Understanding of Non Cryptoglandular Fistula-In-Ano

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Abstract :

The vast majority of the Fistula-In-ano is non-specific and they have a crypto glandular origin but there are few fistulas which are specific and are due to some non crypto glandular origin. Unlike crypto glandular nature, non crypto glandular fistulas don't have any infectious base. Tubercular fistula-in-ano is the most widely recognised cause of non crypto glandular fistula-in-ano in India. Other than Tuberculosis, Crohn's disease(CD), Ulcerative colitis, Actinomycosis , Lymphogranuloma Venereum , Leukaemia, Penetrating injuries, Episiotomy wound, Prostatic Surgery, Ingested foreign body, Injury due to enema and Anal Carcinoma are considered among the culprits of causing it. In this type, chronic inflammation of the rectal wall with subacute perforation causes development of fistula. Such types of fistulas are very challenging condition for the colorectal surgeons. Foreign bodies like fish and chicken bones, toothpicks have been known cause to precipitate such condition. It is to be kept in mind that, fistula may also be associated with Malignancy.

Keywords : non cryptoglandular , fistula-in-ano , anal tuberculosis , anal carcinoma.

Introduction :

Fistula-in-ano is very common anorectal condition encountered by surgeons all over the world and they are potentially very debilitating conditions. Though the majority of fistula-in-ano are non specific due to cryptoglandular origin but 10 – 20 % are specific and non crypto glandular in nature[1]. The present hypothesis as to their cause is that they most often originate from a cryptoglandular infection in the anal canal. The anal glands are normal anatomic structures, are approximately 4 to 6 in number, and are usually located in the space between the internal and external anal sphincter. Their function is to lubricate the anal canal , their product is delivered through ducts which open into the anal canal at the base of the crypts in the dentate line. Causes of Fistula-in-ano includes Crohn's disease, trauma, foreign objects, radiation, and malignancy etc. Anal fistulas can also be categorised as "simple fistula " or "complex fistula". The diagnosis of Fistula-in-ano is usually made based on history and physical examination. It is important to distinguish Fistula-in-ano from other perianal suppurative processes such as hidradenitis suppurativa, infected skin furuncles and other infectious processes including herpes simplex virus, HIV, TB, syphilis and actinomycosis. Clinical presentations which suggests Crohn's disease, may it be large skin tags or multiple fistula openings needs a more meticulous work-up. The anal fistulas coupled with hidradenitis have an internal opening caudal to the pectinate line whereas cryptoglandular anal fistulas have their internal opening at the level of dentate line. The internal openings of an extrasphincteric fistula is cephalad to the dentate line.

Table 1.0 : Demonstrating Different causes of Non Cyptoglandular Fistula In ano :

Anorectal Diseases	Malignancy	Infections	Trauma
1. Fissure in ano 2.Crohn's disease 3.Ulcerative Colitis 4.Post Haemorrhoidectomy 5.Sclerotherapy For Haemorrhoids	1.Anal Carcinoma 2.Rectal Carcinoma 3.Leukaemia 4.Post irradiation	1.Tuberculosis 2.Lymphogranuloma Venereum 3.Actinomycosis 4.Bursitis ischiadica	1.Deep penetrating injuries 2.Faulty episiotomy 3.Post prostatic surgery 4.Ingested Foreign Body 5.Faulty enema related injuries

1. Fissure In ano that precipitates anal fistula :

A fissure consists of a crack or tear between the anal verge and dentate line in the midline of the anal canal[2]. Fissure in ano is one of the commonest diseases that are very often encountered in clinical practice. If this condition is not managed properly, underlying infection may lead to abscess formation which may further end up in fistula in ano. Usually they are of low anal type and develop on an infected sentinel tag or underlying fissure bed. Sometimes fissure bed may extend upto the anal crypts, the site where commonly the anal glands open. Through such fissure bed , the infection may extend into the anal gland and anorectal abscesses may develop subsequently which leads to fistula in ano. Patients who are in immune compromised condition like diabetes mellitus , perianal dermatitis , HIV , Chronic debilitating diseases , Steroid therapy are more prone to develop such infections. Also fistula or fissure rarely threatens the patient's life[3]. It is generally accepted that patients who present with an exposed internal sphincter, induration of fissure edges, a large sentinel pile, and hypertrophied anal papilla are not likely to respond to medical management and will require operative treatment [4] .

2. Anal Tuberculosis precipitating Anal fistula :

Pakistan positions 6th in the globe in terms of tuberculous (TB) fistulas, with an approximate rate of 181 per 100000, or 286000 new cases per annu[5] . Most of the patients comes to the doctor either as cervical, abdominal,spinal or pulmonary tuberculosis. Although it is described as one of the cause of granulomatous diseases within the anorectal region[6] , yet perianal TB, without the presence of any previous or active pulmonary infection, is extremely rare[7]. Reappearance in TB during the HIV epoch produces a new range of presentations for the surgeon[8] and therefore, incursion by tubercle bacilli is often seen at abnormal sites of the gut and documented in various journals [9] . The 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. 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 the conventional approaches. All such recurrent or complex fistulae i.e. those with multiple external opening should undergo biopsy (HPE) examination to rule

out TB. When the diagnosis is established, the management choices available are surgical for the abscess and medical management for the tuberculosis.

3. Crohn's Disease precipitating Anal fistula :

Perianal ailments is one of the significant disabling presentations of Crohn's disease(CD)[10]. These types of fistulas causes multiple problems and is the source of morbidity for Crohn's disease (CD) patients. Population-based studies showed that the cumulative incidence of perianal fistulas in CD range from 23% to 38% [11]. The cause of perianal fistulas in CD is still ambiguous. According to one theory they result from deep penetrating ulcer of the rectum or anus; another hypothesis supports their origin from an anal gland abscess. Fistulae originate by an epithelial defect caused by inflammation whose repair is impaired because the migratory potential of colonic lamina propria fibroblasts is reduced in CD [12]. Various bacterias have an acknowledged role in the precipitation and occurance of both idiopathic (most often criptoglandular) and CD related perianal fistulas. Anal fistulas can occur due to CD but also to TB,trauma,hidradenitis suppurativa, immunosuppression related to human immune deficiency virus, lymphogranuloma venereum and sacrococcygeal teratoma, rectal duplication and perianal actinomycosis, with analogous clinical manifestations[13]. Examination under anesthesia (EUA) is accepted as the gold standard to detect and classify perianal fistulas in CD patients. A perfect diagnosis is definitely achievable using imaging techniques such as MRI pelvis and/or transrectal ultrasound and in a few cases, transcutaneous perineal ultrasound (TPUS). The above said modalities should be coupled with the endoscopic examination to measure the presence or absence of active inflammatory changes in the rectosigmoid colon, the existence of internal openings or an anal or rectal stenosis [14] .The ultimate goal of management is alleviation of symptoms and maintenance of continence. Aggressive surgical management has a potential risk of anal sphincter injury. A study shows that 38% of CD fistula responded to conservative management. Minimally invasive procedure like Ksharsutra (Ayurvedic Medicated Seton) causes less sphincter damage in comparison to other surgical procedures.

4. Malignancy precipitating Anal fistula :

The occasional development of malignant disease in chronic sinuses and fistulous tracts is well recognized. The question of whether carcinomatous changes are caused by the prolonged inflammatory reaction in such tracts, however, has not been established so clearly. In 1940, Ewing [15] quoted Kraske's statement, "There is no satisfactory evidence that cancer develops in tissues altered by hemorrhoids, fistulae or cicatrices." A reasonable doubt can often be raised in a given case of whether the fistula or sinus did not arise in a malignant tumor already present [16]. It is given stress that malignancy should be assumed whenever a chronic fistula is encircled by a huge area of swelling and tenderness and drains mucus and blood. Histopathological examination is the most useful means of discovering a malignant complication, but the tissue that has to be analysed, must be isolated from the deep internal tissues concerned and not from the borders of external fistulous tracts. [17]

5. Impacted Foreign Body precipitating Anal Fistula :

Infections of the anorectal areas and fistula-in-ano are the frequent cause of perianal pain. A complex fistula in ano due to a foreign body(FB) is very rare in literature [18] .The anal canal is a very unusual site of impaction of an ingested foreign body [19]. The majority of the ingested foreign bodies passes through the digestive tract and in the stools without causing any problems[20]. The sites of impaction of the ingested foreign body include appendix, caecum and terminal ileum [21] . Impaction of FB in a fistula in ano is very rare. The majority of these anal fistula cases are caused by idiopathic cryptoglandular infections. If an ingested FB has passed ahead of the cricopharynx, it will usually pass through the whole alimentary canal without causing any complication. There are few cases reported in the literature of mediastinitis , peritonitis or intra-abdominal abscesses secondary to perforation by ingested FB. The incidence of impacted foreign body is higher in patients with previous operative manipulation of the G.I. tract [22] .

6. Episiotomy wound precipitating Anal Fistula :

Post-partum fistula-in-ano results from an infection deep in the episiotomy wound. The infection originates when a suture is inadvertently passed through the wall of the rectum. When throbbing, pain, tenderness, and local signs of infection persist beyond four days after delivery, the development of an acute fistula should be suspected. Immediate removal of the offending stitch must be carried out. Later recognition of chronic fistula is difficult and the patient may undergo perineal surgery for Bartholin's cyst, sebaceous cyst, or local abscess before the true nature of the disease is suspected. It is emphasized that only by careful examination of the rectal wall as the final act in episiotomy repair can the obstetrician be certain that perforation has not taken place [23] .

Conclusion :

Non Cryptoglandular Fistula-in-ano are not due to infection of anal Gland. Causes are varied and they have specific etilogies. They need to be suspected in all cases of Fistula-in-ano. A strong clinical suspicion is the key to diagnose such type of fistulas. Specific investigation should be adopted in each and every case to come to a final diagnosis.

References :

1. J.K.Mishra , M.Sahu , Ashis Sharma , Non cryptoglandular Fistula In Ano , A Manual On Fistula in Ano and Ksharsutra Therapy ,Chapter 11 ,First Edition, p.154.

2. Goligher J. S Surgery of the anus, rectum and colon. London: Baillere Tindall, 1984:170–91

3. F.T.de Dombal, F.T., Watts, J.M., Watkinson, G. et al. Dis Colon Rectum (1966) 9: 201. doi:10.1007/BF02616981.

4. Lock MR, Thomson JP. Fissure-in-ano: the initial management and prognosis. Br J Surg 1977;65:355–8

5. Javaid A, Hasan R, Zafar A, Ghafoor A, Pathan AJ, Rab A, et al. Prevalence of primary multi-drug resistance to anti-tuberculosis drugs in Pakistan. Int J Tuberc Lung Dis 2008; 12: 326-31

6. Shan YS, Yan JJ, Sy ED, Jin YT, Lee JC. Nested polymerase chain reaction in the diagnosis of negative Ziehl-Neelsen stained Mycobacterium tuberculosis fistula-in-ano: report of four cases. Dis Colon Rectum 2002; 45:1685-8

7. Akgun E, Tekin F, Ersin S, Osmanoglu H. Isolated perianal tuberculosis. Neth J Med 2005; 63:115-7

8. Clarke DL, Thomson SR, Bissetty T, Madiba TE, Buccimazza I, Anderson F. A single surgical unit's experience with abdominal tuberculosis in the HIV/AIDS era. World J Surg 2007; 31:1087-96

9. Clarke DL, Thomson SR, Bissetty T, Madiba TE, Buccimazza I, Anderson F. A single surgical unit's experience with abdominal tuberculosis in the HIV/AIDS era. World J Surg 2007; 31:1087-96

10. Manuela Marzo, Carla Felice, Daniela Pugliese, Gianluca Andrisani, Giammarco Mocci, Alessandro Armuzzi, and Luisa Guidi, Management of perianal fistulas in Crohn's disease: An up-to-date review ,World J Gastroenterol. 2015 Feb 7; 21(5): 1394–1403

11. Hellers G, Bergstrand O, Ewerth S, Holmström B. Occurrence and outcome after primary treatment of anal fistulae in Crohn's disease. Gut. 1980;21:525–527

12. Dignass AU. Mechanisms and modulation of intestinal epithelial repair. Inflamm Bowel Dis. 2001;7:68–77

13. Manuela Marzo, Carla Felice, Daniela Pugliese, Gianluca Andrisani, Giammarco Mocci, Alessandro Armuzzi, and Luisa Guidi, Management of perianal fistulas in Crohn's disease: An up-to-date review ,World J Gastroenterol. 2015 Feb 7; 21(5): 1394–1403

14. Regueiro M. The role of endoscopy in the evaluation of fistulizing Crohn's disease. Gastrointest Endosc Clin N Am. 2002;12:621–633

15. Ewing, J.: Neoplastic Diseases. Philadelphia, W. B. Saunders, 1940, p. 727

16. William S. Mccune, M.D., J. Richard Thistlethwaite, M.D. , Fistula Cancer , Annals of Surgery June 1959 , P. 815

17. Arturo Heidenreich,Hector A. Collarini,Alberto Mario Paladino,José María Fernandez ,Teófilo Oscar Calvo Diseases of the Colon & Rectum September 1966, Volume 9, Issue 5, pp 371–376 Cancer in anal fistulas

18. Paksoy M, Ozben V, Ayan F, Simsek A . An atypical etiology of suprasphincteric fistula: a forgotten surgical material. . Case Reports in Medicine 2010 Apr:1-3

19. Doublali M, Chouaib A, Elfassi MJ, Farih MH, Benjelloun B, Agouri Y . Perianal abscesses due to ingested foreign bodies. . J Emerg Trauma Shock 2010;3(4):395-97

20. Cockerill FR 3rd, Wilson WR, Van Scoy RE . Travelling toothpicks. . Mayo Clin Proc 1983;58(9):613-6

21. Doublali M, Chouaib A, Elfassi MJ, Farih MH, Benjelloun B, Agouri Y . Perianal abscesses due to ingested foreign bodies. . J Emerg Trauma Shock 2010;3(4):395-97

22. Leung E, Barnes R, Wong L. Bezoar in gastro-jejunostomy presenting with symptoms of gastric outlet obstruction: a case report and review of the literature. J Med Case Reports. 2008; 2: 323

23. Raymond e. anderson, M.D. Leon J.Witkowski,M.D.., Post-Partum Fistula-In-Ano: A complication of episiotomy may 1957 volume 41, issue 5, pages 790–793