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Anal Fissure: Clinical Practice, Diagnosis in Primary Care and Management Guideline. A Literature Reviews

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ABSTRACT

Anal fissures or tears in the anus are very common. At least 1 in 350 people have experienced an anal fissure. About 20% of anal fissures are accompanied by hemorrhoids. However, there are still few patients or sufferers of anal fissure who know about this condition. Not many doctors or health workers are aware of how to diagnose to primary treatment or treatment of anal fissures, so patients with anal fissures are often referred directly for surgery. In fact, anal fissures can be treated without surgery, such as dietary modifications. Surgery also has several indications and needs to be considered regarding post-operative complications that can actually be avoided. This article discusses the clinical manifestations, diagnosis and management of anal fissures.

Keyword: anal fissure, clinical practice, primary care, management.

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Introduction

Fissure ani is a linear ulcer or tear located in the anal canal and extending from below the dentate line to the anal verge. It is frequent and common, causing severe pain during or after defecation. It is the most common cause of severe anorectal pain. Cases of fissure ani occur much more frequently than many people think, and are often overlooked by healthcare professionals. Most ani fissures can be treated without surgery, and many patients seek treatment from primary care providers such as gynaecologists or gastroenterologists. As many postgraduate programme curricula do not include evaluation and treatment of anal fissures, patients are often referred directly for surgery. Fissure ani is also often overlooked and misdiagnosed with haemorrhoids.[1]

Metode

The methodology used in this paper is a literature study by collecting relevant literature from various references and focusing on the topic presented, namely Anal fissure: clinical practice, diagnosis in primary care and management guidelines, literature searches were carried out using search engines including the National Center for Biotechnology Information (NCBI) and Google Scholar with keywords anal fissure, clinical practice, primary care, management. Databases were retrieved from references published in PubMed, ScienceDirect, and Researchgate. The literature selected and included was a large number of articles obtained from various databases.

Definition and Anatomy

Anal fissure is a condition where the mucosa of the anus is torn and individuals suffering from this condition feel extreme pain often after the individual has defecated for 1-2 hours and in many cases bleeding also occurs [3]. Anal fissure is also defined as a linear or oval-shaped tear in the anal canal starting below the dentate line to the anal verge (the border of the sphincter that closes the rectum) that is usually characterised by anal pain, spasm, bleeding during defecation, hypertrophy of the proximal anal papillae, and skin tags or sentinel pile distally[1]. Based on the time span of occurrence, ani fissures are divided into acute and chronic ani fissures. Acute ani fissures last for <6 weeks and chronic ani fissures last >6 weeks [3]. Ani fissures can also be categorised based on the location of the fissure, namely anterior ani fissures and posterior ani fissures.[1]

The anal canal is ±4 cm long, extending from the anal verge to the levator complex. A line called the dentate is located ±2 cm from the anal verge, and forms the junction of squamous anoderm and columnar mucosa. The sphincter of the internal ani is a continuation of the longitudinal smooth muscle of the rectum,

and contracts at 'rest', helping to maintain continence. It relaxes during a bowel movement, allowing for the passage of faeces. The external ani sphincter, on the other, consists of striated muscle, which extends in an anterior-posterior direction, splitting around the anus, providing more thrust laterally than posteriorly and anteriorly (which likely plays a role in the pathogenesis of fissure ani) [2]. Ani fissures are commonly found in the midline, with approximately 90% occurring posteriorly, and 10% anteriorly. Approximately 1% of ani fissures are 'atypical' and not located in the midline. These atypical fissures may occur in patients with anorectal carcinoma, Crohn's disease, immunodeficiency syndromes such as AIDS, tuberculosis and a number of sexually transmitted diseases. Treatment of these 'atypical' fissures requires treatment of the underlying disease rather than the treatments discussed below.[2]

Pathophysiology and Etiology

The pathophysiology of fissure ani is not fully understood. Acute injury may cause localised pain and spasm of the internal sphincter ani. This spasm and high resting sphincter ani pressure reduces blood flow and exacerbates ischaemia. If this cycle is not broken, the fissure will remain [4]. The cause of anal fissure is still unclear but is thought to be due to trauma to the anal opening, such as defecation with hard and large faeces, local irritation from diarrhoea, anorectal surgery, and sexual intercourse. Patients with anterior fissures often have impaired rectoanal inhibitory reflexes and abnormal contractions[1]. Ani fissures based on the cause can be classified as follows.[3]

1. Primary fissure

   A primary fissure is an anal fissure that has no obvious underlying cause. Most cases of fissure ani are primary fissures so they occur without an underlying cause. Although most cases of ani fissure are primary fissures, it is still necessary to look for secondary causes.

2. Secondary fissure

   Secondary fissures are anal fissures caused by a clear underlying cause. Examples include inflammatory bowel disease, HIV/AIDS, colorectal cancer, dermatological conditions such as psoriasis or pruritus ani, anal trauma (anal sex, surgery, pregnancy); and medications, for example, opioids or chemotherapy.

In approximately 90% of patients, the anal fissure is located in the posterior midline. This preference for the posterior midline is thought to be a result of poor perfusion in this part of the anal canal. Tears are most common in the posterior midline, as the muscles around the external sphincter are weakest at the posterior commissure, and the forces created during defecation are among the strongest

posterior to the anus due to the anorectal angle, causing a fissure in the anoderm.[2]

Anterior ani fissures affect approximately 10% of patients and may have different pathophysiologies. They are often associated with injury or external anal sphincter dysfunction in young patients, especially women. Women tend to have anterior fissures more often than men, but women still have more posterior than anterior fissures. Anterior fissures may occur after vaginal delivery and heal spontaneously. It is usually encountered in young and middle-aged adults. Gender has no effect on the prognosis of this disease. Lateral or multiple fissures in less than 1% of patients. Despite this distinction, posterior and anterior ani fissures are considered the primary aetiology, while lateral or multiple fissures tend to be the secondary cause of the disease.[3]

At least 20% of patients with piles symptoms also have ani fissures, and the prevalence rate of piles was found to be as low as 4.4% and as high as 40%. Cases of anal fissures occur far more frequently than many people think, and are often overlooked by healthcare professionals. There are a number of factors that have been found to be involved in the development of ani fissures, namely trauma to the anoderm due to the passage of large, hard stools or multiple diarrhea stool discharges.[3,4]

A small study on completely resected anal fissures revealed that most patients did not have photomicrographs of the underlying inflammation. Furthermore, these fissures or defects appeared less ulcerative and more consistent with unstable anal scarring. Additional studies are needed to understand the temporal relationship between poor perfusion and lack of inflammation and to identify the best terms to describe these lesions.[5]

Acute fissures appear as tears in the anoderm, whereas chronic fissures are characterised by the presence of fibrosis and often secondary signs of fissure ani (sentinel pile, hypertrophic papillae, visible internal sphincter fibres at the wound bed). In a time perspective, chronic fissures are already symptomatic for a period of time from 4 to 12 weeks.[2]

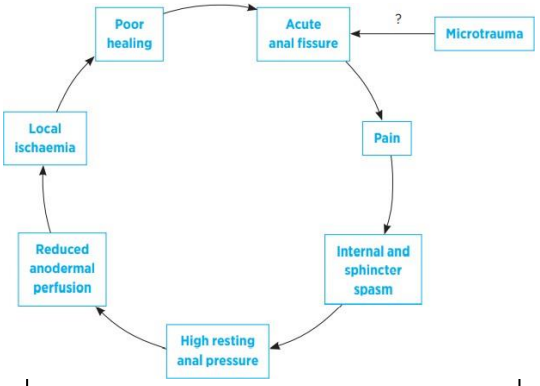

Figure 1. Pathophysiology of Fissure Ani

Clinical Manifestations and Diagnosis at Primary Level

The diagnosis of fissure ani is made by looking at the clinical history and anorectal examination. The hallmark of an

ani fissure is intense anal pain during defecation that may persist after defecation for several minutes to hours. Patients may complain of tearing during defecation with hard stools, but ani fissure may be accompanied by diarrhoea as well. Another sign of fissure ani is a history of rectal bleeding or bright red blood on the toilet paper after the patient has wiped the anal. [6,7]

Pain is the most common symptom of anal fissure and is experienced by approximately 90.8% of patients. Patients will complain of a sharp pain or tearing sensation when defecating or a few minutes after defecation. Another symptom of anal fissure is bleeding which was found in 71.4% of patients. Blood will be seen streaked on the faeces or also dripping into the toilet. Some patients may also have tender haemorrhoids and often patients assume that these are the source of their pain, so most patients are reluctant to accept the diagnosis of anal fissure.[1]

Rectal examination is performed to establish the diagnosis. The examination starts at the perianal region, followed by rectal examination and anoscopy (optional). The examination is performed in the left lateral patient position. During the examination, the doctor should watch out for signs of pruritus with excoriation, secretions, fistulas, imprints, prolapse, haemorrhoids, skin tags, condylomas and masses. With digital examination, the examiner should evaluate for spasm, pain with insertion, internal haemorrhoids, rectal masses and consistency of stool in the anal canal. Often a digital rectal examination that is very painful for the patient can support the diagnosis of fissure ani. A typical finding is a longitudinal tear of the anal canal in the posterior midline, distal to the dentate line. In chronic fissure ani, fibrosis and oedema are usually present and occasionally one can see IAS fibres at the base of the tear. A sentinel skin tag can be seen on the distal margin of the tear, often misdiagnosed as external haemorrhoids. Proctoscopy or anoscopy is helpful to evaluate the rectal and distal colonic mucosa for alternative causes of rectal pain. Finally, consider endoscopic ultrasound or MRI of the pelvis to evaluate for anal abscess or ani fistula if the diagnosis is unclear.[2]

Prognosis and Complications

The prognosis of fissure ani is good if diagnosed and treated promptly and appropriately, delay in diagnosis may lead to further delay in treatment resulting in chronic symptoms. Lateral internal sphincterotomy is the gold standard surgical operation for anal fissure. The procedure usually involves anal division of the internal sphincter from the distal end to the proximal end of the fissure or dentate line. Lateral internal sphincterotomy has an excellent healing rate of approximately

95%. Common complications are recurrence of up to 6% and incontinence of flatus or faeces (usually temporary) of up to 17%.[4]

Management

The majority of acute anal fissures resolve on their own without surgical intervention and many patients seek treatment from primary care such as gynaecologists or gastroenterologists [2]. There are 3 main components of non-operative therapy. The first component is to eliminate the pathology that caused the tear or fissure such as addressing constipation, preventing straining, and avoiding other causes of anal trauma. The second component involves relaxing the internal anal sphincter to increase blood flow and allow healing. The third component is to reduce the severity of symptoms from the tear or fissure which is usually bleeding and pain[1]. Management of anal fissure can be divided into two, namely non-operative and operative.[9]

A. Non-Operative Therapy

1. Diet and Behaviour Modification

a. Fibre consumption

Consumption of 10 g of fibre twice a day and sitz bath therapy for 15 minutes twice a day may accelerate healing compared to lignocaine ointment or hydrocortisone cream. Consumption of stool softeners, laxatives and bulking agents, along with a high fibre diet is also recommended. Consumption of 25-30 g of fibre with increased water intake may also be an alternative.[1,10]

b. Antigenic oligo diet

This diet was designed to avoid food hypersensitivity and measure its impact on anal sphincter resting pressure in chronically constipated patients.

2. Sitz Bath Therapy

This therapy has long been a part of anal fissure treatment. The benefits of this therapy are to improve hygiene, reduce pain, and reduce hypertonicity of the anal canal by helping to relax the anal sphincter which helps reduce anal pain. It is recommended to sit in a bathtub with warm water for 10 minutes after a bowel movement and before going to bed.[2]

3. Pain Control

In order to control the patient's pain, pain control treatment is required through the administration of analgesia such as paracetamol or ibuprofen. If analgesia is not strong enough to control the pain then tramadol can be considered. The administration of tramadol should be done carefully as this drug also has a risk of constipation so it must be measured correctly. Another treatment can be the use of short-term topical anaesthetics such as lidocaine 5% ointment. The use of topical anaesthetics has been shown to be effective for pain control, although its use should only be short-term (maximum 14 days) The most effective use of lidocaine ointment is when applied 1-2 minutes before defecation. It is also recommended to take a warm bath.[2]

4. Topical Ointments and Creams

First-line treatment often includes conservative measures and topical medication. Formulations used in clinical practice contain glyceryl trinitrate or calcium channel blockers. Topical nitrates such as nitroglycerin have long been used in the management of fissure ani. The purpose of nitrates is to relax IAS spasm. A low dose nitroglycerin ointment of 0.1-0.2% applied three times daily for 6-8 weeks is recommended, preferably 12 weeks. However, the administration of nitroglycerin also needs to be reconsidered as there was no significant difference in the healing rate of anal fissures with placebo. In addition, headache and orthostatic hypotension are also common side effects.[2]

Another alternative option is a CCB either diltiazem 2% ointment or nifedipine 0.5% applied two or three times daily for up to 12 weeks. This aims to lower anal sphincter pressure, an effect on the calcium-dependent tonic contraction of the IAS. About 88% of patients recover with diltiazem ointment and generally, experience fewer side effects than nitrates. The main side effects with diltiazem are perianal dermatitis and headache to a lesser extent than nitrates. Patients with recurrent symptoms can be treated with diltiazem. An alternative CCB, 0.5% topical nifedipine gel applied twice daily, showed a 30% reduction in anal pressure.[2]

5. Botulinum Toxin Injection

If the patient fails the topical pharmacological ointment therapy mentioned above, botulinum toxin (botox) injection is another alternative. Botox is a neurotoxin produced by the anaerobic bacterium, Clostridium botulinum. Botox, type A, blocks cholinergic transmission resulting in flaccid paralysis and autonomic nerve dysfunction. By blocking the innervation of to the IAS, botulinum toxin relaxes the hypertonic sphincter and accelerates healingn.[2]

The reported cure rate for anal fissure after botulinum toxin injection is 60-80% (better than placebo). Up to 42% of patients may relapse, but repeat injections have similar cure rates.

Common side effects are temporary flatulence (up to 18%) and faecal incontinence (up to 5%). Available evidence suggests that these injections may be at least as effective as topical glyceryl trinitrate and calcium channel blockers.[2]

B. Operative Therapy

Patients who have chronic fissure ani or with recurrent symptoms, and have failed medical therapy should be referred for surgical intervention. The most widely performed surgical intervention is lateral internal sphincterotomy (LIS). This has been the most common surgical approach for fissures since the 1950s, curing 89-95% of ani fissures, but with side effects. The healing rate is also higher with LIS (90%) than botulinum toxin injection (62.5%). This therapy avoids anal sphincter spasm in the long term. The procedure is performed under anaesthesia, the internal sphincter is cut under direct visualisation to the height of the fissure apex or just below it with

simultaneous removal of small sentinel stacks or hypertrophied anal papillae. Complete healing takes about 8-9 weeks postoperatively. The main complication is possible postoperative faecal incontinence.[2,10]

A recent meta-analysis of 22 randomised controlled trials estimated that the long-term risk of incontinence is as high as 14%. Manual or pneumatic anal dilatation is less common, but has the highest risk of postpostoperative incontinence, exceeding 18% and up to 34% respectively,and is not recommended in the management of fissure ani.[2]

Based on research by Stewart et al (2017), the following are the results, recommendations, and final scores or evaluations of several fissure ani treatments.[5]

1. Non-operative treatment of acute anal fissure remains safe, has few side effects, and should usually be the first-line treatment. Rate Recommendation: Strong recommendation based on moderate quality evidence, 1B
2. Anal fissures can be treated with topical nitrates, although their side effects may limit their efficacy. Level of Recommendation: Strong recommendation based on evidence, high quality, 1A.
3. Compared with topical nitrates, the use of calcium channel blockers for chronic fissure ani has similar efficacy, with better side effects, and can be used as a first-line treatment.
4. side effects, and can be used as first-line treatment.
5. Level of Recommendation: Strong recommendation based on high-quality evidence, 1A
6. Botulinum toxin has similar results compared to topical therapy as first-line therapy for chronic anal fissures, and a slight increase in healing rate as second-line therapy after treatment with topical therapy.Level of Recommendation: Strong recommendation based on low and very low quality evidence, 1C [5].
7. Lateral internal sphincterotomy is associated with consistently superior healing rates compared to medical therapy for chronic fissure ani and thus can be offered in selected patients without first confirming failure of pharmacological treatment. Level of Recommendation: Strong recommendation based on high-quality evidence, 1A.
8. Of all the surgical options, lateral internal sphincterotomy is the treatment of choice for chronic fissure ani. Level of Recommendation: Strong recommendation based on high-quality evidence, 1A.
9. Open and closed techniques in lateral internal sphincterotomy produce similar results and both techniques can be used. Level of Recommendation: Strong recommendation based on high-quality evidence, 1A
10. A lateral internal sphincterotomy tailored to the length of the fissure results in healing rates equivalent to worse healing rates with less incontinence compared to a traditional lateral internal sphincterotomy that may extend to

the dentate line.
Level of Recommendation: Weak recommendation based on moderate quality evidence, 2B.

11. Short-term results of repeat LIS for recurrent anal fissures have shown good healing rates with a low risk of faecal incontinence.
Level of Recommendation: Weak recommendation based on low quality evidence, 2C.
12. The anocutaneous flap is a safe surgical alternative in the treatment of chronic anal fissures, with a lower healing rate and with a decreased risk of faecal incontinence compared to LIS.
Level of Recommendation: Weak recommendation based on moderate quality evidence, 2B.
13. The addition of a cutaneous flap to botulinum toxin injection or to lateral internal sphincterotomy decreases postoperative pain and allows primary wound healing.
Level of Recommendation: Weak recommendation based on low-quality evidence, 2C.
14. Other causes of anal fissure: Less commonly encountered aetiologies of anal fissures such as Crohn's disease, sexually transmitted diseases, and low pressure fissures are treated with medical therapy and anal fistulectomy.
Level of Recommendation: Weak recommendation based on low-quality evidence, 2C [5].

Conclusion

Fissura ani or anal fissure is a condition where the anal mucosa has a linear or oval tear in the anal canal starting below the dentate line to the anal verge (the border of the sphincter that closes the rectum) and the sufferer feels severe pain after defecation for 1-2 hours. Fissure ani can be classified based on the time span of occurrence, namely acute fissure ani which lasts for <6 weeks as a tear of the anoderm and chronic for >6 weeks with fibrosis. In addition, ani fissures can also be classified based on the location of the fissure, namely anterior ani fissure and posterior ani fissure.

The cause of fissure ani remains unclear but is thought to be due to trauma to the anal opening, such as defecation with hard and large faeces, local irritation from diarrhoea, anorectal surgery and anoreseptive sex.

Based on the cause, fissure ani can be classified into primary and secondary fissure ani. The difference is in the primary fissure which has no clear underlying cause and the secondary has a clear underlying cause. In patients with fissure ani, there is often a disturbance of the rectoanal inhibition and abnormal contractions.

Clinical manifestations of fissure ani include intense rectal pain during bowel movements that may persist for minutes to hours after defecation, a feeling of tearing during bowel movements with hard stools, a history of rectal bleeding or bright red blood after wiping on toilet paper, tender haemorrhoids and diarrhoea. In establishing the diagnosis of fissure ani, a rectal examination can be performed, starting at the perianal area and followed by a rectal probe and an anascopy (optional) in the left lateral position. Fissure ani if diagnosed and treated quickly and appropriately then the prognosis is good, but if there is a delay in diagnosis which can lead to

delays in treatment can lead to chronic symptoms.

Management of fissure ani can be classified into two, non-operative and operative management. The majority of acute anterior fissures resolve on their own without surgical intervention and many patients seek treatment from primary care such as gynaecologists or gastroenterologists. There are 3 main components of non-operative therapy. The first component is to eliminate the pathology that caused the tear or fissure such as addressing constipation, preventing straining, and avoiding other causes of anal trauma. The second component involves relaxing the internal anal sphincter to increase blood flow and allow healing. The third component is reducing the severity of symptoms from a tear or fissure which is usually bleeding and pain or fissure which is usually bleeding and painful. Non-operative management/therapy includes diet and behaviour modification by consuming 10g of fibre twice a day and an oligo antigenic diet, sitz bath therapy, pain control with analgesia, topical ointments and creams and botulinum toxin injection. Meanwhile, operative management/therapy by performing surgical interventions such as lateral internal sphincterotomy (LIS) in patients who have chronic fissure ani or with recurrent symptoms, and have failed medical therapy.

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