Histopathological study of fistula in ano and its relevance

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Abstract

Introduction: Fistula in ano is disease present and documented since time immemorial but still there is no clear understanding about its pathogenesis. Many clinicopathological studies have been published. Though fistulectomy specimens are common surgical specimens received in any pathology department, there are not many studies with regard to histolopathological findings. This study was undertaken to examine the histological appearance of fistulous tract and its relevance when specific etiology was diagnosed by histopathological examination.

Materials and Methods: A total of 183 fistulectomy specimens received over period of two years, for histopathological examination were included in this study. Paediatric cases were excluded.

Observation: Most cases were in age group of 30-40 yrs (44.2%) with male preponderance. The most common histological finding was chronic non specific inflammation of the tract. Granulomatous inflammation with caseation necrosis seen in 12.56% of cases. Non caseating granuloma was seen in 4.9% alerting the clinicians to evaluate patient for a Crohns disease. None of the cases showed malignant transformation or presence of fungi, parasites.

Conclusion: Fistula in ano occurs commonly in middle age group and men more affected than women. Histopathological diagnosis is relevant to differentiate chronic nonspecific inflammation from other fistulous tract with specific etiologies like presence of granulomatous inflammation due to tuberculosis and Crohns disease. Histopathological study is also important as not to miss any malignancy presenting as fistula in ano or rare malignant transformation in long standing case. We conclude that histopathological study of excised fistula in ano is useful in further management of patients ost fistulectomy. We recommend strongly all cases of fistulectomies done for fistula in ano to be submitted for histolopathological examination.

Keywords: Fistula, Histopathology, Chronic inflammation, Granuloma.

Introduction

Surgical fistulectomy specimens are very common, but the histopathology of it is hardly mentioned in text books of pathology and literature except a very few. It comprises 5% to 10% of all surgical specimens received in the pathology department. Fistula in ano is an abnormal tract connecting a primary opening inside the anal canal to a secondary opening in the perianal skin. Fistula commonly follows intersphincteric abscess which may rupture and drain in various directions. In most cases fistulous tract shows chronic nonspecific inflammatory pathology. Other causes include tuberculosis, inflammatory bowel disease like Crohn's, ulcerative proctitis, actinmycosis, lymphogranuloma venerum and schistosomiasis.[10] In these cases the fistulas can be multiple and recurrent. In rare instance carcinoma of rectum can present through fistula in ano.[12] It has also been documented that adenocarcinoma can rarely develop in long standing fistula in ano.

Materials and Methods

A total of 183 fistulectomy specimens received from Department of General Surgery over a period of 24 months was included in the study. Pediatric cases were excluded that is age less than fifteen years. The Specimens were received and fixed in 10% neutral buffered formalin. Tissue was processed and sections were stained with routine haematoxylin and eosin. Special stains were used as required. They included Ziehl Neelson stain and Periodic Acid Schiff.

Results

A total of 183 fistula in ano was studied. Table 01 shows age wise distribution of cases. Age group varied from 16-72 years most cases were in the age group of 30-40 years with a male preponderance (Table 1).

Male is female ratio was 2.3:1 (Table 2), the most common age group in females was also between third to fourth decade.

Table 1: Age distribution

Age	Number of cases	Percentage
16 to 20	7	3.8%
21 to 30	13	7.1%
31 to 40	81	44.2%
41 to 50	53	28.9%
51 to 60	19	10.3%
Above 61	10	5.46%

Table 2: Sex Incidence age wise

Age	Number of cases male	No of cases female
16 to 20	03	01
21 to 30	09	07
31 to 40	56	21
41 to 50	37	15
51 to 60	13	08
Above 61	10	03
Total	128	55

Table 3: Histological characteristic of the fistulas

Histopathology	Number of Cases	Percentage
Chronic nonspecific inflammation	109	59.56%
Chronic inflammation with abscess	25	13.66%
Chronic inflammation with foreign body giant cells	17	9.28%
Presence of granuloma with caseation necrosis	23	12.56%
Presence of non caseating granuloma	09	4.91%
Actinomycosis	00	0
Parasites	00	0
Tract with malignant transformation	00	0

Summarises the histological character of fistulous tract. Out of 183 cases 108 case showed histological features of chronic non specific inflammatory pathology with granulation tissue, 25 cases had associated foci of neutrophilic abscess, 17 cases showed the presence of collections of foreign body type of giant cells along with granulation tissue. Granulomatous inflammation was seen in 32 cases out of which 23 were granulomas with caseation necrosis and 09 non caseating granuloma. Acid fast bacilli were positive in five cases out of 32. Four with caseating granuloma, one with non caseating granuloma. None of the cases showed fungal organism or parasite. Similarly none of the 183cases showed histological evidence of malignant transformation.

Fig. 1: G/A- Fistulous tract

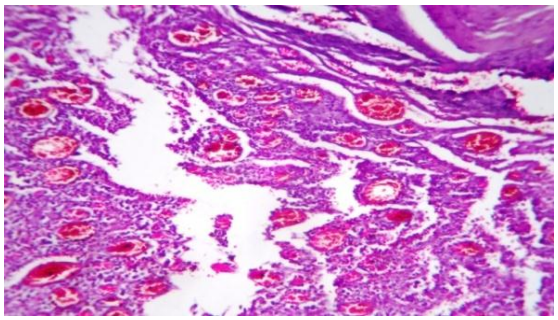

Fig. 2: Fistulous tract lined by granulation tissue (H&E X10)

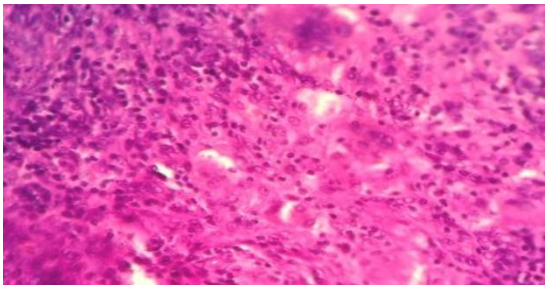

Fig. 3: Fistulous tract lined by foreign body type of Giant cells (H&E X400)

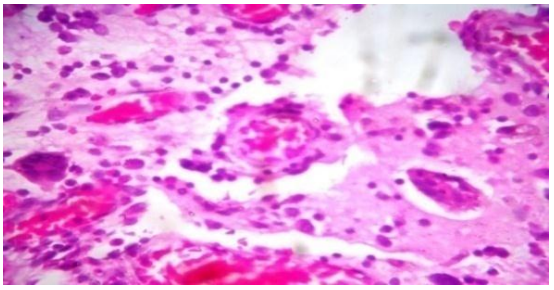

Fig. 4: Fistulous tract lined by tuberculous type of giant cells (H&E X400) granulation tissue (H&E X400)

Discussion

Fistulas are tracts that communicate between two epithelial surfaces. (Fig. 1) Anal fistulas cause persistent seropurulent discharge and irritation of overlying skin. They occur in all age groups most common being third to fourth decade. In our study the most common age group was third to fourth decade. This was similar to study done by other workers.[6,13] Males were more commonly affected than females. In our study male female ratio was 2.3:1 slightly lower than 4.6:1 ratio published by Kim et al.[4] Histologically fistulas shows tract lined by fibrous tissue infiltrated by chronic inflammatory cells and granulation tissue (Fig. 2). In our study 109 cases showed chronic nonspecific inflammatory pathology, 25 cases showed presence of foci of neutrophilic abscess, 17 had collections of foreign body type of giant cells. (Fig. 3) This was in concordance with a study undertaken by Jehoram et al[3] tuberculosis is a major burden for health care professionals, especially in developing country like India. It can manifest as pulmonary or extra pulmonary

tuberculosis. Anogenital tuberculosis is a form of extrapulmonary tuberculosis.[2] Fistulous tract can be the first manifestation of anogenital tuberculosis. Histologically tuberculous fistula shows epitheloid granuloma with caseating necrosis. (Fig. 4) Clinical diagnosis is dependent on microscopic detection using Ziehl- Neelson stain and mycobacterial culture but both methods have low sensitivity and specificity. Histological examination of excised fistula is mandatory for diagnosis of anal tuberculosis.[8] In our study 32 cases showed granulomatous inflammation out which 23 found to have caseating necrosis and favored tuberculous etiology. Similarly Ziehl Neelson staining done in these cases showed positivity only in 5 out 32 cases confirming its low yield. Therefore histological examination was relevant in diagnosing tuberculous fistula in ano and basis for further conservative management post fistulectomy. It also avoided unnecessary surgery for recurrent fistula in ano and also may prevent recurrence non caseating granuloma can be seen both in Crohn's disease and atypical mycobacterial infection. Perianal fistula may be initial presentation of Crohn's disease and may precede the onset of disease by several years. In our study 9 cases showed granulomatous inflammation with non caseating granuloma. After clinically excluding the possibility of tuberculosis, since it is so common in this part of the world, it was suggested to evaluate the patient for Crohns post fistulectomy. Actinomycosis causing fistula in ano has been described by Fry et al.[1] None was seen in our study. No parasites either schistosomiasis or leishmaniasis was encountered in our study, may be due to geographic location. This was similar to the study of Jerom et all in his study of 213 cases of fistulous tract.[3]

Adenocarcinoma can rarely develop in long standing fistula in ano.[7,11] In a study by Kline et al it was shown that carcinoma in anal fistula was associated with carcinoma else were in the colon or may develop from fistula, its self.[5] None of the fistulous tract in this study showed evidence of malignancy. This was mentioned in the comment section of the report. Malignant transformation, presence of fungal elements and or parasites are rare histological findings in fistulous tract. Though none was seen in this study but it was worth mentioning since the reporting pathologist must look for these in appropriate clinical settings. It again emphasizes the relevance of histological examination of the fistulous tract and guide to patient management.

Conclusion

Fistula in ano occurs commonly in middle aged group and men being more affected. Though surgery is the treatment of choice, histological diagnosis is important to differentiate chronic nonspecific inflammation from other fistulous tract with specific etiologies like presence of granulomatous inflammation. It will help to plan further managements of the tuberculous fistulous tract by conservative management by antituberculous drugs and avoid unnecessary surgery. A Histological diagnosis of non caseating granuloma after excluding tuberculosis should prompt the clinicians to evaluate patients for Crohn's disease. Histopathological study is also important as not to miss any malignancy presenting as fistula in ano or rare malignant transformation in long standing case. We conclude from this study that histopathological study of excised fistula in ano is relevant in further management of patients. We recommend strongly all cases of fistulectomies done for fistula in ano to be submitted for histolopathological examination.

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