

## Management of Anorectal Disorders.

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**Abstract:** *Ano-rectal disorders are commonly seen in surgery practice and often present with pain of with variable intensity. Efforts have long been made to reduce pain and avoid dressing. Shorter hospital stay with early return to work is the main aim in development of newer techniques in the management of ano-rectal diseases. Various modalities with main stress on surgical interventions for management of more common ano-rectal disorders is discussed. Newer interventions like stapler haemorrhoidopexy, HAL-RAR and fistula plug are promising and have shown good results with higher patient satisfaction. Non surgical office procedures for tackling some of these conditions like lasers, cryosurgery and IRC etc. , have been developed along with traditional methods like sclerotherapy and Barron's banding.*

### INTRODUCTION

Rectum is the distal part of large gut which stores the faeces. Anus is the opening for passage of stool and is formed of sphincter muscles. Patients with anorectal disease present with symptoms like bleeding, pain, discharge, itching, protrusion, changed bowel habits, seepage and incontinence. Most of the patients with anorectal diseases are scared, embarrassed, uncomfortable and nervous, therefore proper history with focus on the complaints will help to gain the confidence of the patient before physical examination and management is undertaken. Common anorectal diseases encountered in the day to day practice include:-hemorrhoids, anal fissure, anal abscess/fistula, pruritis ani, anal warts, neoplasm, pre-malignant conditions , proctitis, rectal prolapsed, polyps etc.

### HAEMORRHOIDS

Around 70% of adult population above 30 years of age is affected with this disease. It is more common in males, with the maximum incidence between 45 and 65 years of age<sup>1</sup>.

Haemorrhoids are cushions of specialized, highly vascular tissue found in the sub mucosa of anal canal. They contribute to maintaining anal continence along with anal sphincter. Only when these cushions become abnormal and cause symptoms is the condition called "Haemorrhoidal disease". Haemorrhoids have a world-wide prevalence, but are more commonly seen in urban population.

Haemorrhoids are classified as: (a) External:-when located below the dentate line and covered with anoderm/skin; (b)Internal:-when located above the dentate line and covered with columnar/transitional epithelium. These are further sub classified into I - IV degree based on size and symptoms;(C) Combined or intero-external hemorrhoids. Clinically, haemorrhoidal disease can present with bleeding, mucosal protrusion, mucus discharge, anal pain/discomfort, or sensation of incomplete evacuation. Bleeding from haemorrhoids has been show to be arterial (pre-sinusoidal arterioles) and hence is bright red in colour, usually occurring at end of defecation, in the form of dripping or squirting of blood. Proper history along with anoscopy and proctoscopy will confirm the diagnosis in majority of cases. Double-contrast Barium enema or colonoscopy is warranted if there is doubt about haemorrhoids being the cause of patient's symptomatology.

**Treatment** of haemorrhoids involves both conservative and surgical methods. Various surgical interventions which have been used in past or are still being used are: *Langenbeck, Ferguson, Park's method*, but the most common method is *Milligan- Morgan method*. The

basic characteristic of these methods are the ligation of terminal branches of haemorrhoidal artery and haemorrhoidectomy<sup>2</sup>. *Excisional haemorrhoidectomy* is associated with significant post-operative pain because of trauma to the sensitive anal mucosa and also the patient has to maintain a precise wound dressing to prevent local wound infection, because local wound exposure may lead to faecal contamination and delayed wound healing<sup>3</sup>. This created a need for search for *less invasive procedures* for treatment of hemorrhoids. During the 1980's in Italy use of automatic devices in treatment of haemorrhoids was mentioned for the first time. Later in 1993, Antonio Longo described the stapled haemorrhoidopexy<sup>4</sup>. **Stapled haemorrhoidopexy** is a technique that reduces the prolapsed of haemorrhoidal tissue by excising a band of the prolapsed anal mucosal membrane above the dentate line, using a circular stapling device. This interrupts the blood supply to the haemorrhoids and reduces the potential of available rectal mucosa to prolapsed<sup>5</sup>.

Treatment of haemorrhoids varies from simple **dietary & lifestyle modification** for mild (1<sup>st</sup> degree) disease, to an array of non-operative procedures (for 2<sup>nd</sup> and 3<sup>rd</sup> degree disease) and finally **surgery** for advanced diseases (3<sup>rd</sup> and 4<sup>th</sup> degree haemorrhoids).

The different "**office-procedures**" available for treatment of 1<sup>st</sup>, 2<sup>nd</sup> and maybe some cases of 3<sup>rd</sup> degree haemorrhoids are:

**Rubber band Ligation** : is one of the most effective and popular method for treatment of 1<sup>st</sup>, 2<sup>nd</sup> and some cases of 3<sup>rd</sup> degree piles; multiple bands can be applied in one sitting with good results.

**Injection Sclerotherapy**: commonly used preparations are 5% phenol in almond oil, sodium tetradecyl, and hypertonic saline; can be used in patients on long/short term anticoagulant therapy

**Infra-red coagulation** : effective mainly for 1<sup>st</sup> and 2<sup>nd</sup> degree haemorrhoids; the tip of the light guide is placed in firm contact with tissue using light mechanical pressure just proximal to the base of the haemorrhoid on the mucosa above the dentate line. A total of 3 to 5 exposures are made in a semi circle around the base of the haemorrhoid. Infrared energy penetrates tissue at the speed of light and is instantly converted into heat in the tissue. Following the procedure, evidence of the coagulation effect at the exposure sites will appear as several small whitish eschars<sup>6</sup>.

**Cryosurgery**: is associated with foul smelling discharge, irritation and pain; it is no longer recommended for treatment of haemorrhoids

**Bipolar Diathermy**: uses the heat generated by electric current for coagulation and obliteration of haemorrhoids<sup>7</sup>

**Direct-current electrotherapy**<sup>8</sup>

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### ND- YAG and CO<sub>2</sub> laser<sup>9</sup>

#### Surgical management

The classical surgical treatments for haemorrhoids is the **Open** (Miligan-Morgan) Haemorrhoidectomy and is offered to patients with 3rd and 4th degree haemorrhoids, patients having fistula or fissure along with haemorrhoids, or have combined intero-external haemorrhoids. Another technique is the **Closed (Ferguson)** haemorrhoidectomy in which the skin defect created after excision of intero-external pile is primarily closed (in contrast to the open method where it is left to heal by secondary intention). Four major randomized control trials have showed no significant difference in post-operative pain, complications, hospital stay or wound healing. More recently, the technique of Stapled **haemorrhoidopexy** has gained popularity after the introduction of a Circular stapler by Ethicon, which performs a circumferential resection of mucosa and sub mucosa above the haemorrhoids and then staples close the defect. It does not achieve a total excision of haemorrhoids but returns the tissue to its physiologic location. Although it can be offered for any degree of haemorrhoid, it is best suited for 2<sup>nd</sup> and 3<sup>rd</sup> degree disease not responding to non-operative methods and for 4<sup>th</sup> degree haemorrhoids. The main advantage of this method over conventional haemorrhoidectomy is less post-operative pain, early recovery and shorter hospitalization.

**HAL + RAR procedure for treatment of haemorrhoids:** this is quick, effective and virtually pain free treatment of haemorrhoids. The concept of HAL originally developed in 1995 by Dr. Morinaga in Japan. The method was enhanced towards the end of 2005 by the addition of RAR (recto- anal repair). HAL is effective for treatment for grade II and grade III haemorrhoids, coupled with RAR for some grade III and most grade IV haemorrhoids. Together they form one of the most least invasive treatment methods practiced, with no cutting and virtually no pain. The HAL-RAR procedure takes as little as 20 minutes to complete and can be performed under various types of anesthesia. Most patients experience only minor discomfort and can return to work within one or two days of receiving treatment. the risk of bleeding is far lower than with other methods.

**Procedure:** A miniature Doppler ultrasound device is gently inserted into the anus, and an audible signal allows the surgeon to point the exact location of the arteries supplying blood to the haemorrhoids. The surgeon then ties of each artery (called ligation) by placing a stitch around it and knotting the ends. As the stitch is placed not in the anus but in the lower rectum, where there is no pain nerves, the whole procedure is painless, with blood supply to the haemorrhoids being obstructed, the pressure in them is reduced almost immediately and they start to shrink in just a week or two, they are no longer visible and symptoms resolve. Where necessary RAR can also be used to reposition the prolapsing haemorrhoids.

### ANAL FISSURE

It is a longitudinal tear in the anal canal, occurring below the dentate line. It can be early or acute, or can be chronic if they persist greater than 8-12 weeks, when they show edema and fibrosis (tell tale signs of chronic inflammation). Typically, a chronic fissure is canoe shaped and associated with a skin tag (sentinel pile) at distal end of the ulcer, and a hypertrophied anal papilla at its proximal end within the anal canal. 90% of anal fissures are seen in posterior midline. Typical **clinical feature** of an anal fissure is pain, occurring during and after defecation; bleeding, if present, is minimal. **Diagnosis** is made in majority of cases based on history and local examination. Majority of anal fissures are can be seen simply by spreading the buttocks apart, and a *DRE/ Proctoscopy should be avoided, especially in*

*acute cases.* 50% of acute fissures respond to **conservative treatment** in the form of laxatives, sitz bath, dietary fiber supplementation and local application of anesthetic & anti-inflammatory agents.

**Medical methods** with varying degree of response are:

**Topical nitrates (GTN 0.2%)**<sup>10,11</sup>. 500mg applied 2-3 times a day.

**Calcium channel blockers – Diltiazem, Nifedipine**. Nifedipine causes smooth muscle relaxation and vasodilatation orally 20mg twice daily for 8 weeks or topical Nifedipine 0.3% with lidocaine 1.5% twice daily for 6 weeks can be used<sup>12,13</sup>. **Bethanecol** 0.1% cream reduces resting anal pressure.

**Topical sildenafil** 10% cream relaxes the smooth muscle by acting on PDE-5 receptors.

**Botulinum toxin-** paralysis muscle for 3-4 months<sup>14,15</sup>, thus aids healing.

**Surgical Management** for chronic anal fissures have been managed with: Sphincter stretching under GA, Fissurectomy, Lateral internal sphincterotomy .

LLIS is now considered the **gold standard** treatment due to its high success rate in ulcer healing along with low recurrence rate. Surgical management of chronic anal fissure has been accepted traditionally as an effective and standard procedure which results in healing of fissures in about 90% cases<sup>16</sup>. LLIS is the most simple and reliable method for relieving patient problems. LLIS is the gold standard treatment for chronic anal fissures<sup>17</sup>.

### ANAL FISTULA

There are abnormal tracts connecting anal canal or rectum with skin. Depending on the tract a fistula has, it is classified as:

**Intersphincteric:** are the most common variety (70%) and are the result of a perianal abscess.

**Transsphincteric:** occur secondary to an ischio-rectal abscess; account for 23% of all anal fistulae.

**Suprasphincteric :** are secondary to a supralelevator abscess; seen in 5% cases

**Extrasphincteric:** are the rarest varieties (2%).

Clinically, a patient usually presents with sero-purulent drainage, pain during defecation, recurrent swelling and drainage and relief of pain after drainage. There is usually a previous history of an abscess which was drained either spontaneously or by surgery. Additional symptoms related to the primary disease eg: IBD, HIV, actinomycosis, carcinoma, lymphoma etc may be seen in cases with *secondary* fistula in ano. Goodsall's rule, though accurate in only 70% cases, is helpful in locating the tract and internal opening of the fistula.

**Digital rectal Examination or PR examination** may reveal an indurated tract and the internal opening may feel like an indurated nodule leading to the indurated tract.

Fistulograms, CT Scan (with IV and rectal contrast), endoanal ultrasound are all helpful in defining the tract and internal openings. MRI is the most accurate investigation to delineate the primary tract, the internal opening and also any secondary extensions of the tract. Sigmoidoscopy and /or colonoscopy are indicated if one suspects IBD or carcinoma. **The treatment of fistula- in- ano** aims at removing the fistulous tract, preserving the sphincter function and preventing recurrence. Various treatment modalities in practice are: **Lay-open technique:** the entire tract extending from external opening to the internal opening at the dentate line is laid open over a probe. **Seton:** is used for high trans-sphincteric fistulas where there is a there is a risk of sphincter damage ; the lower part of the tract is laid open whereas a seton is passed to encourage fibrosis of the remaining tract ; this helps to maintain the continuity of the anorectal ring when the fibrosed tract is laid open at a second sitting.

**Fistulectomy:** once a popular method, is not preferred as it leaves a large wound behind, and the risk of damage to sphincter muscles is high.

**Bioprosthetic plug :** made from lyophilized porcine intestinal sub mucosa is a recent technique which appears to be promising; however cost is a prohibitive factor; also studies have shown a high (81%) early healing rate but an increasing delayed failure rate, reaching up to 45% at 1 year.

**Anorectal Advancement flap:** is a good option, especially when lay-open technique is inappropriate, as in cases of fistula due to IBD, high transsphincteric or suprasphincteric fistula, in women with anterior fistulas, complex fistulas and in patients with multiple previous fistula excisions.

## ANORECTAL ABSCESS

Anorectal abscess is an infected cavity filled with pus found near the anus or rectum. It results when bacteria or fecal matter enters the tissue outside the canal through infected anal glands. It can be perianal (most common), ischiorectal, intersphincteric and supralelevator (least common). Anorectal abscess is the acute condition while anorectal fistula is the chronic manifestation of the same disease process. The peak incidence is in the third and fourth decade of life. Abscess result from obstruction of the anal glands and ducts. Persistence of anal gland epithelium in part of the tract between the crypt and the blocked part of the duct leads to formation of fistula. **Etiologic factors** include: TB, actinomycosis, lymphogranuloma venereum, trauma (surgery/foreign body), malignancy, and radiation anal fissure. Patient presents with symptoms of: Severe Rectal pain, swelling, fever, urinary symptoms. It is often impossible to perform a thorough examination in some cases. In case of gluteal pain, a tender mass may be palpated on rectal or vaginal examination.

**Treatment:** Acute anorectal abscess: **Incision and drainage** using local and anesthesia is the appropriate treatment. The abscess should be drained as close to the anal verge as possible to make a subsequent fistulotomy shorter & simpler. Waiting for the abscess to point can result in spread of infection and damage to the sphincter. Drainage of larger abscesses such a horse shoe abscess requires regional or general anesthesia. A supralelevator abscess should be drained through the rectum. An ischiorectal abscess is to be drained through the rectum. If from a pelvic process, it can be drained through the rectum, ischiorectal fossa or the abdominal wall. Post operatively, patient is advised regular diet, sitz bath, bulking agent and oral non-codeine analgesics.

## PRURITIS ANI

A dermatologic condition characterized by burning or unpleasant itching condition in the perianal region. It may develop in psoriasis, lichen sclerosis but most case are idiopathic. Contributing factors include vigorous perianal hygiene, loose stools, prolapsing haemorrhoids and use of ointments which lead to maceration of perianal skin. According to Washington hospital centre criteria redness, lichenified skin and coarse ridges constitute three stages of pruritus ani. The moisture from fissure, fistula, mucosal prolapse, Paget's disease, Bowen's disease and cloacogenic carcinoma can cause pruritus. Besides fungal/bacterial or parasitic infection can also contribute to the disease. **Management** involves a detailed history and physical examination focusing the causative agents, condition, discontinuation of all previous ointments, drying the region with a dryer, applying wisp of cotton or corn starch may alleviate the symptoms.

## CONDYLOMATA ACUMINATA (GENITAL WARTS)

Most commonly encountered venereal disease in surgical practice<sup>18</sup>. The causative agent for genital warts is HPV. Patients with perianal condyloma may also harbor such lesion on the penis, Vulva, Vagina, Cervix & distal urethra, in 50-90% of cases of perianal condyloma the lesion also involve the anal canal and transitional epithelium of the distal rectum<sup>18</sup>. A strong correlation with HPV and HIV has been identified. The symptoms of the warts may vary from bleeding with defecation and complaints of anal wetness. Periance 'pap' smear should be done.

**Treatment :** Topical methods with caustic agents like bichloroacetic acid and trichloroacetic acid, cytotoxic agents like podophyllin, 5 FU, cryotherapy, electro cauter, laser, surgical excision, immunomodulators like imiquimod, autologous vaccines weekly for 6 weeks.

## PROCTITIS

It is an inflammation of the anus and the lining of the rectum, affecting only the last 6 inches of the rectum. Symptoms are: Ineffectual straining to empty the bowels, diarrhea, rectal bleeding, discharge, feeling of inadequate bowel emptying, involuntary spasms, cramping, left sided abdominal pain, passage of mucous, anorectal pain. Associated symptoms- Anemia, pale skin, irritability may be present.

**Causes of proctitis include:** idiopathic, damage by irradiation, sexually transmitted as in IgV or herpetic, stress induced, intolerance to gluten.

**Gonorrhea or gonococcal proctitis:** Etiology this is the most common cause associated with anal intercourse caused by gonococci. Symptoms are: Soreness, Itching, Bloody or pus-like discharge, Diarrhea. Concomitant presence of anal warts, tears, fistulas & hemorrhoids .

**Chlamydia (Chlamydia proctitis):** The causative organism is Chlamydia trachomatis. About 20% cases may be attributed due to this cause. Symptoms are: In mild cases are Rectal pain, Anal discharge, Cramping. In severe cases is Blood Stained discharge, Pus, Severe rectal pain, Diarrhea. Other features - Rectal strictures and Narrowing of rectal passage may be found.

**Herpes simplex Virus 1 & 2 (herpes proctitis):** The causative agent is HSV 1 & 2. Here multiple vesicles rupture to form ulcers.

Symptoms are - Tenesmus, rectal pain, discharge, hematochezia.

**Syphilis (Syphilitic proctitis):** The causative organization is Treponema pallidum. Symptoms are - Rectal pain, discharge, spasms during bowel movements Diagnosis is made from- History of sexual contact, proctoscopy, sigmoidoscopy,

Biopsy, stool sample, colonoscopy to rule out Crohn's disease or ulcerative colitis. Barium-enema x-rays. **Treatment involves** Antibiotics for bacterial infection. Antiviral for herpetic infection, 5-ASA and corticosteroids for Crohn's disease.

## RECTAL PROLAPSE

Rectal Prolapse or procidentia occur more commonly in older multiparous women in her seventh or eighth decade of life, although either sex may be affected at any age. Initially occult, but often progress to subtle external prolapse that reduces spontaneously. When there is a progressive internal collapse of the rectum with loss of its anatomic attachments, full thickness rectal prolapse develops. **A etiology** True a etiology is unknown but faulty bowel habits, straining, loss of tone of anal musculature, perineal tears in females are some precipitating factors. **Diagnosis:** External Examination shows -

Altered anatomic features, masses and patulous. Internal Examination helps in finding sphincter defects and other associated lesions. Endoscopic Inspection shows internal solitary ulcer or cluster of inflammatory nodules. Videofecography helps to delineate extent of prolapse and co-existing conditions. **Management:** If the patient presents with a grossly prolapsed rectum an attempt should be made to reduce the prolapse. If successful, elective surgery can be planned in the near future. An irreducible prolapse will require surgical intervention because the rectum is at risk of injury. In patients with overt prolapse is not visible, procidentia can be elicited with Valsalva & straining. An internal rectal prolapse may cause a solitary rectal ulcer or cluster of inflammatory nodules usually in the mid-rectum anteriorly.

**Surgery:** Full thickness rectal prolapse in adults can be treated only with operation. There are 2 main approaches: *perineal* and *abdominal*. With each, there is a choice to resect or not to resect the bowel. The decision as to which operation to perform involves a balance between potential morbidity and likelihood of recurrent prolapse and other symptoms.

**Abdominal: Trans-abdominal rectopexy** with or without resection has been shown to have lowest recurrence rate (0% to 9%) with morbidity of 15-30%. Laparoscopic Surgery for rectal prolapse has been described with or without bowel resection with similar outcomes<sup>19</sup>.

Associated prolapsed can be concomitantly treated with trans-abdominal surgery utilizing either combined rectopexy and colpopexy or a total pelvic mesh repair. The diminished sphincter tone will generally greatly improve after 6-12 months.

## POLYPS

Rectal polyps are masses of tissue that rise above the mucosal membrane and protrude into the gastrointestinal tract. Various types are: Polypoid adenomas, Villous adenomas, Hereditary polyposis, Focal polypoid hyperplasia, Juvenile polyps (hamartomas). Most rectal polyps are benign however; villous and hereditary polyps show a marked inclination towards malignancy. Predisposing factors are: Hereditary, Age, Inflammation and Diet. **Incidence:** Most prevalent in men older than 55 yrs and women 45-60 years of age. In children less than 10 years, juvenile polyps usually occur, characterized by rectal bleeding. **Signs and Symptoms:** Usually Symptomless and discovered incidentally with rectal bleeding either profuse or in streaks. **Diagnosis and Management** is by Rigid and flexible procto sigmoidoscopy, rectal Biopsy, colonoscopy if biopsy of rectal polyp shows adenomatous change, barium enema for higher polyps in the colon.

**Lab findings** include occult blood in stomach, anemia, electrolyte imbalance.

**Treatment:** Varies according to type, size & location of polyps. Common polypoid adenomas less than 1 cm need **Polypectomy**; for polypoid adenoma more than 4 cm and all invasive villous adenomas; **Abdominoperineal resection or low anterior resection**. Depending upon GI involvement: total abdominoperineal resection with a permanent ileostomy, subtotal colectomy with ileoproctostomy or ileoanal anastomosis.

**Juvenile polyps** are treated with Snare removal during colonoscopy

## ANAL INCONTINENCE

Normal anal continence depends on an intact spinal cord reflex acting on an adequate sphincteric mechanism under cortical inhibitory control. The **causes include**

- Congenital malformation of the anus in which the sphincter is

partially or completely lacking.

- Traumas. E.g. accident injury, obstetrical tears or operative trauma
- Anorectal disease e.g. rectal prolapsed, piles, chronic inflammatory bowel disease, faecal impaction, destruction as carcinoma of anus.
- Medical conditions e.g.; mental deficiency, senility and spinal cord lesions.
- Neurological and physiological diseases e.g. spin bifida, spinal tumors and trauma.

**Clinical features:** The main presentation is incontinence, which may be *partial* incontinence, overflow incontinence.

**Treatment:** There is no satisfactory treatment for most causes of incontinence. Conservative measures are satisfactory for minor degree of incontinence e.g.; anorectal lesion, faecal impaction and the sphincter tone improved by daily exercises. **Operative treatment** depends on the cause of incontinence e.g. Thiersch's operation, obstetrical injury (coloperincorrhaphy), sphincteroplasty in cases of traumatic post operative incontinence and Sphincter reefing are surgical interventions done for management of incontinence cases.

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