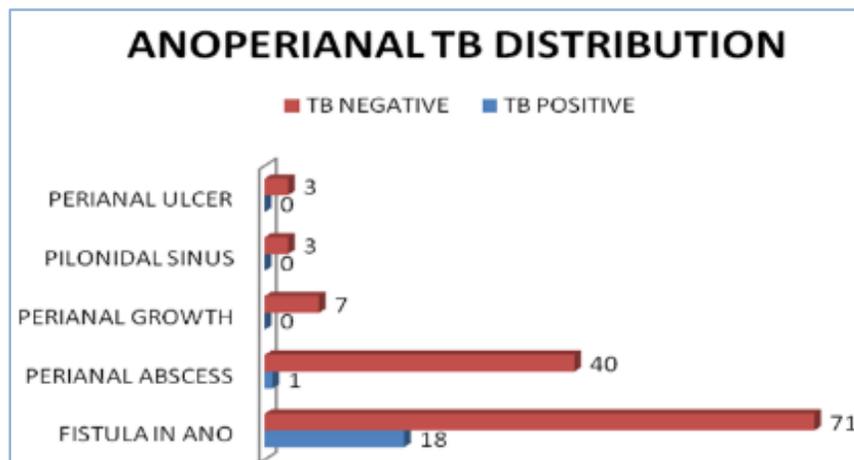
Graph 4

Among the 89 cases of fistula in ano 71% of cases had low anal fistula, 20% cases had multiple anal fistulas, 6% had recurrent anal fistula and in 3% cases there was high anal fistula.

Biopsy report	Frequency	Percent(%)
TB Koch's anal fistula	18	12.7
Non specific inflammation	115	81
No E/O TB or Malignancy	6	4.2
Malignant melanoma	1	0.7
Squamous cell carcinoma anal canal	2	1.4
Total	142	100

Table 3

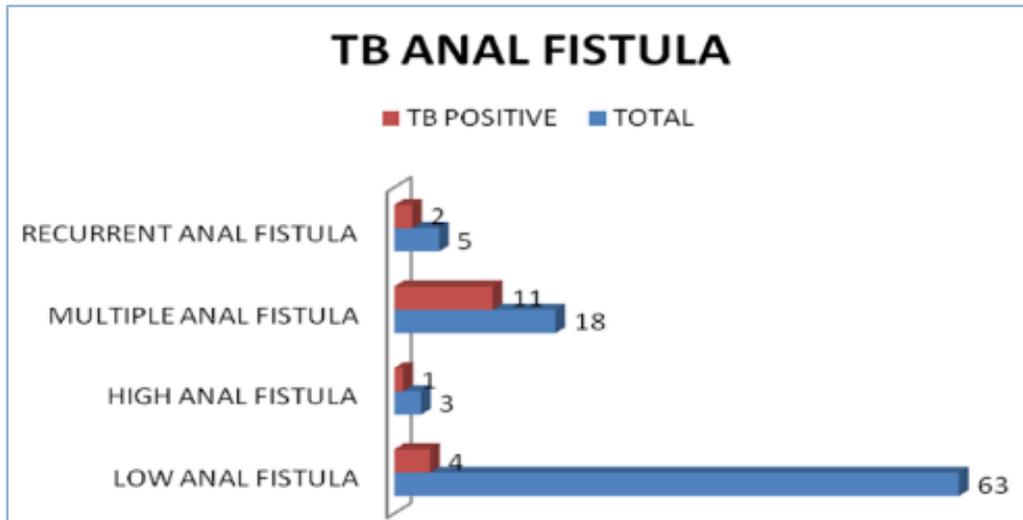
Table showing biopsy of the specimen showing maximum case of non specific inflammation and 18 patients had TB anal fistula. Squamous cell carcinoma anal canal in 2 cases & in 1 case Malignant melanoma.



Graph 5

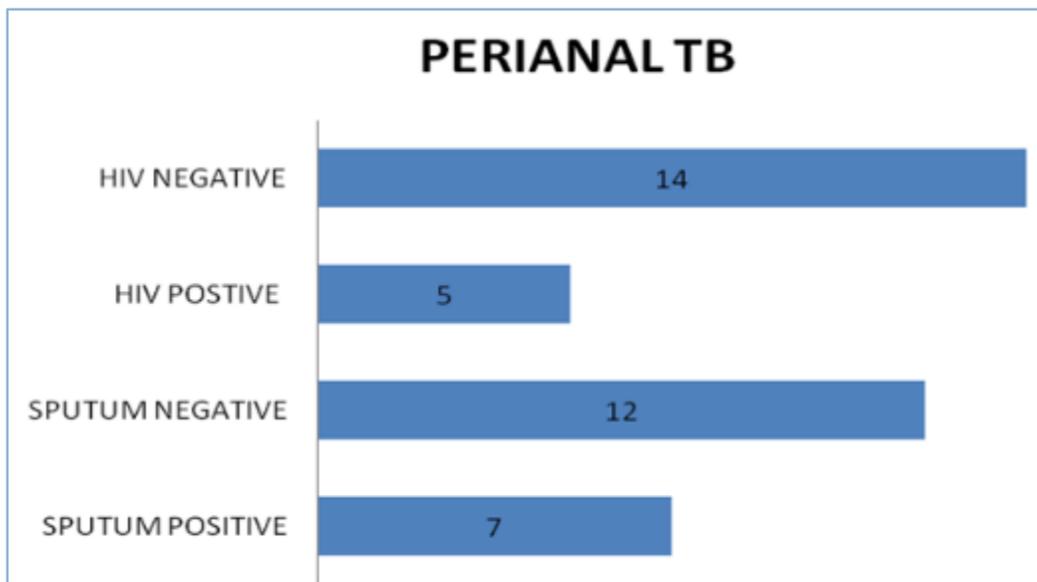
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Component bar diagram showing that in 71 cases diagnosed as fistula in ano 18 were positive for TB and 1 was positive in 40 case of peri anal abscess. There were no TB positive cases of peri anal ulcer, pilonodal sinus and in peri anal growth.



Graph 6

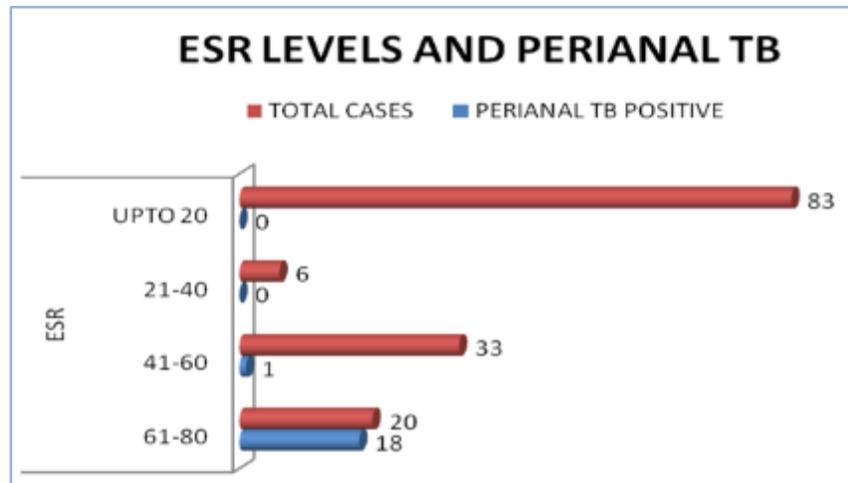
Component bar diagram showing that in 89 cases diagnosed as TB anal fistula in ano 4 were positive for TB in 63 cases of low anal fistula, 1 was positive in 3 case of high anal fistula, 11 were positive in 18 cases of multiple anal fistula, 2 were positive in 5 cases of recurrent anal fistula.



Graph 7

Figure showing among 19 positive cases of peri anal TB 14 were HIV positive 5 were negative and 7 were sputum positive and 12 were sputum negative.

ORIGINAL ARTICLE



Graph 8

Figure showing levels of ESR and TB positive cases. Among 20 cases with ESR of 61-80, 18 were positive for TB, and in 33 cases with ESR of 41-60 1 was positive for TB, and no case was positive in cases with ESR of 20- 40.

DISCUSSION: Gastrointestinal tuberculosis represents 1% of extrapulmonary tuberculosis and only sporadic cases of anal tuberculosis have been reported in the literature.^{23,22} Tuberculosis is a neglected cause of anal sepsis. Often it is not recognized and, therefore, is not treated properly.⁴

This results in recurrence of fistulas after routine surgical treatment. The clinical features of anal tuberculosis, which include anal pain or discharge, multiple or recurrent fistulae-in-ano and inguinal lymphadenopathy are not characteristically distinct from other anal lesions. In this study, there was no characteristic clinical picture for tubercular fistulae-in-ano. This series showed that there was no difference in the clinical picture including age and gender distribution and clinical features of anal lesions between the 19 cases of tubercular fistula-in-ano or 123 cases of non-tubercular fistula-in-ano.

In 7 cases of non-specific inflammation fistulas, external openings were multiple. A case reported by Gupta, 10 showed multiple (eight) external openings in tubercular anal fistulae with evidence of tuberculosis in one of the tracts. Therefore, it seems that histological examination of the excised fistula is mandatory for the diagnosis of anal tuberculosis.

As excised fistula-in-ano are not invariably subjected to histopathological examination, it may also be agreed that some cases of tubercular fistula-in-ano are missed and the incidence of anal or perianal tuberculosis may not be as low as reported in literature. However, non-recurrent fistulas may also be tuberculous. So, to prevent recurrence, all fistulas should be sent for histology. It is also concluded that a tuberculous origin must be considered when the cause of perianal lesion is unclear to avoid undesirable delay in the diagnosis and treatment.

The main differential for gastrointestinal tuberculosis remains the Crohn's disease. Crohn's disease is a debilitating expensive disease that is growing in incidence in both developing and developed countries.⁸ Clinical manifestations varies from asymptomatic skin tags to severe, debilitating perineal destruction and sepsis.

ORIGINAL ARTICLE

However, the histological differential diagnosis of Crohn's disease and intestinal tuberculosis can be very challenging, as both are chronic granulomatous disorders with overlapping histological features.⁹ In this study, none of the biopsy reports showed the evidence of Crohn's disease or and only three cases have malignancy. This may be explained by the fact that malignancy is already diagnosed because of its clinical features before the development of fistulous communications at a later stage. So, biopsy is seldom required in such patients and fistulae usually assumed as their sequel. Similarly, Crohn's disease is not common in this country; therefore, none of the patients were diagnosed with this disease in the biopsy reports.

Abdominal and pulmonary tuberculosis is commoner in men, but in this study, only one of the resected specimens from the females showed evidence of tuberculosis, it is a simple reflection of a generally increased incidence of fistula-in-ano in males compared to females in most series.²⁶ In this study, in some cases, pulmonary or other tuberculosis is accompanied with anal tuberculosis.

In this study, many fistulas were primary So, it confirms that isolated perianal tuberculosis can occur even in the absence of any tuberculous foci elsewhere in the body. Therefore, it further concludes that primary tuberculosis of the perianal region should always be kept in mind when encountering a case of recurrent fistulae or multiple fistulae not healing despite conventional surgical treatment.

The treatment is two-fold in such patients of tubercular anal fistulas i.e. surgical for the suppuration and medical for the tuberculosis. Therefore, a good response was seen when healing occurred in all of the cases of tubercular fistulae-in-ano, after anti-tuberculous treatment was started, following fistulectomy. Response to anti-tubercular chemotherapy is uniformly good, and surgery is seldom required in these patients,¹⁴ as shown in literature in such cases of perianal tuberculosis.³⁶

Recurrences are unusual after the start of anti-tuberculous therapy. Therefore, an early diagnosis is a must in such patients to prevent recurrences as well as further surgeries of such an easily curable disease.

CONCLUSION: Tuberculosis was responsible for 11% cases in recurrent fistula-in-ano responding standard surgery. Anti-tuberculous therapy led to healing within 06 months. A tubercular fistula-in-ano is seldom diagnosed pre-operatively on the basis of clinical picture. Therefore- in all cases of recurrent fistula-in-ano, histopathological examination of the excised fistula is mandatory and once tuberculosis is confirmed, antituberculous treatment should be immediately started to ensure early healing and cure of the disease. The correlation was clinically significant but statistically non-significant.

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ORIGINAL ARTICLE

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