

PRACTICE GUIDELINES

Japanese Practice Guidelines for Anal Disorders II. Anal fistula

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Abstract:

Anal fistulas usually result from an anal gland infection in the intersphincteric space, which is caused by bacteria entering through the anal crypt (cryptoglandular infection). Reports of anal fistulas have been as high as 21 people in 100,000. Anal fistulas are 2-6 times more prevalent in males than females, with the condition occurring most frequently in patients in their 30s and 40s. Anal abscess symptoms include sudden onset of anal pain, swelling, redness, and fever. Purulent discharge or intermittent perianal swelling and pain are most often consistent with anal fistula symptoms. Methods for diagnosing anal fistulas include visual inspection, palpation, digital examination, anoscopic examination, barium enema, fistulography, as well as imaging, such as ultrasound, CT, and MRI. Parks classification is widely adapted in the West; however, Japan usually employs Sumikoshi classification. Antibiotics should be administered in cases of perianal abscess with surrounding cellulitis, or concomitant systemic disease, or those not alleviated by incision and drainage. The site and size of incision and drainage depend upon the abscess type and location. Incisions should be performed taking care not to damage the sphincter muscles and with possible future fistula surgery in mind. As spontaneous recovery is rare, except in the case of children, surgery is the principle approach to anal fistulas. Several approaches are utilized for anal fistulas. A specific procedure may be chosen depending upon curability and anal function. Postsurgical outcomes vary from study to study. Fecal incontinence may occur after fistula surgery, but reports vary.

Keywords:

anal fistula, fistula-in-ano, fistulectomy, anal disorders, guidelines

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Introduction

The Japan Society of Coloproctology is dedicated to assuring high-quality patient care by advancing the science, prevention, and management of anal disorders. The Guideline Preparation Committee is composed of society members who were chosen from the proctology group (IIb) because they have demonstrated expertise in the specialty of anal surgery.

These guidelines were prepared not only for specialists who treat patients with anal disorders, but also for general surgeons and physicians. They aim to accomplish the fol-

lowing: (1) to understand epidemiology, etiology, pathology, diagnosis, treatment, prognosis, etc.; (2) to facilitate the safety and efficacy of treatments; (3) to reduce human and economic burden in proctology practice; and (4) to create mutual understanding between medical providers and patients.

Methodology

Initially, as scoping searches, we decided to look for domestic and foreign clinical guidelines and utilize important past documents among them. As additional databases, we

searched PubMed and The Cochrane Library for relevant items published between January 2000 and September 2013, and the Japan Medical Abstracts Society for articles published between January 1983 and September 2013 in each CQ category. From our collective work, we chose clinical research papers that included the Japanese word “*hito*” or “human” and excluded papers on animal testing or genetic research. When the specialist’s personal opinions were stated and it was not based on patient data, we referenced the work but generally did not use it as evidence. Using the above procedures, we found about 450 documents, which were selected from nearly 9,000 documents discovered through document retrieval, and critically examined whole sentences.

Grade of Recommendation Assessment

There are many types of categorizations, but the easiest one to adapt is the “JSCCR Guidelines 2010 for the Treatment of Colorectal Cancer.” Therefore, for each CQ statement, we have attached the evidence classification and grading recommendation assessments that have been created by guideline preparation committee member consensus following the JSCCR Guidelines.

Grade of recommendation, A: On the basis of a high level of evidence, guideline preparation committee members concur in their opinions. (There are documents indicating a high level of evidence. A multitude of documents exists.)

Grade of recommendation, B: On the basis of a low level of evidence, the guideline preparation committee members concur in their opinions. (A few documents have been judged as indicating a low level of evidence. Few documents exist.)

Grade of recommendation, C: Regardless of the level of evidence, the guideline preparation committee members do not agree.

Grade of recommendation D: Guideline preparation committee members have widely varying opinions.

CQ 1 What is the Etiology of Anal Fistulas?

Statement

Anal fistulas usually result from an anal gland infection in the intersphincteric space, which is caused by bacteria entering through the anal crypt (cryptoglandular infection).

Discussion

The anal canal is made up of the anal crypt, the anal gland ducts, and the anal glands, all consisting of normal tissue. Fecal material often attaches to the surface of the anal crypt. Bacteria enters the anal crypt, invading an anal gland duct, and continues on to the anal glands, eventually

causing a primary infection¹⁻⁴. The anal glands exist beneath the anoderm, in the internal sphincter, or in the intersphincteric space⁴; the fistula tract can extend from the primary infection of the anal gland to the intersphincteric space or even outside of the sphincter. Secondary extensions from the primary infection vary. Some tracts are found in the upper intersphincteric space, some are lateral to the external sphincter, and, in rare cases, they appear above the levator ani. Anal fistulas that are not associated with cryptoglandular infection also exist. For instance, there are anal fistulas that arise from a fissure, fistulas with Crohn’s disease⁵, as well as those with tuberculosis⁶, human immune deficiency viral infection, and hidradenitis suppurativa⁷.

CQ 2 How Prevalent are Anal Fistulas?

Statement

Reports of anal fistulas have been as high as 21 people in 100,000. Anal fistulas are 2-6 times more prevalent in males than females, with the condition occurring most frequently in patients in their 30s and 40s.

Discussion

The prevalence of anal fistulas in Western nations is reported to range from 5.6 to 20.8 people in 100,000, occurring most frequently in patients in their 30s and 40s⁸⁻¹². In Japan, 30% of anal fistulas occur in people in their 30s and 21% in those in their 40s^{13,14}. The male/female ratio of perianal abscesses is similar to that of anal fistulas¹⁵⁻¹⁷. In Western countries, subcutaneous fistulas range from 11% to 16%, intersphincteric fistulas from 31% to 54%, transsphincteric fistulas from 21% to 53%, extrasphincteric fistulas from 2% to 5%, and suprasphincteric fistulas comprise approximately 3%¹⁸⁻²². In Japan, the rates are as follows^{13,17,23}:

Subcutaneous fistulas, males, 11-26.5%, females, 26-31.4%;

Intersphincteric fistulas, males, 57.2-64%, females, 51.4-60%;

High intersphincteric fistulas, males, 5.1-11%, females, 2.9-8%;

Ischiorectal fistulas, males, 9.4-11%, females, 5-12.9%;

Pelvorectal fistulas, males, 1.7-4%, females, 1-1.4%.

A primary opening in the anterior region occurs more frequently in females (males 12.3%, females 25%)¹⁰.

CQ 3 What are the Symptoms of Anal Abscesses/Fistulas?

Statement

Anal abscess symptoms include sudden onset of anal pain, swelling, redness, and fever. Purulent discharge or in-

termittent perianal swelling and pain are most often consistent with anal fistula symptoms.

Discussion

Anal abscesses generally involve swelling of the anal region accompanied by sudden pain, redness, and fever. Digital rectal examination should only be gentle. Anoscopy and proctoscopy cause pain and yield little additional information. Imaging before incisions and drainage is usually unnecessary. When fever and pelvic pain are present with perirectal induration or fluctuation, a supralelevator abscess is suspected. If digital rectal examination reveals no findings, anal ultrasound, CT, or MRI may be useful²⁴. After fistula tract formation, purulent discharge or intermittent swelling and pain may occur. Anal abscesses and fistulas should be distinguished from other purulent disorders such as hidradenitis suppurativa, carbuncles, herpes simplex, HIV infection, tuberculosis, syphilis, and actinomycosis. If edematous skin tags or multiple tracts, suggesting Crohn's disease, are present, further gastrointestinal evaluation is necessary².

CQ 4 What are the Most Useful Diagnostic Methods for Anal Fistulas?

Statement

Methods for diagnosing anal fistulas include visual inspection, palpation, digital examination, anoscopic examination, barium enema, fistulography, as well as imaging, such as ultrasound, CT, and MRI. (Recommendation, B)

Discussion

(1) Visual inspection, palpation, and digital examination

An anal fistula with a secondary opening can be diagnosed by inspection only. The secondary opening can be pulled outside the anal canal in order to palpate the fistula tract. A high fistula tract can be palpated inside the anal canal. Fistula tracts in the ischioanal or pelvirectal space can be addressed by palpating the indurated levator muscle.

(2) Anoscopic examination

The primary opening can usually be found by anoscopic examination; however, sometimes the primary opening is difficult to determine.

(3) Anal ultrasound^{25,28)}

Anal ultrasound is a minimally invasive diagnostic method utilized to diagnose anal fistulas and abscesses. In one study, the accuracy rate has been reported to be as high as 89.5%²⁵.

(4) CT and MRI

CT is useful for diagnosis of ischioanal and pelvirectal abscesses. MRI is preferable for its high resolution and contrast. Coronal and sagittal images are also useful for complex anal fistulas²⁹.

(5) Fistulography

In some cases, by injecting a contrast medium, such as gastrografin, in the secondary opening, the fistula tracts and primary opening can be visualized. During surgery, indigo carmine or hydrogen peroxide can be utilized to confirm primary openings³⁰.

CQ 5 What are Anal Fistula Classifications?

Statement

The Parks classification is widely adapted in the West; however, Japan usually employs the Sumikoshi classification. (Recommendation, B)

Discussion

(1) Sumikoshi classification³¹⁾

The space above the dentate line is referred to as high: H; below the dentate line is called low: L. Multiple or curved tracts are complex: C; straight tracts are simple: S; tracts that extend on one side are unilateral: U, whereas tracts on both sides are bilateral: B. Each tract is specified using these alphanumeric indicators, for example, IILs or IIIB. The Sumikoshi classification is considered to be quite specific and clinically useful.

(2) Parks classification³²⁾

The Parks classification is more general. Fistula tracts are classified as intersphincteric, transsphincteric, suprasphincteric, or extrasphincteric on the basis of their anatomical location. In addition, intersphincteric fistulas are divided into four subtypes based on the location of the secondary tract.

(3) Other classifications

Recently, utilizing modern imaging such as ultrasound, CT, or MRI, new methods of classification with even greater anatomical detail are being proposed³³.

CQ 6 Are Antibiotics Effective with Perianal Abscesses?

Statement

Antibiotics should be administered in cases of perianal abscess with surrounding cellulitis, or concomitant systemic disease, or those not alleviated by incision and drainage. (Recommendation, B)

Discussion

Standard treatment for perianal abscesses is incision and drainage²⁴. In most cases, using antibiotics does not shorten the treatment period, or lessen the recurrence rate. However, antibiotics should be administered in cases of perianal abscess with surrounding cellulitis, or concomitant systemic disease, or those not alleviated by incision and drainage.

This is especially true for patients with immunosuppressive conditions. On the other hand, for perianal abscesses in infants, it has been reported that administering antibiotics immediately leads to lower recurrence rates^{34,35}.

CQ-7 What are the Preferred Incision and Drainage Methods for Perianal Abscesses?

Statement

The site and size of incision and drainage depend upon the abscess type and location. Incisions should be performed taking care not to damage the sphincter muscles, and with possible future fistula surgery in mind. (Recommendation, B)

Discussion

Regardless of the cause of the perianal abscess, immediate incision and drainage is standard treatment. Even in cases involving concomitant disease and anticoagulants, incision and drainage are still required. Radical surgery for perianal abscesses is controversial. It has been reported that 30% of patients treated with incision and drainage for perianal abscesses go on to develop anal fistulas^{36,37}. One study of 146 incision and drainage patients, after 15-year follow-up, showed that 50% were cured with no further intervention, 10% experienced abscess recurrence, and 37% developed anal fistulas³⁶. Men run a higher risk for developing fistulas. *E. coli* can also increase risk, as can anterior abscesses in women. Incision and drainage is preferred to radical surgery in order to preserve sphincter function³⁸⁻⁴⁵.

(1) Anesthetics

Severe pain accompanies perianal abscesses, and patient anxiety is common, so great care is required when administering anesthesia. Shallow abscesses, such as subcutaneous abscesses, or lower intersphincteric abscesses can be addressed using local anesthesia in an outpatient setting. However, with deep abscesses such as high intersphincteric abscesses, ischiorectal abscesses, or pelvirectal abscesses, local anesthesia is inadequate, so sacral epidural or spinal anesthesia methods are preferred. For patients on anticoagulants, however, spinal anesthesia is contraindicated.

(2) Body position

Depending on the size, location, and depth of the abscess, the patient is placed in the left or right lateral position with the buttocks spread. The surgeon places the index finger of the non-dominant hand into the anal canal to confirm the location of the abscess. The incision is then made with the dominant hand. Under spinal anesthesia, the patient is placed in the prone or jackknife position, with the buttocks spread using tape, and the incision is made. Lithotomy position is also useful in some cases.

(3) Incision and drainage

(a) Subcutaneous abscesses, low intersphincteric abscesses

Usually, these procedures are conducted in an outpatient setting with local anesthesia. An incision is made in the center of the inflamed area, where redness or swelling has occurred, and adequate drainage of the pus collected there is performed. A linear or cross incision is utilized to maintain continuous drainage. The closer the incision site can be to the anal verge, the better.

(b) High intersphincteric abscesses

Incision and drainage are performed under sacral epidural or spinal anesthesia. An abscess can be palpable in the submucosa up to the dentate line. Once the primary opening is confirmed, a longitudinal incision is made there. Care must be taken with bleeding. Another method is to make an incision at the anal verge, which bears the risk of sphincter injury, so this remains controversial.

(c) Ischiorectal abscesses

Incision and drainage are performed under spinal anesthesia in most cases. If the abscess is localized in the posterior region, a cross incision is made in the center of the abscess at the midline. Adequate drainage can be performed by inserting the index finger. If the abscess is located on one side or both sides of the ischiorectal fossa, one or two incisions are made at the center of the abscess. A Penrose drain, so-called loose seton drainage, may be placed through the abscess.

(d) Pelvirectal abscesses

Preoperative imaging, ultrasound, CT, or MRI, is necessary before making an incision under spinal anesthesia. An incision is made at the coccyx, and the supralelevator abscess space is drained. Recently, it has been reported that the navigating seton method using MRI is effective⁴⁶.

CQ 8 What are the Indications for Surgical Treatment of Anal Fistulas?

Statement

As spontaneous recovery is rare, except in the case of children, surgery is the principle approach to anal fistulas. (Recommendation, B)

Discussion

In most cases, surgery is the principal approach to anal fistulas. If anal fistulas go untreated, patients may experience recurrent perianal abscesses, or, in rare long-term cases, malignancies. Anal fistulas with tuberculosis or inflammatory bowel disease require thorough examination of the lungs or bowels, and systemic therapy should be conducted prior to surgical intervention⁴⁷.

CQ-9 What are Surgical Procedures for Anal Fistulas and How Effective are They?

Statement

Several approaches are utilized for anal fistulas. A specific procedure may be chosen depending upon curability and anal function. Postsurgical outcomes vary from study to study. (Recommendation, B)

Discussion

Although various procedures are utilized for anal fistulas, such as the lay-open technique, the sphincter-saving procedure, and the seton technique, there is no standard procedure that fits all types of anal fistula. Postsurgical outcomes, including recurrence and incontinence, vary from study to study. When choosing a surgical procedure, the decision should be based on the complexity, depth, and muscles affected by the tracts⁴⁸⁻⁵³.

(1) *Subcutaneous fistulas (Type I), low intersphincteric fistulas (Type II)*

(a) *Fistulotomy*

In the standard procedure, the entire tract is laid open from the primary opening to the secondary opening. Although it is laid open, the tract wall remains.

(b) *Fistulectomy*

The entire tract is laid open from the primary opening to the secondary opening; however, the tract wall is excised. There is greater healing but also greater sphincter damage. An alternative method of fistulectomy, the coring-out method, is utilized with anterior or lateral intersphincteric fistulas. This alternative method should only be performed by experienced proctologists.

(c) *Seton method*

The Seton method involves looping a cord through the tract and gradually tightening to slowly incise the fistula. The advantage of the method is that cutting gradually heals the tract and causes less damage to the sphincter. Rubber bands are generally utilized, and the duration of the procedure usually spans 2-3 months. The Seton method is effective both in terms of radicality and sphincter function preservation⁵⁴⁻⁵⁶.

Utilization of Ligation of Intersphincteric Fistula Tract (LIFT)⁵⁷ and anal fistula plugs has been reported, recently⁵⁸, but recurrence rates with these methods are relatively high, 10-40%.

(2) *High intersphincteric fistulas (type III)*

Tracts usually run from the primary opening upward to the intersphincteric space. They sometimes, however, run circumferentially and cause rectal stricture. Simple cases can be treated by excision, but complex cases involving rectal stricture necessitate incision and curettage of the tracts. The recurrence rate has been reported at approximately 10%^{59,60}.

(3) *Ischiorectal fistulas (type III)*

The primary opening and the primary focus are located at the posterior midline in most cases. Tracts extend unilaterally or bilaterally to the ischiorectal fossa. The bilateral type is called a horseshoe fistula. The Hanley procedure (Hanley)⁶¹ and the modified Hanley procedure⁶², or sphincter-preserving methods (coring out, muscle filling⁶³, and advancement flap⁶⁴) are also utilized. Treatment requires 30-50 days, and the recurrence rate is approximately 10%^{58,59}.

(4) *Pelvirectal fistulas (type IV)*

Tracts extend to the pelvirectal fossa in 1-4%. The levator ani muscle is palpated to check for hardness. MRI is necessary for accurate diagnosis and proper treatment in most cases⁴⁶. Treatment takes 2-3 months, and the recurrence rate is high at about 15%.

CQ-10 How Often is Fecal Incontinence a Result of Fistula Surgery?

Statement

Fecal incontinence may occur after fistula surgery, but reports vary.

Discussion

Reports of incontinence after fistulotomy for simple fistulas vary greatly. This is due to varied definitions of incontinence and differences in follow-up. Risk factors include pre-existing incontinence, recurrent fistulas/previous surgeries, complicated fistulas, and female gender⁴⁷. Deterioration of sphincter function after fistulotomy depends on the depth of the tract in the sphincter. In cases of high fistulas, 82% experience deterioration of sphincter function, yet even with low fistulas, the figure is 44%¹.

Incontinence has been reported to be 0-54% when using the cutting seton method with complicated fistulas; however, gas incontinence is more common than liquid or solid stool incontinence⁴⁷. In Japan, after fistulotomy for low intersphincteric fistulas, 30 out of 148 (20.3%) reported some degree of incontinence, but solid stool incontinence was rare⁶⁷.

Conflicts of Interest

There are no conflicts of interest.

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