ROLE OF DUAL LENS ENDO PROCTOSCOPY IN ANORECTAL DISEASE

By

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P.G. IN GENERAL SURGERY

Dissertation submitted to B.L.D.E. (Deemed to be University)

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In partial fulfilment of the requirements for the degree of

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IN

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ABSTRACT

Background: Anorectal diseases constitute a significant portion of surgical practice worldwide, affecting quality of life and productivity. Accurate diagnosis is essential for appropriate management, with proctoscopy being a fundamental diagnostic tool. This study aimed to evaluate the role of dual lens endo proctoscopy in the diagnosis and management of anorectal diseases.

Methods: This prospective study was conducted at Shri B.M. Patil Medical College, Hospital and Research Centre, Vijayapura from April 2023 to January 2025. A total of 384 patients presenting with anorectal symptoms underwent evaluation using dual lens endo proctoscopy. Demographic data, diagnoses, histopathological findings, and management approaches were recorded and analysed. The images were utilised for patient counselling, HPR annotation and to create Image bank for AI based diagnosis of anorectal disease.

Results: The majority of patients were in the 31-40 years age group (27.6%) with a male predominance (71.4%). Anal fissure (20.3%), Grade 2 hemorrhoids (19.8%), and fistula in ano (15.6%) were the predominant diagnoses. Management was nearly equally distributed between conservative (50.5%) and operative (49.5%) approaches, with significant associations between specific diagnoses and treatment strategies ($p<0.001$). Gender-specific patterns in disease distribution were observed ($p=0.008$), with anal fissures more common in females and fistula in ano more prevalent in males. In nearly half of operated population, these images were utilised for HPR annotation by pathologists.

Conclusion: Dual lens endo proctoscopy demonstrated significant utility in the evaluation of anorectal diseases, offering enhanced visualization that facilitated accurate diagnosis and appropriate management planning. The demographic and clinical patterns observed largely

aligned with existing literature, with some notable regional variations. The technology's integration into routine clinical practice appears justified based on its diagnostic advantages, and for future use in AI based diagnosis of anorectal disease.

Keywords: Dual lens endo proctoscopy; Anorectal disease; Haemorrhoids; Anal fissure; Fistula in ano; Proctoscopy; Anorectal pathology; Minimally invasive diagnosis: Artificial Intelligence

ABBREVIATIONS

ABBREVATIONS	FULL FORMS
DLP	Dual Lens Endo Proctoscopy
PR	Per rectal
DRE	Digital Rectal Examination
SD	Standard Deviation
VA	Video anoscopy
HPR	Histopathological reporting
IAS	Internal anal sphincter
LIS	Lateral Internal Sphincteromy
MPFF	Micronized purified Flavonoid Fraction
LIFT	Ligation of Intersphincteric fistula Tract
VAAFT	Video-assisted anal fistula treatment
FILAC	Fistula tract laser closure
AI	Artificial intelligence
OPD	Outpatient department
IPD	Inpatient Department
MRI	Magnetic Resonance Imaging
HSV	Herpes simplex virus
LGV	Lymphogranuloma venerum
ESCP	European Society of Coloproctology
IBD	Inflammatory Bowel Disease
HIMS	Hospital Information Management System

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INTRODUCTION:

- As the incidence of rectal and perianal conditions continues to rise, it's important to thoroughly examine the anal and perianal areas of all patients who present with anorectal issues. Assessing the anal canal and perianal region is an essential part of a comprehensive screening for colorectal diseases.[1,2]
- While colonoscopy is a widely recognized diagnostic and therapeutic method for colorectal diseases, it has limitations when it comes to visualizing and assessing the anal region. Certain techniques, such as rectal retro flexion, can improve the evaluation of the lower rectum and anal canal during a colonoscopy.[3.4] However, even with these strategies, some abnormalities may be missed, leaving many anal canal disorders undiagnosed.
- Anoscopy is considered the gold standard for examining the anal canal, yet it is often overlooked in medical practice.[2.5] The standard anoscope allows for direct visualization of the anal region, usually without the need for sedation or bowel prep.[6] However, many patients find anoscopy uncomfortable, sometimes painful, and at times, an embarrassing procedure.
- Lazas et al. introduced the concept of video anoscopy (VA), where the examination of the anal canal is performed using an anoscope without sedation[5]. Performing VA was easy, but had a single camera at the edge and couldn't document some of the lesion, like fistula opening.
- Studies available in the literature on video anoscope for detection of anal canal diseases are scarce[7]. (limited)
- DLP consists of 2 cameras, one at the tip which allows for direct visualization of anorectal pathology. There is a second at a 90 degree angle, which allows for

visualizing mucosal surface, internal opening of fistula, polyps, extension of fissure, solitary ulcer etc.

- The aim of our study is to examine the range of diagnoses, the prevalence of anal disorders, and highlight the significance of anal examinations performed using Dual Lens Endo Proctoscopy (DLP) for anorectal diseases.

NEED FOR THE STUDY

- Proctological tests are generally straightforward procedures that don't require any prior training. The surgeon can develop a differential diagnosis and confirm a clinical suspicion using proctoscopy.
- However, because of a number of drawbacks, including the uncomfortable position (both in the Sims and in the genupectural position, where the operator is very close to the patient's perineum), the inability to provide visual proof of the pathology, the lack of data archives, and the inability to compare two examinations after a certain period of time, proctoscopy is not preferred by patients (e.g. to test the validity of the therapy adopted). In certain difficult anorectal conditions such as fistula and sinus, rigid proctoscopes make it difficult for visualization of internal opening of fistula and sinus and thus may result in misdiagnosis and delayed diagnosis of certain disorders.
- Thus the use of Dual Lens Endo Proctoscopy (DLP) enables very good visualization, makes it simple to gather data for diagnosis and therapy, and works well as a teaching tool for proctology.
- This device adds on to one of the latest innovations in surgical field.

AIMS AND OBJECTIVE OF STUDY

AIM: This technique of DLP will help / support doctors in better diagnosis of anorectal disease with minimum risk and maximizing benefits to patient.

OBJECTIVES:

1. Lead time: (start to end time of procedure)
2. To study the Operational Flexibility.
3. Data generation, Documentation, and Reporting.
4. Utilization of technique for patient counseling.
5. Annotation of images for HPR and AI (artificial intelligence)

RESEARCH HYPOTHESIS

Dual Lens digital Endo proctoscope (DLP) images offers objective, cost effective, feasible diagnostic tool for pre, intra and postoperative anorectal diseases. Easy to operate in minimal time and plays a role in improvising the diagnosis, counselling, data repository and annotations of specimen for HPR.

REVIEW OF LITERATURE

- Harish et al. [1] in their study evaluated effectiveness of videoanoscopy (VA) in comparison to retro flexion of the colonoscope in detecting hemorrhoids and their relation to bleeding. About 358 patient were examined by the technique of videoanoscopy and retro flexion of colonoscope in the rectum independently by two observers and images compared. It was concluded that videoanoscopy detected hemorrhoids in significantly more patients than retro flexion of the colonoscope with higher sensitivity and provided valuable, objective information about hemorrhoid - characteristics and their relation to bleeding, making it a useful adjunct to standard colonoscopy procedures.
- Kelly et al.[2] (1986) conducted a study titled *"A Prospective Comparison of Anoscopy and Fiber endoscopy in Detecting Anal Lesions"*, which compared the effectiveness of anoscopy and fiber endoscopy in identifying anal lesions. They discovered that while anoscopy was effective for detecting superficial anal conditions, fiber endoscopy provided a more thorough examination and was better at identifying deeper lesions, including those higher in the anal canal. The study concluded that fiber endoscopy could be more advantageous than anoscopy in certain situations, particularly for detecting less obvious or more distal anal issues. Nevertheless, anoscopy remained valuable due to its simplicity, lower cost, and efficacy in diagnosing common conditions like hemorrhoids. The authors suggested using both techniques together, depending on the patient's specific clinical needs, especially when dealing with complex or multiple anal disorders.
- Lazas, Moses, and Wong [5] (1995) explored the potential of video endoscopic anoscopy as a more effective alternative to traditional anoscopy for diagnosing anal conditions. This technique uses a video camera attached to the anoscope, offering clear, real-time

images that allow for a more detailed view of the anal canal. It proved especially useful in identifying issues like hemorrhoids, anal fissures, and tumours. The study found that video endoscopy provided a broader view of the anal area and was better at detecting deeper or more complex lesions that traditional anoscopy might miss. Additionally, the ability to record and store video images enhanced documentation and follow-up care. The authors concluded that video endoscopic anoscopy is a valuable tool, particularly for diagnosing conditions that are difficult to see with standard anoscopy, and could lead to better clinical outcomes in managing anal pathologies.

- Alexandre Gomes et al.[8] in their study involving 12,151 patients explored the effectiveness of integrating video anoscopy (VA) during routine colonoscopies to enhance the diagnosis of anal conditions and highlighted that VA revealed a range of pathologies such as hemorrhoidal diseases, anal fissures, perianal fistulas, and even neoplastic lesions, including rare anal cancers. The findings suggested that VA improves the diagnostic accuracy of colonoscopies, particularly in identifying anal diseases and neoplasms, which are often overlooked in standard procedures. The authors advocated for the routine use of VA during all colonoscopies to provide comprehensive assessments of both colonic and anal health.

HISTORICAL REVIEW:

Proctology refers to a study involving conditions, affecting rectum, anus and perianal region. The term proctology comes from the Greek words "proktos," which means "anus" or "hind parts," and "logia," which means "science" or "study." [14]

Disorders affecting the lower segment of the digestive tract were initially described as far back as 2750 BC in Egyptian hieroglyphs. The Chester Beatty Papyri from the 19th dynasty of Egypt, written by physician Iri in 1300 BC, was the first publication exclusively dedicated to anorectal diseases. Fistulas and hemorrhoids were described in the Hippocratic writings.[15]

While anorectal disorders may not be life-threatening, they can significantly impact patients' daily activities and quality of life. The comprehensive anorectal examination, including the use of proctoscopy, has become a lost art due to factors such as surgeons' inexperience and patients' discomfort and lack of awareness.

Dual lens Endoproctoscopy seeks to bridge this gap by assessing the range of diagnoses, the prevalence of anal disorders, and emphasizing the importance of anal examination for anorectal diseases.

SURGICAL ANATOMY OF ANORECTAL REGION

DEVELOPMENT OF ANAL CANAL & RECTUM

The development of the tail fold leads to the formation of the hindgut from the secondary yolk sac, which eventually gives rise to the rectum, the upper part of the anal canal, the left third of the transverse colon, and a significant portion of the genitourinary system. The cloacal membrane forms on the ventral wall of the "endodermal cloaca," a pouch created as the hindgut area enlarges caudal to the allantois.

Later, the cloacal membrane settles into the "ectodermal cloaca," a small, shallow depression. The endodermal cloaca can be accessed through the hindgut and allantois. During the fifth week of intrauterine life, mesonephric ducts puncture its wall. The cloaca is then divided into two segments: the ventral section, which forms the urinary bladder and urogenital sinus, and the dorsal segment, which forms the rectum.

These segments are covered caudally by the urogenital membrane and the anal membrane, respectively, following the development of the urorectal septum. The upper portion of the anal canal is derived from the endoderm, while its lower portion originates from the proctodeum. In adults, the line of union aligns with the borders of the anal valves. [16, 17]

RECTUM

The rectum begins as a direct continuation of the sigmoid colon and is completely located within the pelvis. In the UK, endoscopic examinations typically describe the rectum as being 15 cm long from the anal verge. Radiologically, it starts at the level of the third sacral segment, and operatively, it is defined by the confluence of the taeniae in the pelvis, with a corresponding absence of appendices epiploicae or a true mesentery.

The rectum's longitudinal direction aligns with the sacrum and coccyx's ventral concavity. As a result, the rectum first travels downward and backward before moving downward and forward to reach the pelvic diaphragm. The sacral flexure refers to this rectum's natural ventral bend. At the pelvic diaphragm, the rectum transitions into the anal canal. **[15, 19]**

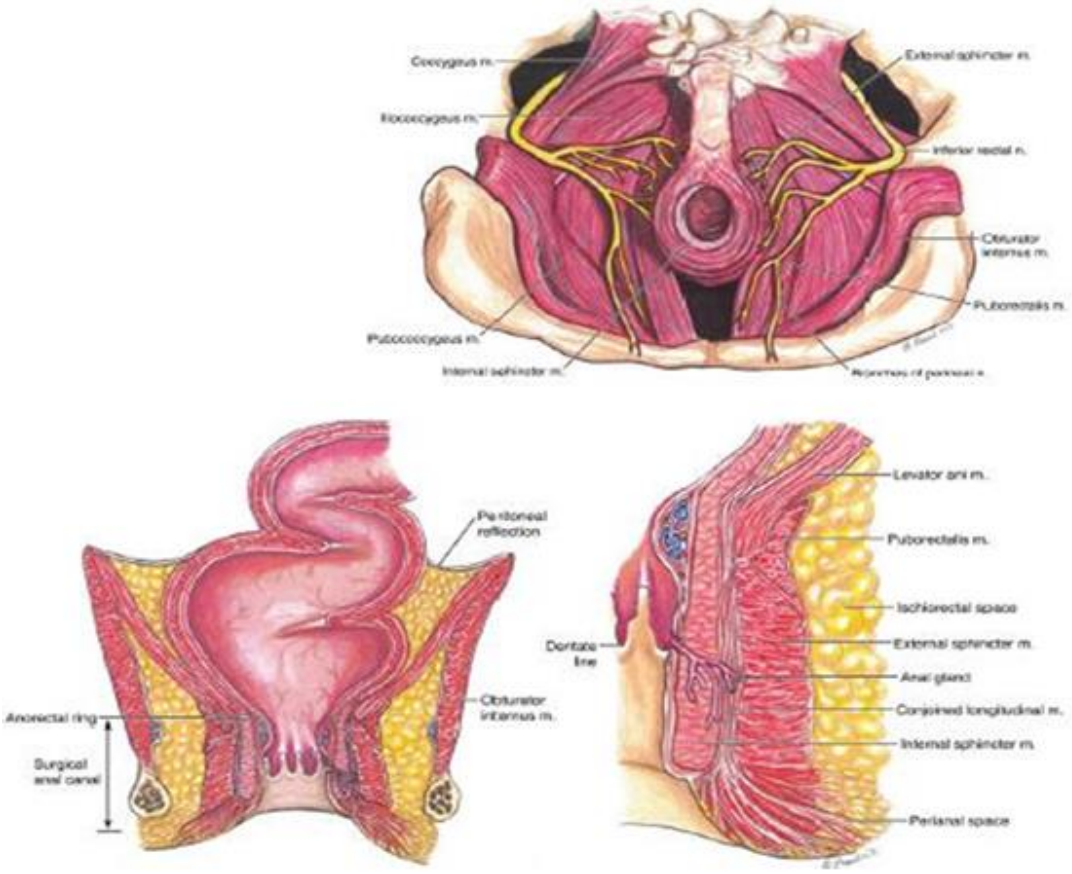


Fig 1. GROSS ANATOMY OF RECTUM AND ANAL CANAL

CURVATURES OF RECTUM:

The rectum has a set of three laterally oriented curves in addition to ventral curvature. The middle curve points to the left, while the upper and lower curves are directed toward the right. These curves correspond to transverse, sickle-shaped folds on the inner surface of the rectal tube, known as rectal shelves or the valves of Houston. These folds are formed by the inward projection of condensed muscle in the rectal wall, covered with mucosa. The most noticeable rectal shelf is the middle one, which is easily visible during rigid and flexible sigmoidoscopy.

From a surgical standpoint, the rectum is further separated into three parts: the upper, middle, and lower thirds.

In terms of peritoneal coverings, the middle third of the rectum only has peritoneum covering its anterior surface, while the upper third has peritoneum covering both its anterior and lateral surfaces. There is no peritoneal covering on any aspect of the lower third of the rectum since it is located beneath the peritoneal reflexion. [15, 19]

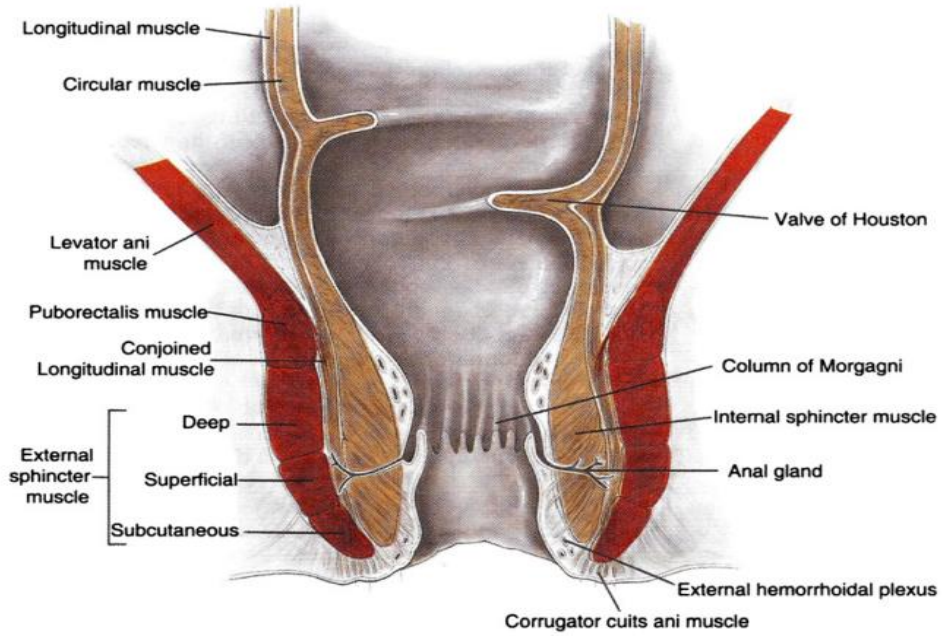


Fig 2. EXTERANAL AND INTERNAL ANAL SPHINCTERS

ANAL CANAL

The anal canal, which is entirely located outside the peritoneal cavity, represents the final segment of the lower gastrointestinal tract.

It measures approximately 4 cm in length, beginning at the point where the rectum meets the pelvic diaphragm above and terminating at the anal margin below.

The pelvic diaphragm consists of the levator ani muscles and small coccygeus muscles, along with their surrounding fascia. It is incomplete at the front, allowing for the passage of the urethra in both males and females, and the vagina in females.

During a digital rectal examination, the muscular junction between the rectum and the anal canal can be felt as the anorectal ring, formed by the joining of the puborectalis fibers from both levator ani muscles, the deep portion of the external anal sphincter, and the upper fibers of the internal anal sphincter.

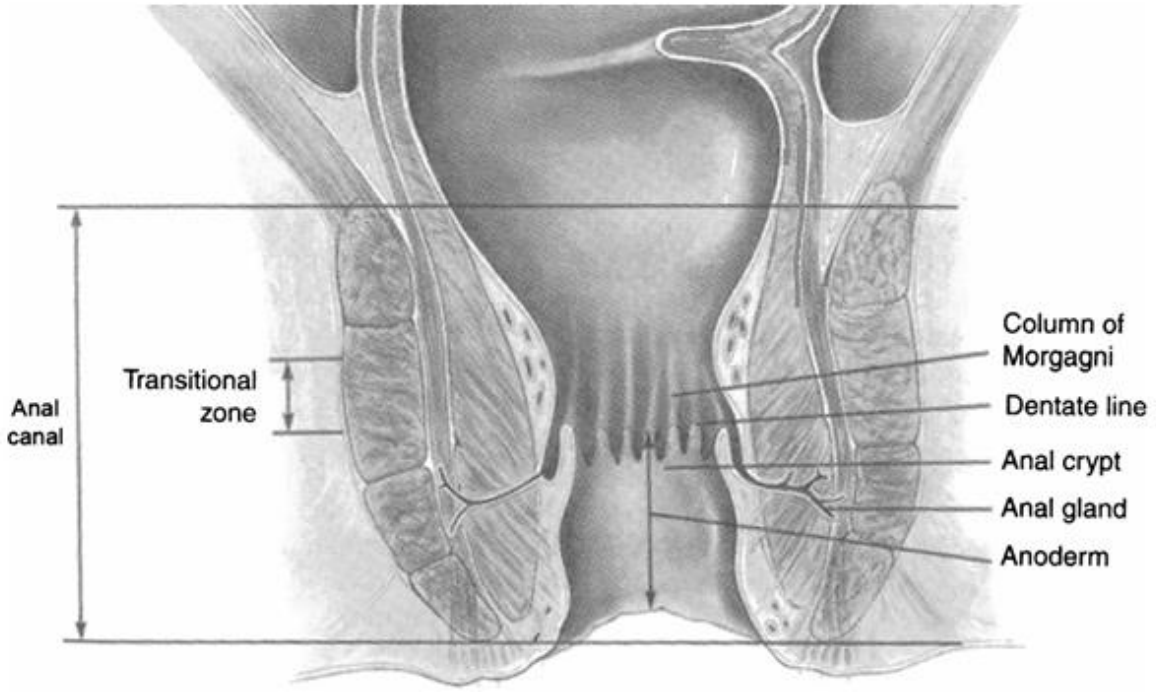


Fig 3. RECTAL AND ANAL MUCOSA

The mucous membrane lining the upper half of the anal canal originates from hindgut endoderm and is composed of columnar epithelium, which is sensitive only to stretching due to innervation by nerve fibers from the autonomic hypogastric plexus (similar to the rectal mucosa).

This upper anal canal mucosa features 8 to 12 longitudinal folds known as anal columns (or columns of Morgagni). These columns are interconnected at their lower ends by semilunar

folds called anal valves (or anal valves of Ball), which contribute to the distinctive wavy appearance of the dentate (or pectinate) line, marking the boundary between the upper and lower parts of the anal canal. Just above the dentate line, the mucosa takes on a plum-coloured look, while below it transitions to a parchment-coloured stratified squamous epithelium that is sensitive to pain, temperature, touch, and pressure due to innervation by the somatic inferior rectal nerve.

At the base of the anal columns are the anal sinuses or crypts, some of which (mainly those situated at the back) are connected to the anal glands. The normal anal canal typically contains 4 to 8 anal glands, each opening directly into the top of an anal crypt, with occasional instances of two glands sharing the same crypt. It is believed that infections of the anal glands can lead to the formation of perianal abscesses and fistula-in-ano. [15, 19]

BLOOD SUPPLY OF ANAL CANAL:

Arterial supply:

a. Superior rectal artery: The inferior mesenteric artery descends and becomes the superior rectal artery at the base of the sigmoid mesocolon after passing over the left common iliac artery and vein. It descends in the sigmoid mesocolon, where it splits into the left and right branches at the level of the third sacral segment (upper part of the posterior rectum). The right branch splits into a right anterior branch and a right posterior branch. These branches anastomose with the middle rectal arteries. Further branches penetrate the muscle layer and travel to the anal columns in the sub mucosal plane, where they end as a capillary plexus above the anal valves. This explains why hemorrhoids are prominent in three main locations.

b. Inferior rectal artery: The lower portion of the anal canal is mostly supplied by the inferior rectal artery. These blood vessels supply the anal sphincter muscles after emerging from the pudendal arteries and passing via the ischioanal fossa.

c. Middle rectal arteries: The anterior division of the internal iliac arteries on each side gives rise to the middle rectal arteries. Several angiographic studies have confirmed anastomosis of these branches with superior rectal arteries. [18, 20]

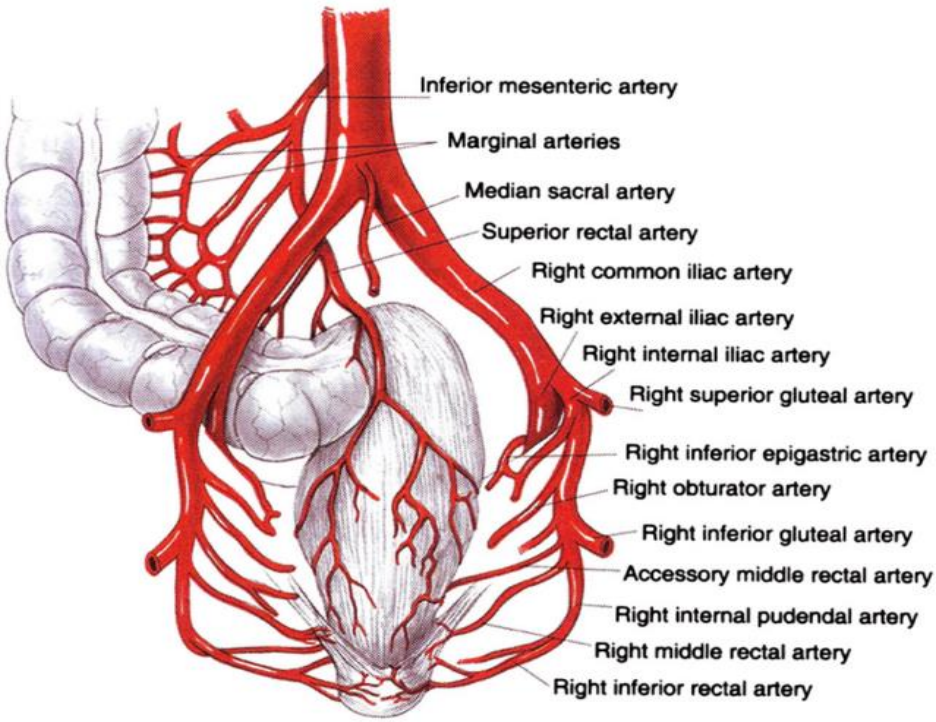


Fig 4. ARTERIAL SUPPLY OF ANORECTUM

Venous Drainage of Anal Canal:

The peculiarity of venous drainage of the rectum and anal canal is of immense importance.

- The superior rectal vein drains blood from the rectum and the upper part of the anal canal above the dentate line (where the internal hemorrhoidal plexus is located) into the portal system through the inferior mesenteric vein.

- The middle rectal veins take blood from the lower part of the rectum and the upper part of the anal canal and send it into the systemic circulation via the internal iliac veins.
- The inferior rectal veins are responsible for draining blood from the lower part of the anal canal, where the external hemorrhoidal plexus is situated, into the systemic circulation through the internal pudendal veins.[18]

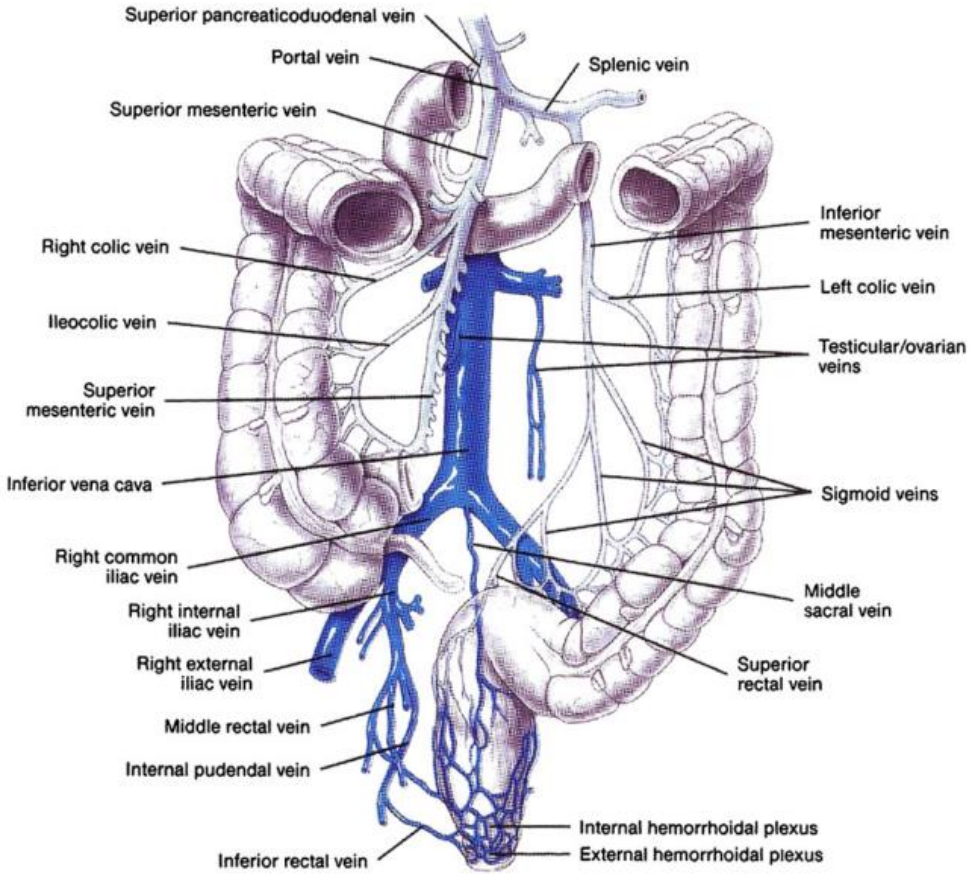


Fig 5. ANORECTAL VENOUS DRAINAGE

Lymphatic drainage of Anal Canal:

Lymphatic drainage in the large intestine starts with a network of lymphatic vessels and lymphoid follicles in the lamina propria, extending along the muscularis mucosa. This

network becomes more extensive in the submucosa and muscle layers before draining into lymphatic vessels in extramural regions.

In the anal canal, lymphatics above the dentate line follow the superior rectal artery and eventually drain into the inferior mesenteric lymph nodes.

Lymphatic vessels also follow the middle and inferior rectal arteries, traveling laterally through the ischioanal fossa to reach the internal iliac lymph nodes.

Lymphatics below the dentate line typically drain into the inguinal lymph nodes. However, if the primary drainage pathway is obstructed, lymph can be redirected into the superior and inferior rectal lymphatic systems.

Nerve Supply of the Rectum and Anal Canal

The rectum receives nerve supply from both parts of the autonomic nervous system. The internal anal sphincter is influenced by both the sympathetic and parasympathetic systems, with the sympathetic acting as motor and the parasympathetic having an inhibitory effect.

Parasympathetic fibers from the sacral region travel to the inferior hypogastric plexus, while sympathetic fibers come from the superior and inferior hypogastric plexuses. The external anal sphincter is innervated on both sides by the perineal branches of the fourth sacral nerve and the inferior hemorrhoidal branches of the internal pudendal nerve.

Additionally, the fourth sacral nerve innervates the levator ani muscles on the pelvic side, while the perineal branches of the pudendal nerves supply the muscles on the perineal side.

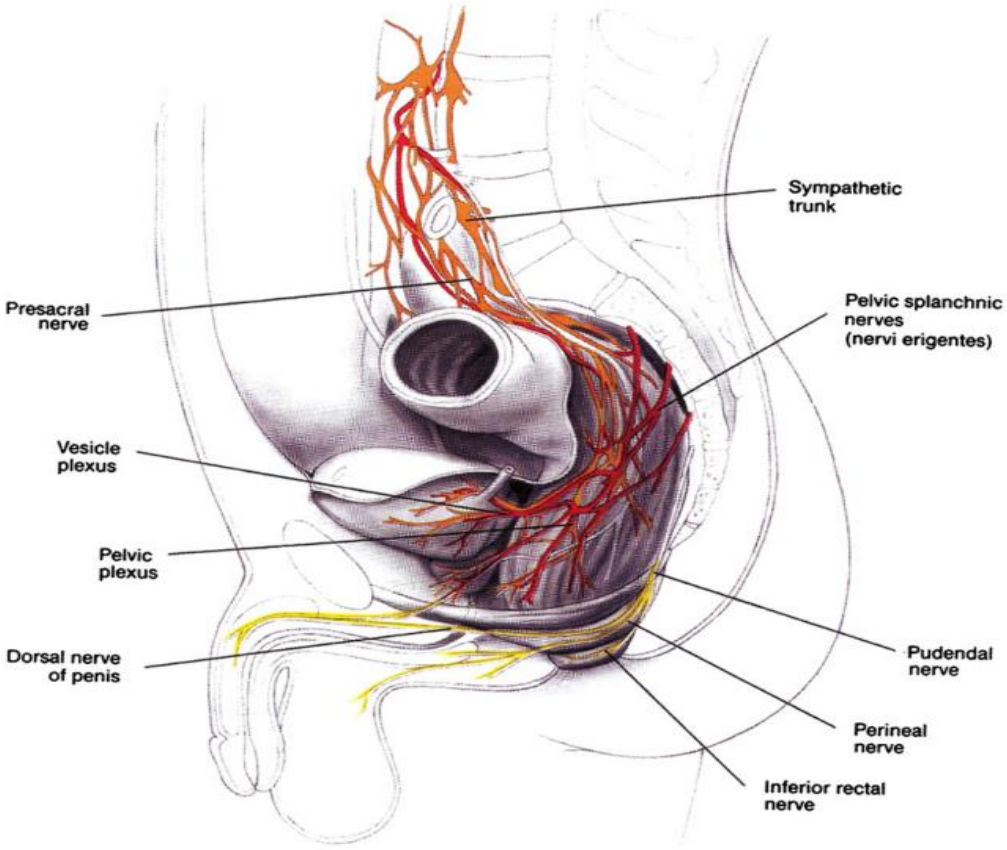


Fig 6. ANORECTAL PARASYMPATHETIC, SYMPATHETIC, AND SOMATIC NERVE SUPPLY

COMMON ANORECTAL DISORDERS

Anorectal disorders can affect individuals of all ages, regardless of gender. They span from a range of conditions such as pruritus ani which may be benign and irritating to potentially life-threatening conditions, such as anorectal cancer. The nonspecific nature of their symptoms can make evaluating patients challenging.[21]

ANAL FISSURE:

An anal fissure is described as a distal, linear tear in the lining of the anal canal, stretching from below the dentate line to the anal verge. [15]

The life time incidence has been estimated to be 11%. [23]

Affects both adults and children irrespective of age groups. They are comparatively less common in age groups above 65 years where an alternative diagnosis has to be ruled out.

Women are more likely to develop anal fissures due to obstetric factors. While the most common location for fissures is the posterior midline, they can also appear in the anterior midline in around 20% of patients.

Fissures that are found away from the midline may indicate an underlying condition such as Crohn's disease, syphilis, or anal cancer. These cases typically necessitate further evaluation, including an examination under anaesthesia and a biopsy to determine a diagnosis[22].

It is categorized as primary or secondary depending on the cause, and as acute or chronic based on the duration.

Classification:

Primary –Not caused by an underlying disease

Secondary –Manifestation of another underlying disease (e.g.Crohn's)

Acute- Present for less than six weeks

Chronic- Duration not less than 6 weeks, transverse internal anal sphincter fibers are visible at the base of anal fissure, characterised by skin tags, hypertrophied anal papillae and indurated edges[15].

Pathogenesis –

The exact pathophysiological mechanism of anal fissures remains unclear, but current theories focus on sphincter tone and blood flow[22].

It is thought that trauma to the anal canal, often caused by passing hard stool, is the initial factor, though constipation isn't always reported. While constipation can contribute to the development of anal fissures by repeatedly irritating the anal canal, it is likely a factor in their persistence[22].

An elevated resting pressure in the internal anal sphincter (IAS) has been identified as another factor contributing to the persistence of anal fissures. Anorectal manometry has consistently revealed that IAS tone, as measured by resting pressure, is higher in patients with fissures compared to controls. However, the maximal voluntary contraction of the external anal sphincter remains similar between the two groups, indicating that the hypertonicity is primarily attributed to the IAS[22].

Additionally, reduced blood flow in the posterior midline of the anal canal, worsened by the increased muscle tone, impedes the healing of fissures[22].

Presentation:

History

Patients frequently experience severe anal pain during and after bowel movements, which can last from minutes to hours. Bleeding, typically seen as bright red blood, is often noticed on toilet paper or streaking the stool's surface. Other symptoms may include per rectal discharge, pruritus and perianal swelling.

Inspection

On local examination of the perianal region, on gentle parting of the buttocks, an external sentinel pile (skin tag) may be visible. Visible defect in the anal verge is noted, commonly in posterior midline.

Palpation

Rectal examination is often difficult to perform due to pain and anal spasm. Adequate lubrication and topical anaesthetic has to be used before digital rectal examination. The defect of a chronic fissure may be palpable and cause intense, reproducible pain.

Proctoscopy

Proctoscopy is not mandatory in patients with fissure in ano and can be diagnosed on inspection basis. However, proctoscopy is performed under anaesthesia to detect associated pathology such as hemorrhoids or secondary complications such as sepsis and fistulae.

TREATMENT

NON OPERATIVE MANAGEMENT:

Breaking the pattern of discomfort, spasm, and hard stool is the goal of treating an acute fissure which includes increasing fluid intake, fibre, Sitz bath and if necessary stools softeners.

Medical therapy

Medical therapy involves using drugs that reduce intracellular calcium in the smooth muscle cells to relax the internal anal sphincter tone.

Glyceryl trinitrate: Nitrates are processed by smooth muscle cells to produce nitric oxide, the primary nonadrenergic, noncholinergic neurotransmitter in the internal anal sphincter (IAS). This release leads to the relaxation of the IAS and increased blood flow to the

anoderm. The typical treatment involves applying 0.2% glyceryl trinitrate topically two or three times daily for 8 weeks[22, 24, 25].

Calcium channel blockers - Calcium channel blockers prevent calcium from entering smooth muscle cells, which reduces intracellular calcium levels and stops muscle contractions. This leads to a decrease in the resting pressure of the internal anal sphincter (IAS). Topical calcium channel blockers, such as diltiazem 2% and nifedipine 0.3%, have been shown to heal fissures to a similar extent as topical nitrates, but with fewer side effects and better patient compliance[22, 24, 25].

Botulinum A toxin injection

Botulinum toxin is derived from the exotoxin produced by bacteria Clostridium botulinum. Botulinum A toxin is a powerful neurotoxin. It causes a chemical denervation of the motor end plates when injected into the IAS, which lowers resting anal pressure and improves perfusion. It is an innovative non operative treatment for persistent anal fissures through reversible chemical sphincterotomy. [22, 24, 25]

Manual dilatation of anus:

Manual dilatation used to be the primary treatment for chronic anal fissures. The goal was to reduce sphincter tone by carefully stretching the internal sphincter. This process involved inserting a varying number of fingers into the anal canal, applying lateral pressure on the sphincter, and holding it for a certain period. However, it is no longer the preferred method due to the higher risk of incontinence caused by tearing the sphincter muscles.[24]

OPERATIVE MANAGEMENT:

Similar to medical management, the aim of surgery was to improve blood supply to anoderm and promote healing of fissures by reducing the resting anal sphincter tone. Surgeries include lateral sphincterotomy, fissurectomy and advancement flap procedures

Lateral internal sphincterotomy

Eisenhammer first described internal sphincterotomy in 1951. Later, the lateral internal sphincterotomy (LIS) was created by Notaras. When nonsurgical therapy fails to resolve anal fissures, this technique is still the preferred surgical treatment. It can be performed without first attempting pharmacologic treatment. The method entails locating the Intersphincteric groove at the 3 o'clock position and splitting the internal anal sphincter away from the mucosa. Complications include incontinence, recurrence.[22, 24]

Fissurectomy - In a fissurectomy, the sentinel pile and/or anal papilla, if present, are removed together with the fibrotic edge of the fissure and the base of the fissure[24].

Anal advancement flap- Anal advancement flaps are useful for repairing anal fissures and only cause minor complications. It has been demonstrated that an island flap, which involves advancing a circumcised section of perianal skin proximally to cover the fissure, is an effective in healing and does not result in incontinence[24].

HEMORRHOIDS:

Enlarged vascular cushions with distal displacement in the anal canal are called hemorrhoids. These anorectal vascular cushions, along with the internal anal sphincter, play a crucial role in maintaining continence by offering support to the soft tissue and ensuring the anal canal remains tightly closed..

The global prevalence of hemorrhoids is estimated to range from 2.9% to 27.9%. [31]

Pathology:

Exact aetiology of hemorrhoids is unknown but increased intraabdominal pressure and its causes is believed to one of the reasons.

The main theories about the pathophysiology of hemorrhoidal disease emphasize the abnormal expansion of veins in the internal hemorrhoidal venous plexus, abnormal stretching of the arteriovenous connections, and the prolapse of hemorrhoidal cushions along with the adjacent connective tissue.

Elevated anal sphincter pressure is also thought to be a possible contributing factor. Although it is a relatively consistent observation, it is still uncertain whether it is a cause or a result of the condition.

Factors like straining, low fibre intake, prolonged sitting on the toilet, constipation, diarrhoea, and conditions such as pregnancy, ascites, and pelvic tumours can all play a role in the development of hemorrhoidal disease. The common factor among these conditions seems to be an increase in intra-abdominal pressure.[22]

Classification:

Hemorrhoids can be classified as

- Primary- The typical anatomical distribution of hemorrhoids corresponds to the branches of the superior rectal vein, which include the left lateral, right anterior, and right posterior regions (3, 7, and 11 o'clock)[15]

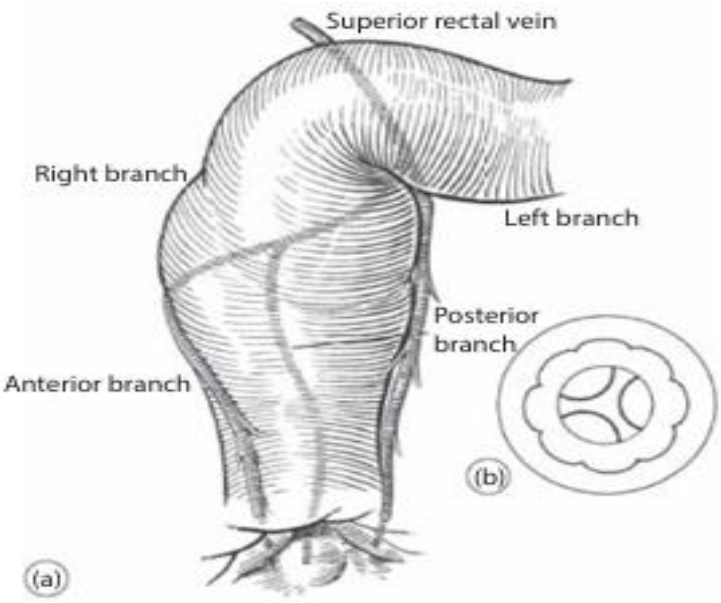


Fig 7. STANDARD ANATOMICAL DISTRIBUTION OF HEMORRHOIDS

- Secondary- whenever the pile mass is noted at a site different from the primary sites

The hemorrhoids, based on their site of dilatation is divided into:

- External hemorrhoids: These are created by the enlarged fibro vascular plexus situated below the dentate line, which is covered by squamous epithelium.
- Internal hemorrhoids: These are larger submucosal fibro vascular tissues that are covered in transitional and columnar epithelium and situated above the dentate line.
- Mixed component hemorrhoids occur above and below the dentate line.

The Golligher classification for hemorrhoids

• Grade I, visualized on anoscopy and may bulge into the lumen but do not prolapse below the dentate line, bleed during defecation

• Grade II, prolapse out of the anal canal with defecation or with straining but reduce spontaneously, bleed and secrete mucus

• Grade III, prolapse requiring manual reduction

• Grade IV, prolapse that cannot be manually reduced[12, 30]

History:

Most common presenting complaint is bleeding per rectum – bright red, painless and occurring at the end of defecation. In addition, some patients complain of mass per rectum which may be reducible spontaneously or manually. In case of external hemorrhoids swelling in noted in anal region. Pain is seldom present unless there is thrombosed hemorrhoids or associated anal fissure or perianal abscess.

Inspection:

Examination of perianal region is done to look for prolapsed or thrombosed haemorrhoids, rule out associated conditions

Palpation:

Rectal examination is avoided in case of painful thrombosed haemorrhoids. Hemorrhoids are not palpable, however may become palpable when thrombosed or when fibrosis is achieved post various surgical procedures.

Proctoscopy:

Hemorrhoids are diagnosed by proctoscopy which reveals reddish blue mucosa with piles bulging into the proctoscope.

TREATMENT:

Conservative treatment

Lifestyle modifications involving increasing dietary fibre intake has proven to improve symptoms by promoting normal bowel movements.

Other lifestyle changes, such as maintaining proper anal hygiene, increasing fluid intake, taking sitz baths, relieving constipation, and avoiding straining, may help alleviate symptoms but do not have a significant impact on the progression of the disease.

Micronized purified Flavonoid Fraction (MPFF) is suggested for symptomatic relief of grade 1 and 2 patients. They are used as an oral medication and it mainly reduces the inflammatory process and increases venous tone, which thereby facilitates lymphatic drainage and protects the hemorrhoidal plexus.

Outpatient treatments

Sclerotherapy, bipolar diathermy, infrared coagulation, rubber-band ligation cryotherapy and hemorrhoidal artery ligation are day care procedures which are performed without anaesthesia and patient can go home the same day.

SURGERY:

Hemorrhoidectomy - involves the surgical removal of a hemorrhoidal mass and is performed in two forms:

- **Milligan-Morgan hemorrhoidectomy**: The hemorrhoid is detached from the anal sphincter, its blood vessels are ligated, and the wound is left open to heal by secondary intention, with skin and mucosal bridges.
- **Ferguson hemorrhoidectomy**: The hemorrhoid is exposed using an anoscope, excised and ligated, and the wound is then closed. [22]

MINIMALLY INVASIVE TECHNIQUES

Stapled hemorrhoidopexy - This procedure uses a circular stapler to circumferentially resect the mucosa and submucosa above the hemorrhoids. The defect is then stapled shut with a single

staple gun shot. The hemorrhoids are placed back in their natural anatomical location rather than being removed.[22]

LASER hemorrhoidoplasty: based on the principle so photo ablation, photocoagulation and photovaporisation, laser is introduced into hemorrhoidal mass, fibrosis takes place, securing the anal cushions back to their normal position and addressing the issue of prolapse. [31]

FISTULA IN ANO

A fistula-in-ano refers to a tract lined by granulation tissue that connects an external opening in the perianal skin to an internal opening in the rectum or anal canal.

Most commonly seen in age groups between 20-40 years.

Etiological factors include prior perianal abscess, Regional enterocolitis / Crohn's Disease, TB of the anal region, Ulcerative colitis, anal canal and rectum malignancy, Lymphogranuloma venerum, Actinomycosis involving the anorectal region.

Pathogenesis:

There are two openings in a fistula: one on the outside of the skin and one inside the rectum or anal canal. The inside of the fistulous tract is lined with unhealthy tissue over fibrous tissue. Faecal particles and microbes from the anal canal contribute to the fistula's chronic nature. The area's high fat content and poor blood flow also worsen this condition. Although the internal opening is usually one, a fistula may have multiple external openings.

Multiple openings are often seen in conditions like inflammatory bowel disease, tuberculosis, or sometimes LGV infections.

A fistula often develops after an anorectal abscess, which forms in the anal glands and crypts. Due to the anatomy of the anal canal, abscesses rarely resolve on their own and can persist

with insufficient drainage. Chronic infections are the main cause of persistent fistulas. In some cases, repeated infections of the anal glands can lead to abscesses, and improper drainage may result in a fistula connecting the infected gland to the skin, causing ongoing discharge.

Other factors that contribute to fistula formation include weak infection resistance in the fatty tissue around the anus and repeated infections from the external anal margin. The anal sphincters may also block the drainage of abscesses

Classification:

Park's classification: Intersphincteric; transphincteric; supralevator; extrasphincteric

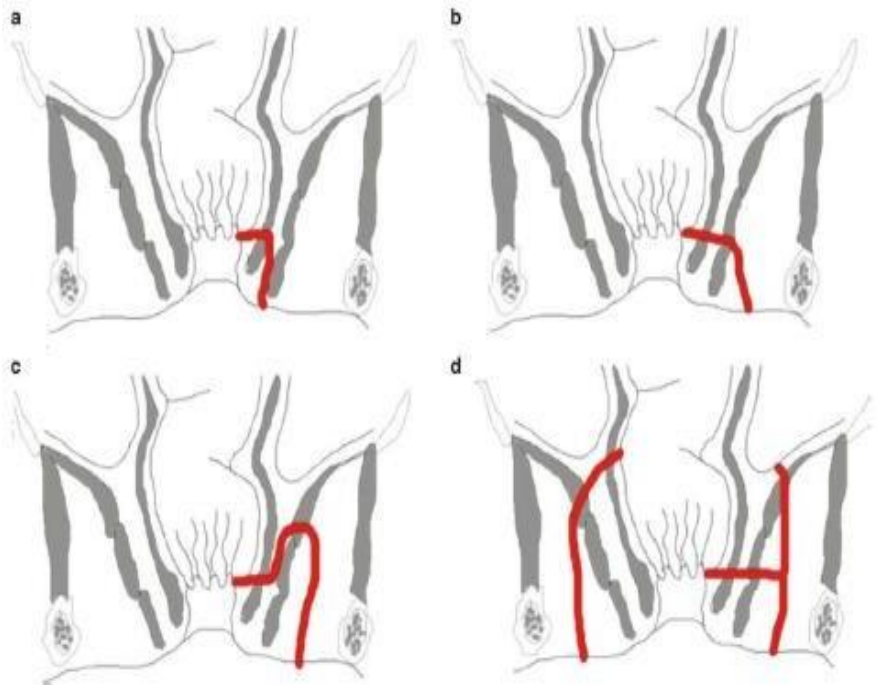


Fig 8. CLASSIFICATION OF FISTULA IN ANO ACCORDING TO PARK ET AL.

a.intersphincteric; b. transphincteric; c. supralevator; d. extrasphincteric

History:

Patient complains of swelling in perianal region with associated blood tinged or purulent discharge. They may also complain of pain and itching in perianal region. Prior history spontaneously ruptured perianal abscess or previous surgery for perianal abscess may be present.

Inspection:

On examination of perianal region, one can make out external opening which is seen as 1mm-2mm size hemispherical swelling. Occasionally frank pus or serous discharge from the external opening may be noted.

In chronic condition, there may be granulation tissue around the external opening with serosanguinous discharge.

One should also look for scars in perianal region which might be due to spontaneous rupture of the abscess or due to surgical drainage and left open to be healed by secondary intention.

Palpation:

Palpation helps us to confirm the external opening of fistula, it is usually felt as firm swelling which may extrude pus on pressing surrounding perianal region.

Palpation of the anal canal internal opening is identified as button like consistency which is usually felt in posterior midline in case of posterior fistulas and are felt along the line of external opening in anterior fistulas in accordance with the Goodsall's rule.

Proctoscopy:

It allows for better visualisation parts of internal opening of fistula which is seen as button like induration. Sometimes it can reveal discharge of pus on slight pressure. It also helps us to differentiate high anal fistula from low anal fistula depending on the site of internal opening.

TREATMENT:

Surgery is mainstay treatment for anal fistulas. Use of antibiotics, analgesics and anal hygiene may provide temporary relief but it does not treat the underlying disease.

FISTULOTOMY –procedure refers to cutting open the fistula tract from external to internal opening

FISTULECTOMY – refers to excision of fistula tract using cautery.

USE OF SETON - When a tract is of high anal type with extension of the tract above the anorectal ring it is not possible excise or lay open whole of the tract as it will cause division of the anorectal ring and can result in incontinence. In such condition after partial excision of the tract a silk thread can be passed from the external opening and is brought out via the internal opening and tied together tightly which brings about controlled division of the sphincters and it gives sufficient time for healing of the sphincters by fibrosis which will not affect the continence.

LIGATION OF INTERSPHINCTERIC FSTULA TRACT (LIFT) – it's a sphincter preserving procedure, internal opening is divided at the level of the intersphincteric plane, sphincter complex is preserved and the external part of the track is excised and left open.

MUCOSAL ADVANCEMENT FLAPS – refers to closure of internal opening with broad-based, well-vascularized flap of anorectal mucosa after excision of fistula tract. It preserves the normal architecture and function of sphincter.

VIDEO-ASSISTED ANAL FISTULA TREATMENT (VAAFT) involves introduction of a rigid fistuloscope into tract through the outside opening. The scope is passed into accessible tracks to allow lavage, curettage, cautery or the introduction of setons.

FISTULA TRACT LASER CLOSURE (FILAC) uses radial emitting laser to obliterate the luminal aspect of the fistula to a known depth, throughout its length.[32, 37]

CLINICAL PICTURE OF ANORECTAL DISEASE

SYMPTOMS:

Anorectal conditions can affect any age group. Most commonly inflammatory conditions re seen in younger age groups whereas incidence of malignancies is higher in older age.

- Blood in stools – bright red blood in stools without pain and seen in the last stage of defecation
- Prolapse –mass per rectum which may reduce spontaneously or has to be reduced manually indicating hemorrhoids.
- Pruritus and mucus discharge- in cases of prolonged prolapse, there will be mucus discharge, perianal itching and skin excoriation
- Proctalgia – commonly seen in fissure in ano and perianal abscess; Severe acute pain may be noted in thrombosis of prolapsed pile

EXAMINATION OF ANAL CANAL:

Management of anorectal disease begins with complete general physical examination which includes the Digital rectal examination and examination of the surrounding perianal structures.[38]

Indications:

- Any patients presenting with complaints of anal or perianal pain, bleeding PR, pain abdomen, mass per rectum, constipation

Contraindications

- There are no contraindications for Digital Rectal examination except if patient is unwilling. Relative contraincations include recent anal surgery, anal strictures, severe anal pain that mandates examination under anesthesia.

Requirements:

Pair of gloves, lubricant with local anesthetic and Kelly's proctoscope and a dedicated light source

Preparation of the patient:

Many patient will have anticipatory anxiety and embarrassment prior to procedure. Therefore they have to be explained in detail about the procedure and all queries should be addressed so that the patient relaxes and detailed examination is performed.

Position:

Most common position is Sims position where patient is placed in left lateral decubitus position with the buttocks resting over the edge of the examination table[27].

Other positions include jack-knife position, knee–elbow positions or lithotomy position with legs in stirrups.

Fig 9. LEFT LATERAL SIMS POSITION

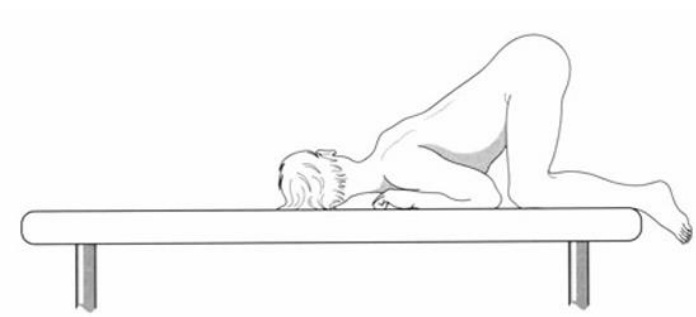


Fig 10. THE KNEE ELBOW POSITION

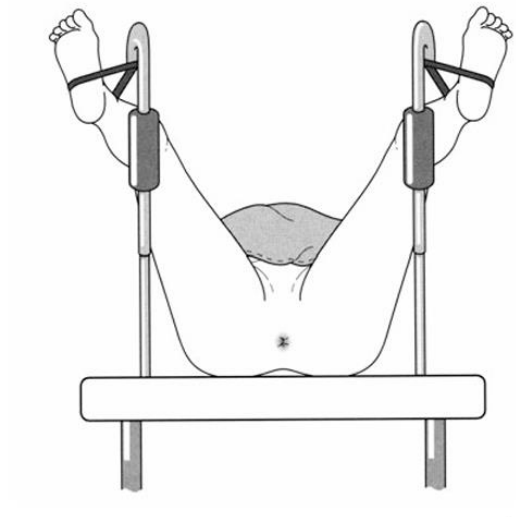


Fig 11. LITHOTOMY POSITION

INSPECTION

The buttocks are separated gently and anus and perianal region is inspected. We have to look for skin lesions such as lichen planus, psoriasis whether they are limited to perianal region or in other parts of body and genital region (e.g., warts, lichen sclerosus, candidiasis, and herpes simplex virus (HSV) vesicles).

The inspection also includes looking for signs of anal discharge, identify position of anus at rest and during straining (which may reveal hemorrhoidal prolapse or even rectal prolapse) and assessing whether the anus is open or closed.

Pain when separating the buttocks, possibly accompanied by a sentinel tag, and may suggest an underlying anal fissure.

DIGITAL RECTAL EXAMINATION:

After adequate lubrication, index finger is introduced into anal canal and palpation of the soft tissue within anal canal is done to look for tenderness, induration and any ulcero proliferative growth.

Initially index finger is introduced in posterior aspect of anal canal and at apex, we feel for the puborectalis sling posteriorly; any induration in supralevator site is bony hard. Anteriorly we can palpate for the prostate gland and median sulcus in males and in females, we can feel the uterine cervix. Length of anal sphincter, sphincter tone at rest and on contraction has to be assessed. Any extra luminal, intra-anal and intrarectal mass to be palpated and work up has to be done.

Fecal staining, presence of blood stain, mucus and pus should be noted after withdrawal of index finger[38].

PROCTOSCOPY

This procedure refers to visualization of the anal canal after inserting a well lubricated proctoscope, a short, illuminated tube[27].

Most commonly used proctoscope is Kelly's proctoscope. Currently disposable proctoscope are becoming popular. It is about 10 cm in length and 20-30mm wide bore.

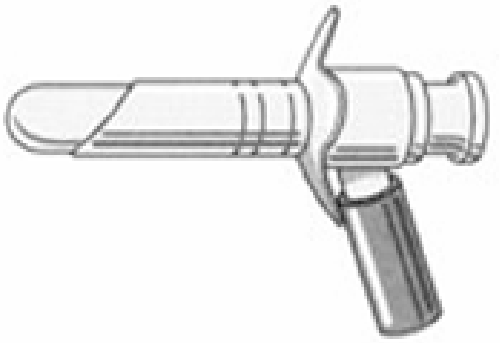


Fig 12. MODIFIED KELLY'S PRCOTOSCOPE

Procedure: Following digital rectal examination with patient in left lateral Sims position, the proctoscope is inserted into the anal canal directed the umbilicus of patient. After removing the obturator, inner surface of anal canal is inspected along the whole length.

We have to identify the dentate line (refers to junction between squamous epithelium and columnar epithelium), observe the normal mucosa and look for any deviation from normal.

- Fissure-in-ano appears as linear ulcer at the anal verge
- Fistula-in-ano – purulent discharge is noted over internal opening
- A hemorrhoid is vascular bulge covered with smooth mucosa
- Proctitis or other inflammatory changes- edema, congestion or erosions, ulcerations
- Neoplasms

DUAL LENS ENDO PROCTOSCOPY:

Dual lens endoproctoscopy is a type of video proctoscopy which utilizes a straightforward digital setup that includes a flexible long digital camera within a transparent proctoscope.

Fig 13. DUAL LENS ENDO PROCTOSCOPE WITH TRANSPARENT PROCTOSCOPE

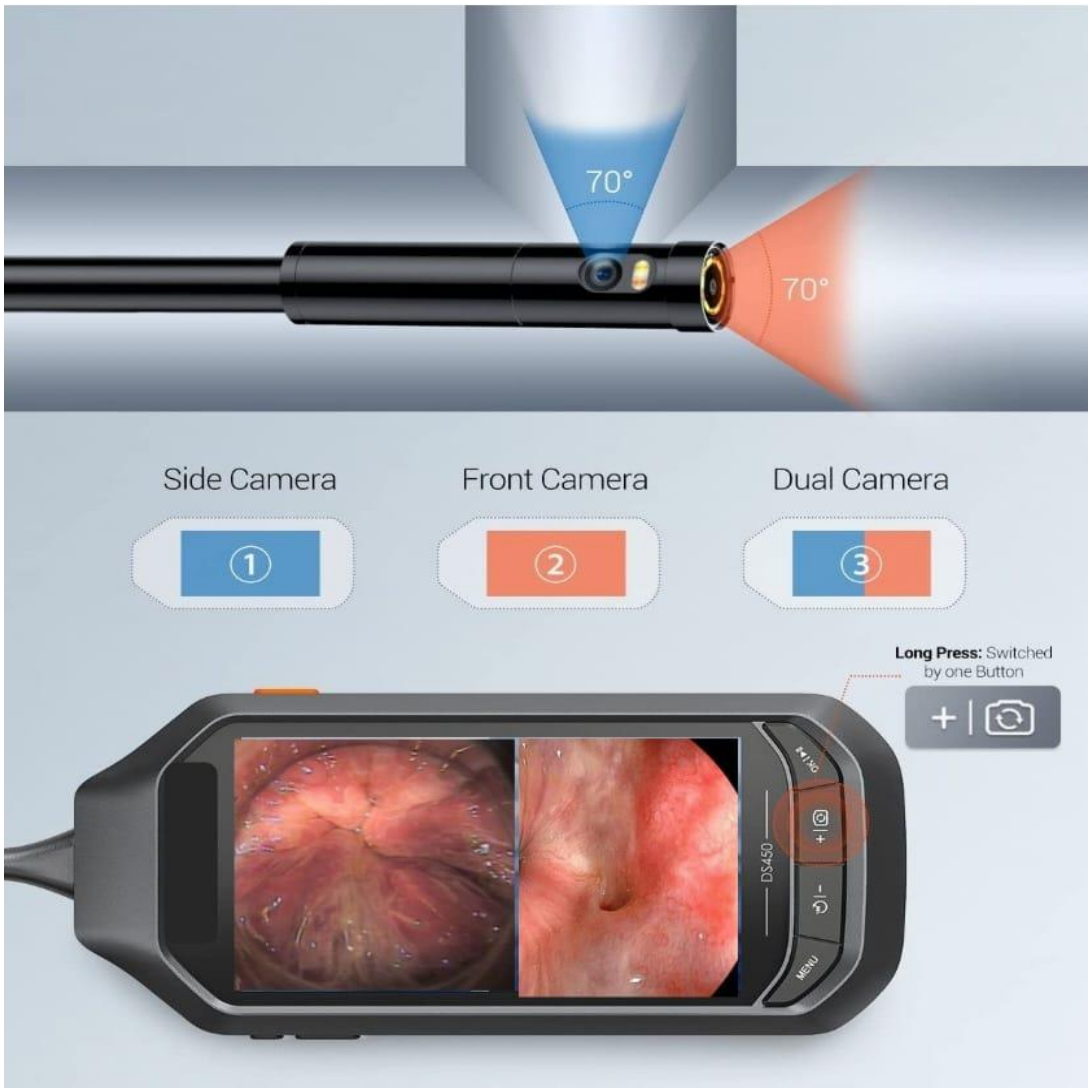


Fig 14. DUAL LENS ENDO PROCTOSCOPE WITH TWO CAMERAS

This system features two cameras: one at the tip for direct visualization of anal cavity and another positioned at a 90-degree angle, allowing for comprehensive examination of mucosal surfaces, fistula openings, polyps, and fissures.

As per routine examination of anal canal, digital rectal examination followed by proctoscopy is performed with transparent disposable proctoscope.

Through the transparent proctoscope, Dual Lens Endoscope is inserted and videos and images are captured of anal mucosa and anorectal pathologies.

The camera at the tip allows for direct visualisation of anorectal pathologies such as bluish-red hemorrhoidal bulges, polyps.

The side viewing camera captures images of mucosal surfaces, visualise the dentate line and shift of columnar epithelium to squamous epithelium, identify internal opening of fistula, fissures, and polyps.

Lead time and operational flexibility:

The video recording ability of the device allows for evaluation of anorectal pathology more quickly and without prior preparation thus aiding in early and accurate diagnosis. It also prevents repeated examination using proctoscope thus avoiding inconvenience to patient.

Data generation, Documentation, and Reporting:

All the data generated in the form of images and videos of each individual is recorded and stored in a database. This data is individually studied as well as compared with other patients and reporting was provided using the same database. These reports are made available for patients and utilised for counselling of patients in regards to disease pathology, progress and varied treatment protocols available. It also helps in detection of recurrence of disease process in same individuals and helps identify patterns and trends of disease process. These images help in confirmation of diagnoses through HPR annotation.

Annotation of images for AI (artificial intelligence):

Images and videos generated have been installed in to machine learning for AI output. We will be needing still more images for a stable AI interpretation.

MATERIALS AND METHOD

It is a prospective observational study done on patients who presented with anorectal problems to Department of Surgery, BLDE (DEEMED TO BE UNIVERSITY) SHRI B.M. PATILMEDICAL COLLEGE, HOSPITAL AND RESEARCH CENTRE, VIJAYAPURA– 586103, KARNATAKA.

Duration of the study- April 2023- January 2025

INCLUSION CRITERIA:

- Patients with Anorectal disease aged above 10 years.

EXCLUSION CRITERIA:

- Patients with active anal bleeding.
- Patient with loose stools.

METHODS OF DATA COLLECTION

- Patients who presented to Surgery OPD with anorectal complaints were identified, detailed history was taken and patient was explained about the procedure in detail.
- Written informed consent was taken from all the patients.
- Thorough clinical examination was done and dual lens endoproctoscopy was done.
- During DLP the patient was placed in left lateral position with the buttocks at the edge of the table. A scope was inserted, and examination done.
- The anorectal disease images and videos are captured, documented, and stored as

repository.

- Reports were prepared and shared with the patient and further counselling of the patient was done using the digital images.
- If patient underwent surgery, then the images were shared with the pathologist for HPR study.
- Proforma was used to collect all the relevant data from the patient and the relevant images and report was entered into the same.

SAMPLE SIZE

Total Sample Size- 384

- Given the prevalence of anorectal pathologies is 77.06 % and that of hemorrhoids is 48.65%[8], the study would require a sample size of 384 patients with 95% level of confidence and a precision of 0.8
- The sample size computed using the following formula

Sample size (n) = $(Z^2 * p*(1-p)) / d^2$

Where,

z is the z score= 1.96

d is the margin of error= 0.05

n is the population size

p is the population proportion = 0.4865

Statistical Analysis

- The data obtained will be entered in a Microsoft Excel sheet, and statistical analysis will be performed using statistical package for the social sciences (SPSS) (Version 20).
- Results will be presented as Mean (Median) ±SD, counts and percentages and diagrams.
- If $p<0.05$ will be considered statistically significant. All statistics are performed two-tailed.

PROCEDURE:

- All patients who presented with anal complaints were included in study and history was taken in detail.
- Following that they were explained about the procedure and informed consent was taken.
- Patient was made to lie in left lateral Sims position with buttocks overhanging the edge of table.
- Initially inspection of perianal region and digital rectal examination was performed.
- Transparent proctoscope was inserted and initial proctoscopy was performed
- Through the transparent proctoscope, Dual Lens Endoscope was inserted and videos and images were captured of anal mucosa and anorectal pathologies.

Fig 15. PROCTOSCOPY WITH TRANSPARENT PROCTOSCOPE

Fig 16a & 16b. DUAL LENS ENDOSCOPE IS INSERTED AND IMAGES ARE CAPTURED

Name: BLDE (DU) SHRI B M PATIL MEDICAL COLLEGE HOSPITAL AND RESEARCH CENTRE

Record 1

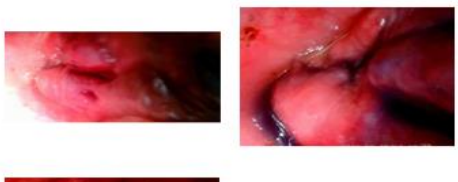
Reg number	343846
Name of the patient	SANTOSH NAIK
AGE	37
SEX	Male
COMPLAINTS	Pus discharge from perianal region since 2 months
PROCEDURE	Proctoscopy Under LA : 2% Xylocane jelly
IMAGES	 
SECOND CAMERA	
DIAGNOSIS	FISTULA IN ANO
ADVICE	Operative- FILAC

Fig 17. REPORTING

PHOTOGRAPHS OF ANORECTAL PATHOLOGIES:

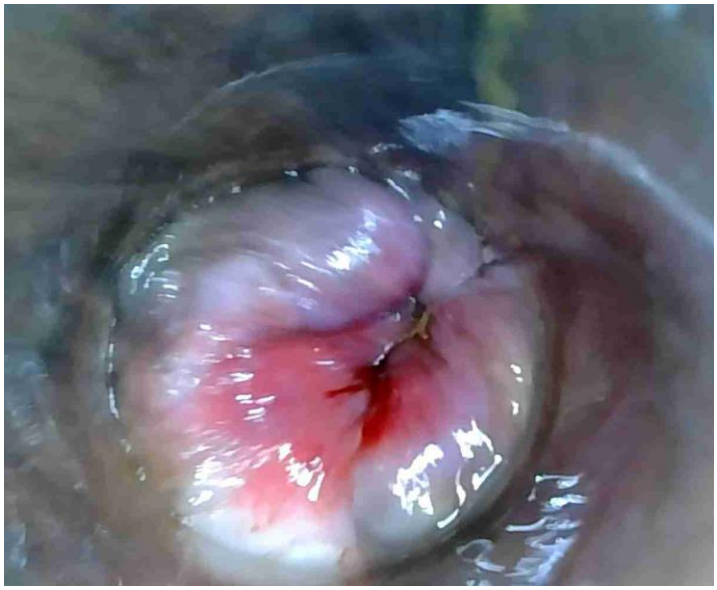


Fig 18. FISSURE IN ANO

Fig 19. FISSURE IN ANO WITH SENTINEL PILE

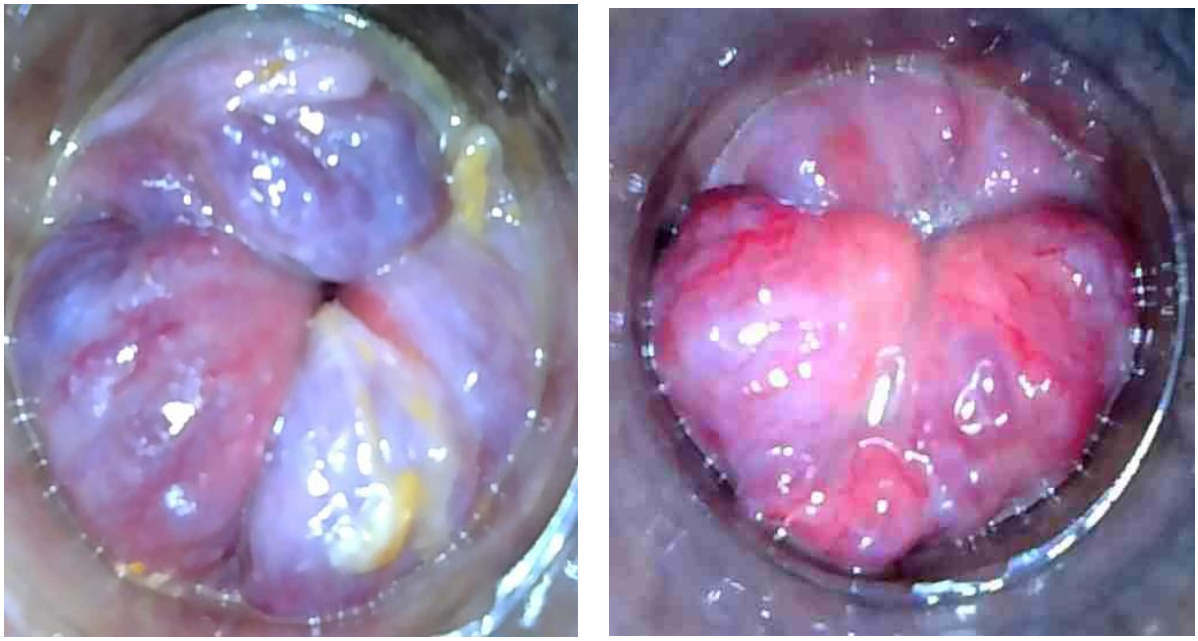


Fig 20a and 20b. INTERNAL HEMORRHOIDS

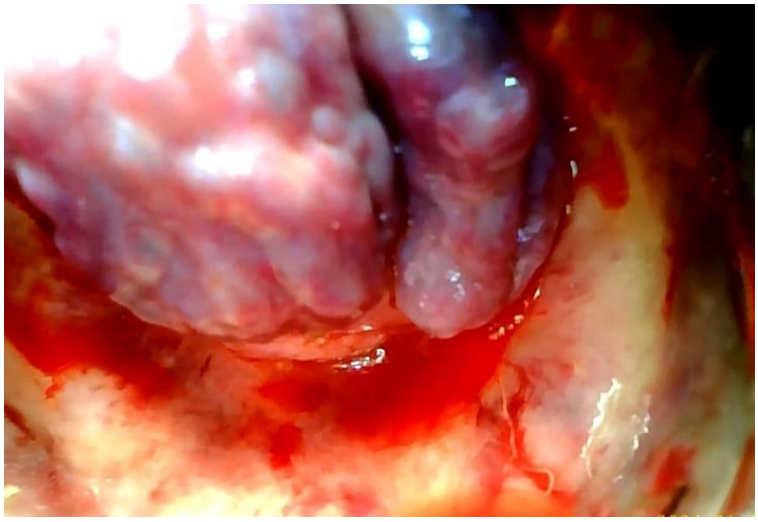


Fig 21. SIDE VIEW OF HEMORRHOIDS

Fig 22. FISTULA IN ANO- INTERNAL OPENING

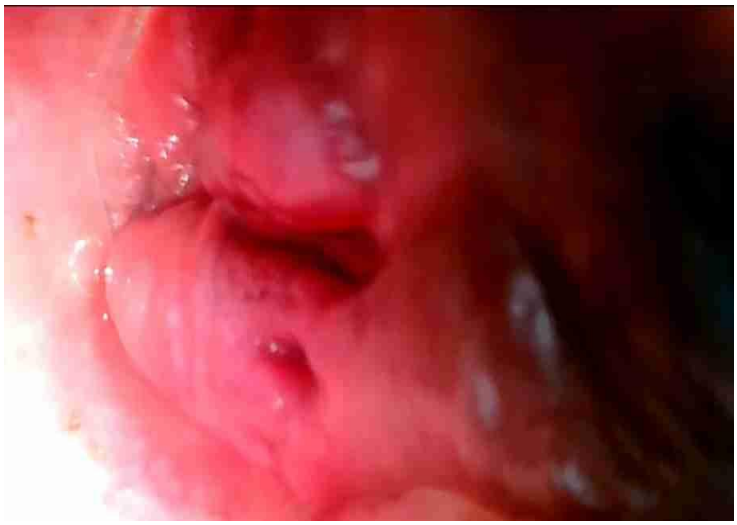


Fig 23. SIDE VIEW OF FISTULA IN ANO- INTERNAL OPENING

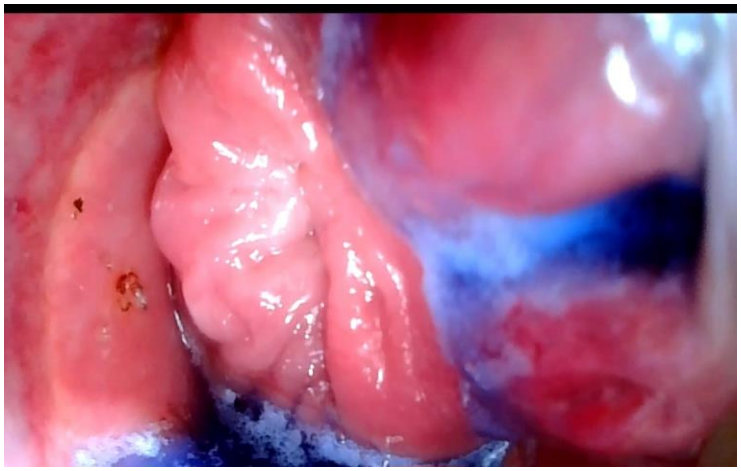


Fig 24. SIDE VIEW OF FISTULA IN ANO- INTERNAL OPENING IDENTIFED WITH METHYLENE BLUE DYE

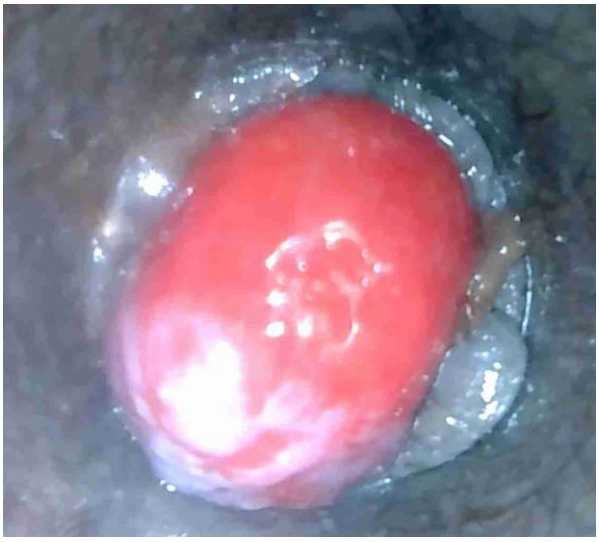


Fig 25a and 25b. ANAL POLYP

OBSERVATIONS AND RESULTS

The present study was conducted in the study the department of General surgery at Shri B.M. Patil Medical College, hospital and research centre, Vijayapura from April 2023- January 2025 to study the role of dual lens endo proctoscopy in anorectal disease. Total of 384 patients were included in the study.

Following were the results of the study:

Table 1: Distribution of patients according to age

Age (in years)	Frequency	Percentage
15-20	11	2.9%
21-30	53	13.8%
31-40	106	27.6%
41-50	92	24%
51-60	60	15.6%
61-70	43	11.2%
71-80	17	4.4%
81-90	2	0.5%
Total	**384**	**100%**

Graph 1: Distribution of patients according to age

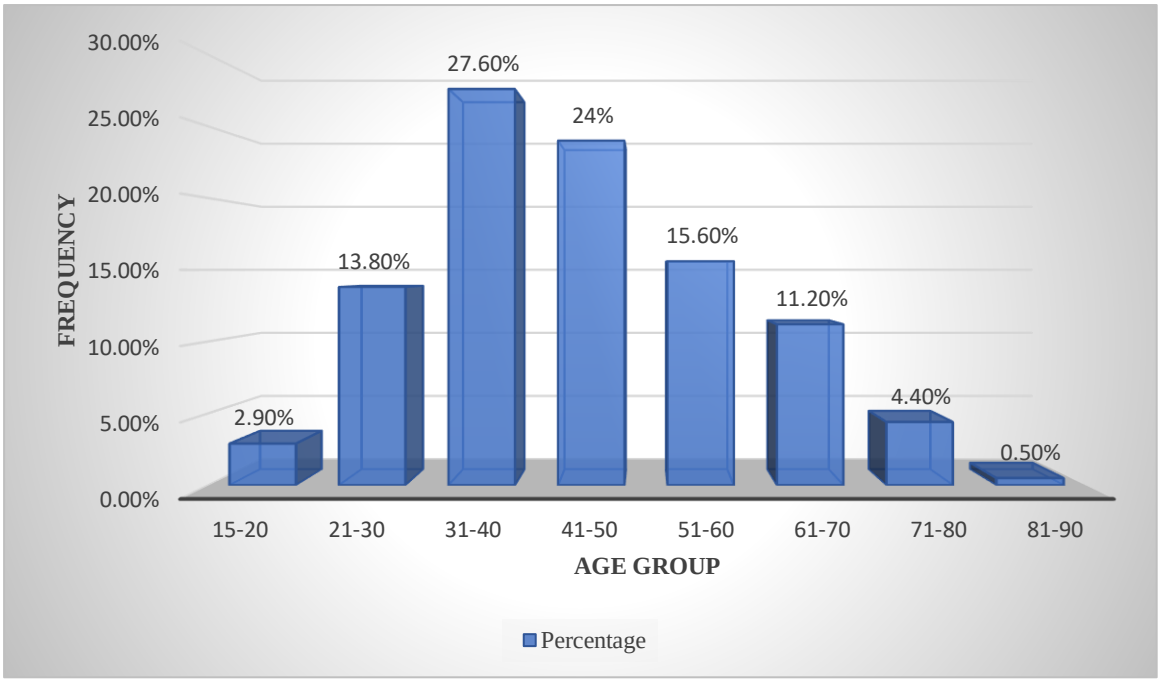


Table 1 and graph 1 explores the age distribution of patients in the study, revealing that the majority of patients were between 31-50 years old, with 106 patients (27.6%) in the 31-40 age group and 92 patients (24%) in the 41-50 age group, indicating that middle-aged individuals were most frequently represented in this anorectal disease study.

Table 2: Distribution of patients according to gender

Gender	Frequency	Percentage
Female	110	28.6%
Male	274	71.4%
Total	**384**	**100%**

Pie chart 1: Distribution of patients according to gender

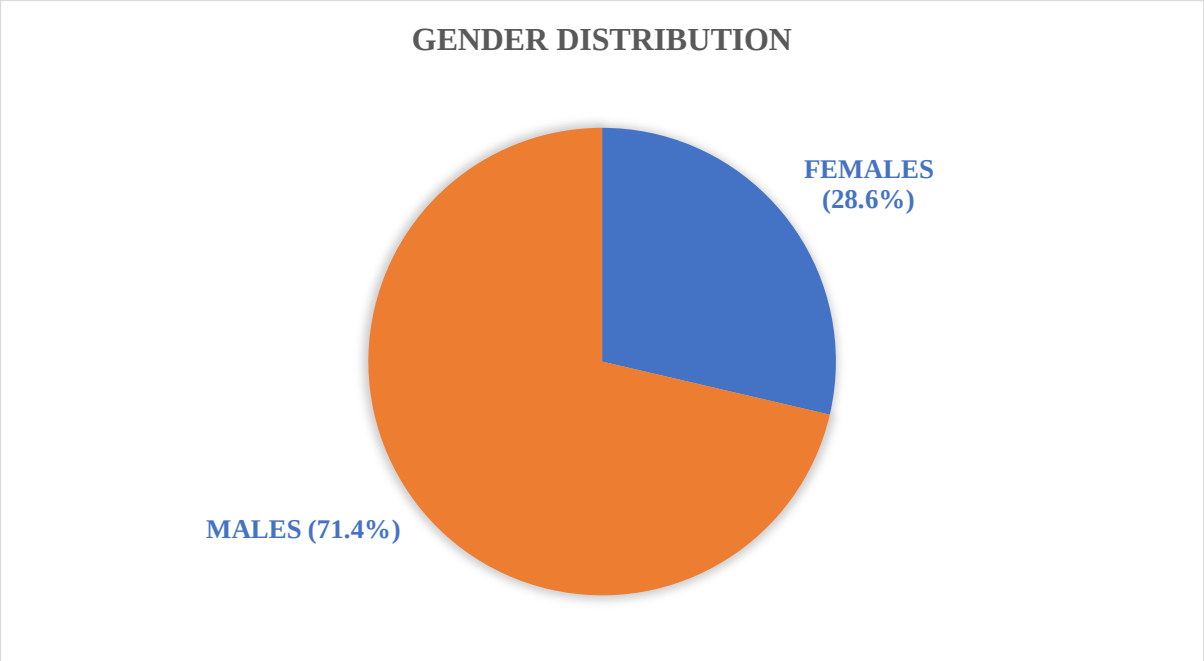


Table 2 and pie chart 1 demonstrates a significant gender disparity in the patient population, with males comprising 71.4% (274 patients) of the study group, while females represented 28.6% (110 patients), suggesting a markedly higher incidence of anorectal diseases among male patients.

Table 3: Distribution of patients according to diagnosis

Diagnosis	Frequency	Percentage
Normal	62	16.1%
Fissure in Ano	78	20.3%
Grade 1 hemorrhoids	26	6.8%
Grade 2 hemorrhoids	76	19.8%
Grade 3 hemorrhoids	57	14.8%
Fistula in Ano	60	15.6%
Perianal sinus	5	1.3%
Anal polyp	6	1.6%
Neoplasm	6	1.6%
Others	8	2.1%
Total	**384**	**100%**

Pie chart 2: Distribution of patients according to diagnosis

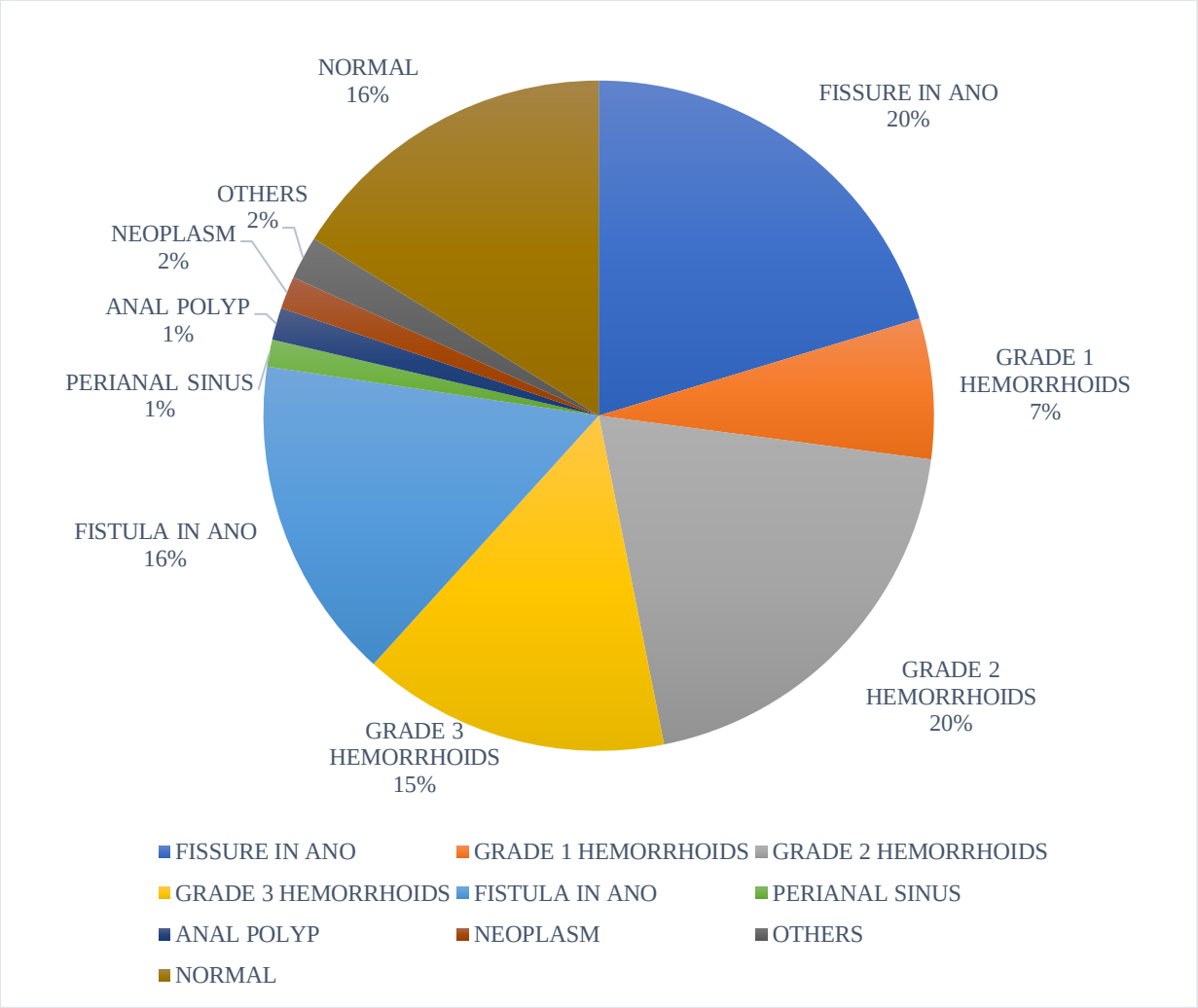


Table 3 and pie chart 2 presents the distribution of diagnoses, showing that Fissure in Ano (20.3%) was the most frequent diagnosis followed by Grade 2 hemorrhoids (19.8%), and Fistula in Ano (15.6%) whereas 16.1% of patients found to have normal conditions upon examination.

Table 4: Association of gender with diagnosis

Diagnosis	Gender		p-value
	Female	Male	
Normal	23 (20.9%)	39 (14.2%)	**0.008**
Fissure in Ano	29 (26.4%)	49 (17.9%)	
Grade 1 hemorrhoids	11 (10%)	15 (5.5%)	
Grade 2 hemorrhoids	17 (15.5%)	59 (21.5%)	
Grade 3 hemorrhoids	14 (12.7%)	43 (15.7%)	
Fistula in Ano	11 (10%)	49 (17.9%)	
Perianal sinus	0	5 (1.8%)	
Anal polyp	1(0.9%)	5(1.8%)	
Neoplasm	4 (3.6%)	2 (0.7%)	
Others	0	8 (2.9%)	
Total	**110 (100%)**	**274 (100%)**	

Graph 2: Association of gender with diagnosis

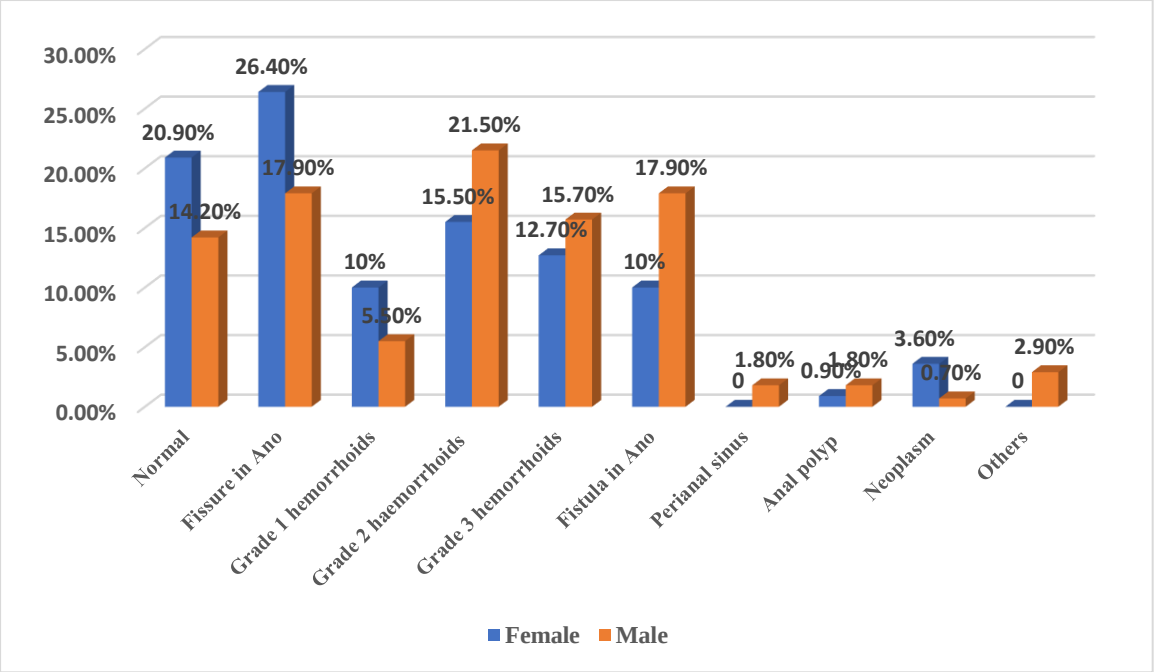


Table 4 and graph 2 examines the association between gender and diagnosis, showing statistically significant differences (p-value 0.008) in the distribution of various anorectal conditions across male and female patients, with notable variations in the prevalence of specific diagnoses between genders.

Table 5: Distribution of patients according to management

Management	Frequency	Percentage
Conservative	194	50.5%
Operative	190	49.5%
Total	**384**	**100%**

Pie chart 3: Distribution of patients according to management

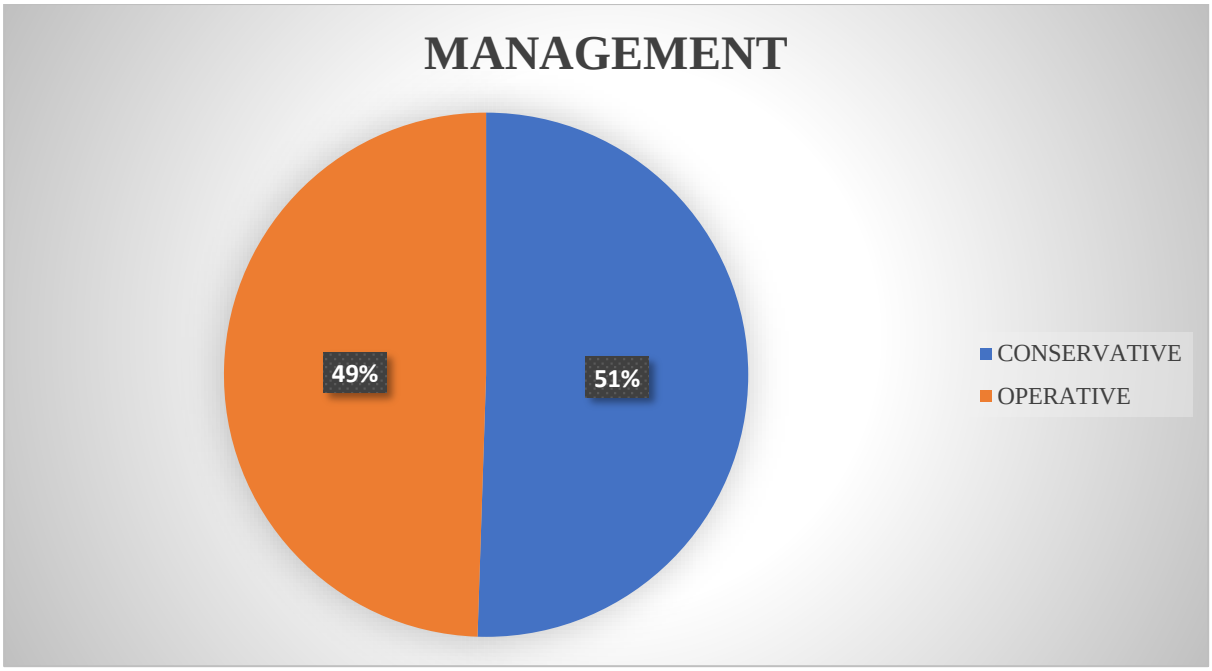


Table 5 and pie chart 3 illustrates the management approach, with a nearly equal split between conservative (50.5%) and operative (49.5%) treatments, indicating a balanced approach to managing anorectal conditions in this study.

Table 6: Association of management with diagnosis

Diagnosis	Management		p-value
	Conservative	Operative	
Normal	62 (32%)	0	**<0.001**
Fissure in Ano	60 (30.9%)	18 (9.5%)	
Grade 1 hemorrhoids	26 (13.4%)	0	
Grade 2 hemorrhoids	37 (19.1%)	39 (20.5%)	
Grade 3 hemorrhoids	3 (1.5%)	54 (28.4%)	
Fistula in ano	2(1%)	58(30.5%)	
Perianal sinus	0	5 (2.6%)	
Anal polyp	0	6 (3.2%)	
Neoplasm	0	6 (3.2%)	
Others	4 (2.1%)	4 (2.1%)	
Total	**194 (100%)**	**190 (100%)**	

Graph 3: Association of management with diagnosis

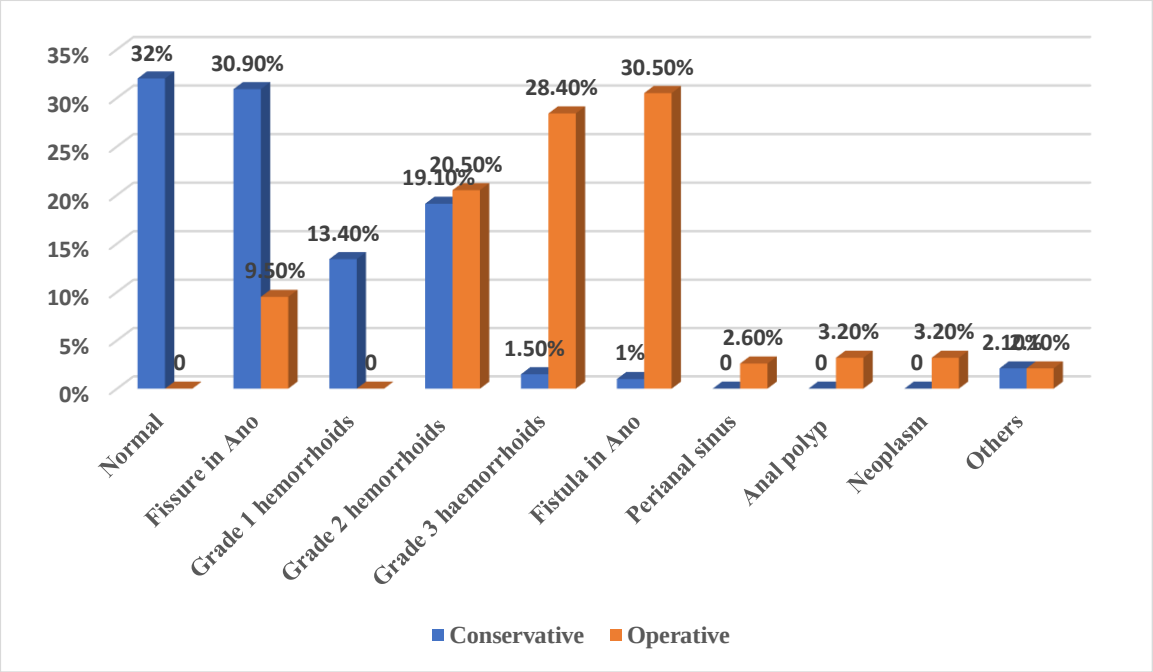


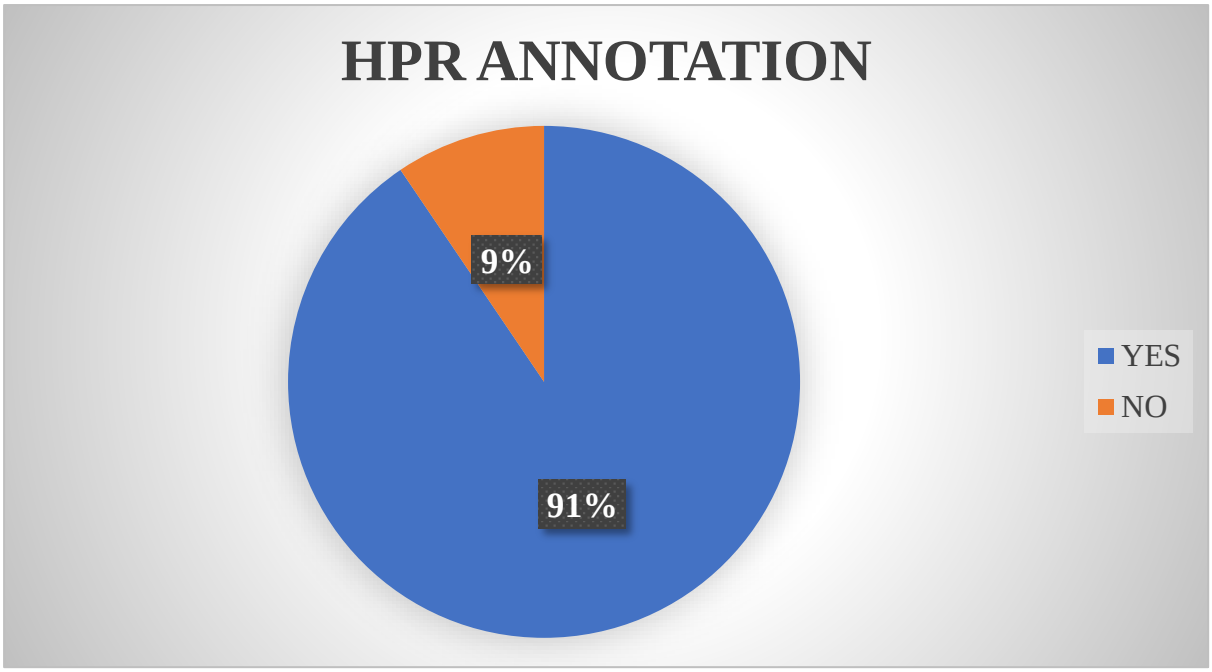
Table 6 and graph 3 explores the association between management and diagnosis, revealing statistically significant relationships (p-value <0.001) between specific diagnoses and treatment approaches, such as operative management for conditions like anal polyps, fistula in ano, and grade 3 hemorrhoids.

Table 7: Lead time

Lead time (seconds)	
Mean	25.8

Table 7 provides information about the lead time, with a mean (average) time taken for scan is 25.8 seconds, suggesting that the entire procedure takes minimal duration.

Pie chart 4: Histopathological annotation



Pie chart 4 showing utilization of DLP images in annotations of histopathological reporting. Of the 190 patients who underwent operative management, in 91% of cases, DLP images helped pathologist in annotations of histopathological reporting.

Patient Counselling: All 384 patients who enrolled into the study were successfully counselled using the DLP images and provided education regarding the disease process, management strategies and preventive measure.

Documentation and data generation: All the 384 patients who were enrolled in our study were documented, and the data repository was stored in our hospital information management system (HIMS) and AI server. These data were utilized for follow-up and to identify recurrence cases.

With the images and recorded data from the DLP device and reporting mobile software, the reports were generated immediately and soft copy of the reports was communicated to the patient which helped in counselling for the patient.

DISCUSSION:

Anorectal diseases represent a significant burden in surgical practice worldwide, affecting individuals across all age groups with varying symptom presentations and clinical manifestations. The diagnosis and management of these conditions have evolved substantially over the decades, transitioning from conventional digital examination and rigid proctoscopy to more advanced visualization technologies. Dual lens endo proctoscopy represents one such technological advancement that has enhanced the diagnostic capabilities in the evaluation of anorectal pathologies. This technique combines the benefits of conventional proctoscopy with enhanced visualization through dual lens technology, providing improved illumination, magnification, and a broader field of view of the anorectal canal.

The present study was conducted to evaluate the role of dual lens endo proctoscopy in the diagnosis and management of anorectal diseases at Shri B.M. Patil Medical College, Hospital and Research Centre, Vijayapura, over a period spanning from April 2023 to January 2025. The study included 384 patients presenting with various anorectal symptoms, who underwent comprehensive evaluation using dual lens endo proctoscopy. This discussion aims to interpret the study findings in the context of existing literature, highlighting the implications for clinical practice, the advantages of dual lens endo proctoscopy, and areas for future research.

Demographic Characteristics

Age Distribution

The present study demonstrated a predominance of anorectal diseases in the middle age groups, with the highest proportion of patients (27.6%) in the 31-40 years age group, followed by 24% in the 41-50 years age group. This finding is consistent with several published studies on the epidemiology of anorectal diseases. Lohsiriwat reported in a comprehensive review that

haemorrhoids, fissures, and other common anorectal conditions typically affect adults in their productive years, with peak incidence between 30-50 years of age, which aligns closely with our observations.[39] Similarly, Riss et al. documented that the prevalence of haemorrhoidal disease increases with age, reaching a peak in the fourth and fifth decades of life.[40]

The age distribution pattern observed in our study can be attributed to various factors that predispose middle-aged individuals to anorectal pathologies. These include dietary habits, occupation-related prolonged sitting, reduced physical activity, and physiological changes in the anorectal region with advancing age. Johanson and Sonnenberg, in their epidemiological study of hemorrhoidal disease, noted that the peak prevalence occurs in the age range of 45-65 years, which partially overlaps with our findings.[31] However, our study showed a slightly earlier peak, which may reflect regional variations in lifestyle factors, healthcare-seeking behaviour, or possibly the impact of earlier onset of predisposing conditions like chronic constipation or straining during defecation in our population.

The relatively lower prevalence observed in extremes of age (2.9% in 15-20 years and 4.9% in patients above 70 years) also mirrors patterns reported in literature. Younger individuals generally have better tissue elasticity and fewer degenerative changes in the anorectal supporting structures, while the apparent decrease in older age groups may be attributed to reduced healthcare-seeking behaviour for benign conditions or referral bias rather than actual lower incidence.[41]

Gender Distribution

Our study revealed a significant gender disparity with a male predominance (71.4%) compared to females (28.6%). This male preponderance in anorectal diseases has been documented by several researchers. Lee et al., in their study of 976 patients with anorectal complaints, reported a male to female ratio of 2.3:1, which is similar to our findings.[42]

Likewise, Gebbensleben et al. observed that males were more frequently affected by haemorrhoidal disease with a ratio of approximately 2:1.[43]

The higher prevalence among males could be attributed to multiple factors. Fontem et.al., in a review of anorectal disorders, suggested that men are more likely to engage in heavy lifting and physical labour, which increases intra-abdominal pressure, potentially contributing to the development of conditions like hemorrhoids and fissures.[44] Additionally, males in our geographic region often have dietary patterns characterized by lower fibre intake and higher consumption of spicy foods, which may predispose them to constipation and subsequent anorectal conditions.

However, some studies have reported different gender distributions. Haas et al. found nearly equal gender distribution in their study of anal fissures, suggesting that the gender predilection may vary across different anorectal pathologies.[28]The differences in reported gender ratios across studies might also reflect variations in healthcare-seeking behaviour, cultural factors influencing medical consultation, or sampling differences.

Diagnostic Distribution

The diagnostic profile in our study revealed anal fissure (20.3%) as the most common diagnosis, closely followed by Grade 2 hemorrhoids (19.8%), Fistula in ano (15.6%), and Grade 3 hemorrhoids (14.8%). Notably, 16.1% of patients had normal findings upon examination.

The predominance of anal fissures in our study population differs somewhat from several Western studies where hemorrhoids are typically reported as the most prevalent anorectal condition. For instance, Johanson and Sonnenberg found hemorrhoids to be the most common anorectal pathology in their epidemiological study conducted in the United States.[31] However, our findings are congruent with some regional studies from the Indian subcontinent. Ray-Offor

and Amadi, in their study of anorectal diseases in a resource-constrained setting, reported anal fissures as the most common diagnosis (47.3%), followed by hemorrhoids (37.8%).[45]

The high prevalence of anal fissures in our population may be attributed to dietary factors, particularly low fibre intake and consumption of spicy foods, which are common in the regional diet. Dietary patterns that contribute to constipation and subsequent straining during defecation are well-established risk factors for anal fissures as highlighted by Beaty and Shashidharan in their review of anal fissure pathogenesis and treatment.[46]

The significant proportion of patients (16.1%) with normal findings on examination raises important considerations about the sensitivity of dual lens endo proctoscopy in detecting subtle mucosal changes or functional disorders. Bharucha and Wald, in their comprehensive review of anorectal disorders, emphasized that functional anorectal disorders like proctalgia fugax or levator ani syndrome may present with significant symptoms but minimal or no endoscopic findings[47]. Additionally, this finding underscores the importance of considering functional disorders and psychosomatic factors in the differential diagnosis of anorectal complaints when structural abnormalities are not identified.

Gender-Specific Patterns in Diagnosis

Our study revealed significant gender-associated variations in the distribution of anorectal diagnoses ($p=0.008$). Notably, anal fissures were proportionally more common among females (26.4% versus 17.9% in males), while fistula in ano showed a higher prevalence in males (17.9% versus 10% in females). Grade 2 hemorrhoids were also more frequent in males (21.5% versus 15.5% in females).

These gender-specific patterns align with observations from previous studies. Mapel et al. noted a higher prevalence of anal fissures among women, attributing this to sphincter injuries during childbirth, hormonal factors affecting tissue elasticity, and differences in dietary

habits.[48] The higher prevalence of fistula in ano among males in our study is consistent with findings reported by Abcarian, who documented a male predominance in anal fistula with a male-to-female ratio of approximately 2:1.[49] This gender disparity has been attributed to anatomical differences in the pelvic floor, variations in perianal hygiene practices, and possibly hormonal influences on inflammatory responses.

The gender distribution of neoplastic lesions in our study, with a higher proportion among females (3.6% versus 0.7% in males), warrants attention. While the overall numbers were small, this finding diverges from some epidemiological data on colorectal and anal malignancies. Siegel et al., in their cancer statistics report, noted generally higher incidence rates of colorectal cancer among males compared to females.[50] However, our finding might reflect differential healthcare-seeking behaviour or referral patterns rather than true biological differences in disease occurrence.

Management Approaches

Our study demonstrated an almost equal distribution between conservative (50.5%) and operative (49.5%) management strategies. This balanced approach reflects the individualized treatment planning based on specific diagnoses, severity of conditions, and patient factors.

The management distribution showed significant associations with specific diagnoses ($p<0.001$). Conditions like anal polyps, fistula in ano, and Grade 3 hemorrhoids were predominantly managed surgically, while Grade 1 hemorrhoids and anal fissures were more frequently treated conservatively. This treatment stratification is consistent with current clinical practice guidelines.

Altomare et al., in the European Society of Coloproctology (ESCP) guidelines for hemorrhoidal disease, recommend conservative management for Grade 1 and some Grade 2 hemorrhoids,

while advocating surgical approaches for Grade 3 and 4 disease.[51] Similarly, Stewart et al., in the American Society of Colon and Rectal Surgeons' clinical practice guidelines for anal fissures, suggest initial conservative management with surgical intervention reserved for refractory cases.[52]

The high rate of surgical management for fistula in ano (96.7% of fistula cases managed operatively) in our study is consistent with the general consensus that fistulotomy or other surgical techniques remain the definitive treatment for most anal fistulas. This approach is supported by Steele et al., who emphasized that surgical intervention provides the best long-term outcomes for fistula in ano, with conservative measures generally yielding inferior results.[53]

The utility of dual lens endo proctoscopy in guiding management decisions was particularly evident in our cohort. The enhanced visualization offered by this technique facilitated precise assessment of hemorrhoid grades, fistula tracts, and the extent of other pathologies, enabling more informed decision-making regarding conservative versus surgical management. This advantage has been highlighted by Alonso-Coello et al., who emphasized that accurate assessment of anorectal conditions is paramount for appropriate treatment selection[54].

Advantages of Dual Lens Endo Proctoscopy

Our experience with dual lens endo proctoscopy in this study highlighted several advantages over conventional proctoscopy. The enhanced illumination and magnification facilitated detailed examination of the anorectal mucosa, enabling detection of subtle mucosal changes that might be missed with standard instruments. The broader field of view provided comprehensive visualization of the entire anal canal and distal rectum in a single examination.

These advantages have been corroborated by other researchers. Alonso-Coello et al. emphasized that improved visualization techniques in proctoscopy significantly enhance diagnostic accuracy in anorectal conditions.[54] Similarly, Cataldo et al. noted that advanced endoscopic imaging modalities increase the detection rate of early neoplastic lesions in the anorectal region.[55]

Additionally, dual lens endo proctoscopy demonstrated particular utility in the evaluation of complex anorectal conditions like fistula in ano. The side lens, in particular, facilitated more accurate assessment of fistula tracts, internal openings, and associated abscesses, contributing to more precise surgical planning. This advantage was especially evident in the high concordance between preoperative assessment and intraoperative findings in cases managed surgically.

The images captured through the Endo proctoscopy procedure allowed for detailed assessment of the anal canal by multiple clinicians without repeated examination thus allowing for diagnostic accuracy with minimal invasiveness.

One notable advantage of DLP proctoscopy is its capability to integrate captured images into an Artificial Intelligence (AI)-powered system for disease detection. With AI algorithms trained on extensive datasets of labelled medical images, these systems enable automated recognition of diseases. By feeding DLP images into such an AI platform, diagnostic processes in the future can benefit from machine learning techniques that detect abnormalities or patterns associated with various conditions. This approach accelerates the diagnostic process while improving accuracy, as AI models are often adept at identifying early indicators of diseases that may escape even skilled clinicians. Over time, as the AI system continues to learn from an increasing volume of images, it can become progressively more proficient in recognizing a broad spectrum of anorectal disorders.

Limitations and Future Directions

While our study provides valuable insights into the role of dual lens endo proctoscopy in anorectal diseases, limitations should be acknowledged. The single-centre design may limit the generalizability of our findings to other settings with different patient demographics or practice patterns.

Furthermore, clinicians require adequate training in manoeuvring the scope for visualisation of the mucosal surface of the anal canal, to identify and focus on any alteration from the normal while using the side viewing camera of the scope.

Additional areas for future research include the evaluation of dual lens endo proctoscopy in specific clinical scenarios, such as post-surgical surveillance or inflammatory bowel disease-associated anorectal complications. The potential integration of this technology with other diagnostic modalities, such as endoanal ultrasonography or magnetic resonance imaging, in complex anorectal conditions also warrants investigation.

CONCLUSION:

The use of Dual Lens Endo Proctoscopy (DLP) enables very good visualization, with the side lens allowing to visualize the anal mucosa, and makes it simple to gather data for diagnosis, therapy, and as a counselling tool for patients. The data repository helps and supports the pathologist in need of disease image for reporting and to the surgeon in analysing the future recurrence cases as well as builds a platform for future AI detection of disease.

SUMMARY

A prospective observational study was conducted at Shri B.M. Patil Medical College, Hospital and Research Centre, Vijayapura from April 2023 to January 2025 to evaluate the role of dual lens endo proctoscopy in anorectal diseases among 384 patients. The study revealed that the majority of patients were middle-aged, with the highest prevalence in the 31-40 years age group (27.6%), and followed by the 41-50 years age group (24%). A significant gender disparity was observed, with males comprising 71.4% of the study population compared to 28.6% females.

The diagnostic profile showed anal fissure as the most frequent diagnosis (20.3%), closely followed by Grade 2 hemorrhoids (19.8%), fistula in ano (15.6%), and Grade 3 hemorrhoids (14.8%). Notably, 16.1% of patients had normal findings upon examination with dual lens endo proctoscopy.

Management approaches were nearly equally distributed between conservative (50.5%) and operative (49.5%) treatments. A statistically significant association ($p<0.001$) was observed between specific diagnoses and management strategies. Conditions like anal polyps, fistula in ano, and Grade 3 hemorrhoids were predominantly managed surgically, while Grade 1 hemorrhoids and anal fissures were more frequently treated conservatively.

Significant gender-associated variations in the distribution of anorectal diagnoses were noted ($p=0.008$). Anal fissures were proportionally more common among females (26.4% versus 17.9% in males), while fistula in ano showed a higher prevalence in males (17.9% versus 10% in females).

All the images and data generated from the patients were uploaded into software and these images were used to counsel and educate the participants as well as the general population. Histopathological video/image annotation helped the pathologist in confirmation and ease of diagnoses and by feeding DLP images into AI platform,

diagnostic processes in the future can benefit from machine learning techniques that detect abnormalities or patterns associated with various conditions.

The enhanced visualization capabilities of dual lens endo proctoscopy facilitated precise assessment of anorectal conditions, enabling more informed decision-making regarding management approaches and contributing to improved patient outcomes.

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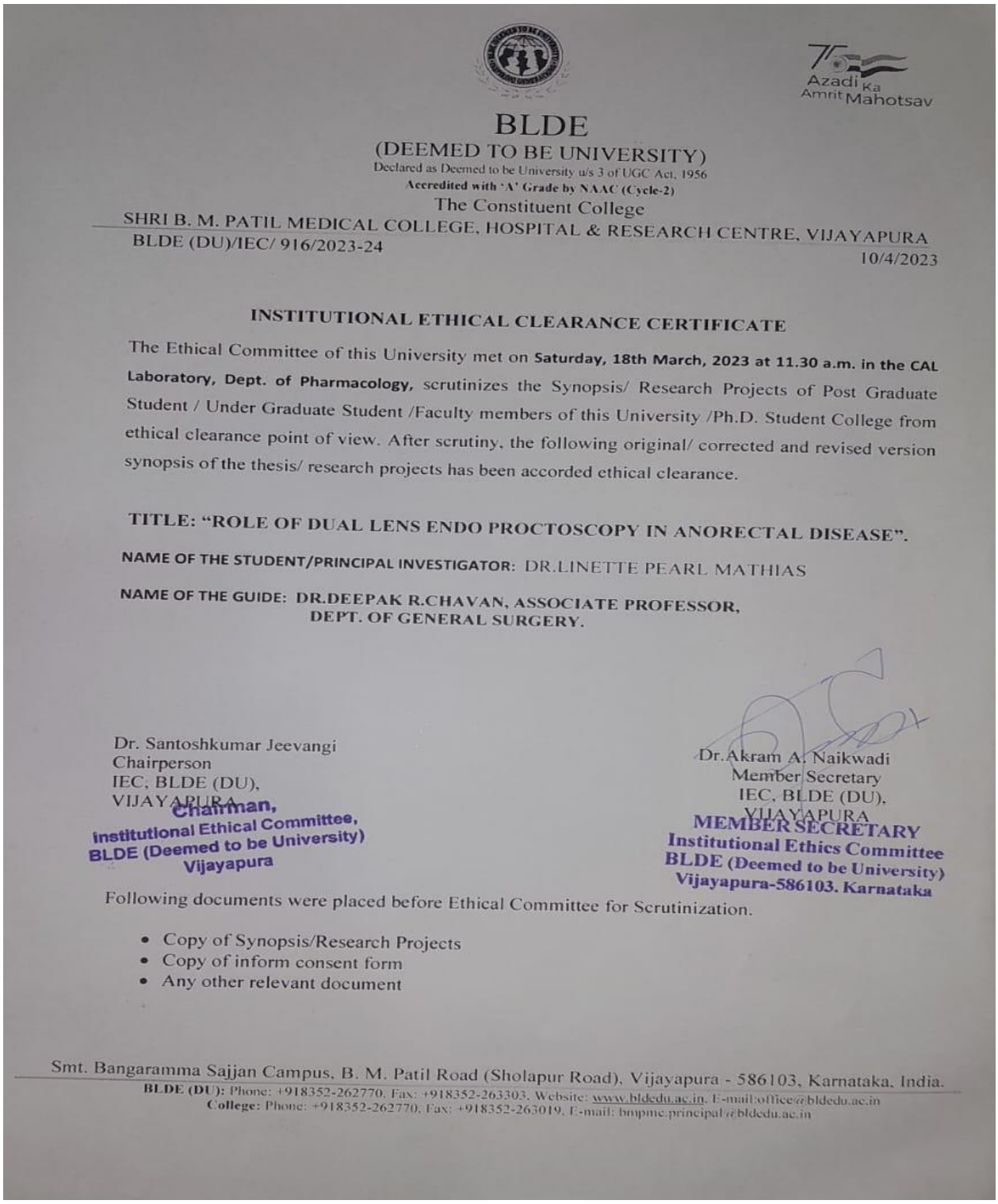
ANNEXURE- I

ETHICAL COMMITTEE CLEARANCE CERTIFICATE



BLDE
(DEEMED TO BE UNIVERSITY)
Declared as Deemed to be University u/s 3 of UGC Act, 1956
Accredited with 'A' Grade by NAAC (Cycle-2)
The Constituent College
SHRI B. M. PATIL MEDICAL COLLEGE, HOSPITAL & RESEARCH CENTRE, VIJAYAPURA

BLDE (DU)/IEC/ 916/2023-24 10/4/2023

INSTITUTIONAL ETHICAL CLEARANCE CERTIFICATE

The Ethical Committee of this University met on **Saturday, 18th March, 2023 at 11.30 a.m. in the CAL Laboratory, Dept. of Pharmacology,** scrutinizes the Synopsis/ Research Projects of Post Graduate Student / Under Graduate Student /Faculty members of this University /Ph.D. Student College from ethical clearance point of view. After scrutiny, the following original/ corrected and revised version synopsis of the thesis/ research projects has been accorded ethical clearance.

TITLE: "ROLE OF DUAL LENS ENDO PROCTOSCOPY IN ANORECTAL DISEASE".

NAME OF THE STUDENT/PRINCIPAL INVESTIGATOR: DR.LINETTE PEARL MATHIAS

NAME OF THE GUIDE: DR.DEEPAK R.CHAVAN, ASSOCIATE PROFESSOR, DEPT. OF GENERAL SURGERY.

Dr. Santoshkumar Jeevangi
Chairperson
IEC, BLDE (DU),
VIJAYAPURA
Chairman,
Institutional Ethical Committee,
BLDE (Deemed to be University)
Vijayapura

Dr.Akram A. Naikwadi
Member Secretary
IEC, BLDE (DU),
VIJAYAPURA
MEMBER SECRETARY
Institutional Ethics Committee
BLDE (Deemed to be University)
Vijayapura-586103. Karnataka

Following documents were placed before Ethical Committee for Scrutinization.

- Copy of Synopsis/Research Projects
- Copy of inform consent form
- Any other relevant document

Smt. Bangaramma Sajjan Campus, B. M. Patil Road (Sholapur Road), Vijayapura - 586103, Karnataka, India.
BLDE (DU): Phone: +918352-262770, Fax: +918352-263303, Website: www.bldedu.ac.in, E-mail:office@bldedu.ac.in
College: Phone: +918352-262770, Fax: +918352-263019, E-mail: bmpmc.principal@bldedu.ac.in

ANNEXURE –II

INFORMED CONSENT FORM

B.L.D.E.(D.U.) SHRI B.M. PATIL MEDICAL COLLEGE HOSPITAL AND RESEARCH CENTRE, VIJAYAPUR – 586103, KARNATAKA

"ROLE OF DUAL LENS ENDO PROCTOSCOPY IN ANORECTAL DISEASE"

NAME OF THE INVESTIGATOR: DR. LINETTE PEARL MATHIAS

NAME OF THE GUIDE: DR. DEEPAK R CHAVAN.

PURPOSE OF RESEARCH:

I have been informed that this study will help in understanding the role of Dual Lens Endo Proctoscopy in diagnosis of anorectal disorders.

I have been explained about the reason for doing this study and selecting me/my ward as a subject for this study. I have also been given the free choice of either being included or not in the study.

PROCEDURE:

I understand that relevant history will be taken, and I will undergo a detailed clinical examination and will also be explained the required investigations as per standard protocol.

RISKS AND DISCOMFORTS:

I understand that I/my ward may experience pain and discomfort during the examination or any intervention. This is mainly the result of my condition, and the procedure of this study is not expected to exaggerate these feelings, which are associated with the usual course of diagnosis and treatment.

ALTERNATIVES:

Even if you decline participation, you will get the routine line of management.

BENEFITS

I understand that I/my ward's participation in this study will help in understanding the role of Dual Lens Endo Proctoscopy in diagnosis of anorectal disorders.

CONFIDENTIALITY:

I understand that medical information produced by this study will become a part of this hospital records and will be subjected to the confidentiality and privacy regulation of this hospital. Information of a sensitive, personal nature will not be a part of the medical records. Still, it will be stored in the investigator's research file and identified only by a code number. The code key connecting the name to numbers will be kept in a separate secure location.

Suppose the data are used for publication in the medical literature or for teaching purpose, no names will be used, and other identifiers such as photographs and audio or video tapes will be used only with my special written permission. I understand that I may see the picture and videotapes and hear audiotapes before giving this permission.

REQUEST FOR MORE INFORMATION:

I understand that I may ask more questions about the study at any time **Dr. LINETTE PEARL MATHIAS** is available to answer my questions or concerns. I understand that I will

be informed of any significant findings discovered during this study which might influence my continued participation.

If, during this study or later, I wish to discuss my participation in or concerns regarding this study with a person not directly involved, I am aware that the hospital's social worker is available to talk with me.

REFUSAL OR WITHDRAWAL OF PARTICIPATION:

I understand that my participation is voluntary, and I may refuse to participate or may withdraw consent and discontinue participation in the study at any time without prejudice to my present or future care at this hospital.

I also understand that Dr. LINETTE PEARL MATHIAS will terminate my participation in this study at any time after he has explained the reasons for doing so and has helped arrange for my continued care by my physician or therapist, if this is appropriate.

INJURY STATEMENT:

I understand that in the unlikely event of injury to me/my ward, resulting directly to my participation in this study, if such injury were reported promptly, then medical treatment would be available to me, but no further compensation will be provided.

I understand that by my agreement to participate in this study, I am not waiving any of my legal rights.

I have explained to _____ the purpose of this research, the procedures required and the possible risks and benefits, to the best of my ability in patient's own language.

Date:

Dr. DEEPAK R CHAVAN (Guide)

Dr. LINETTE PEARL MATHIAS (Investigator)

STUDY SUBJECT CONSENT STATEMENT:

I confirm that **Dr. LINETTE PEARL MATHIAS** has explained to me the purpose of this research, the study procedure that I will undergo and the possible discomforts and benefits that I may experience in my language.

I have been explained all the above in detail in my own language, and I understand the same. Therefore I agree to give my consent to participate as a subject in this research project.

_____ _____

(Participant) Date

_____ _____

(Witness to above signature) Date

_____ _____

(Investigator to signature) (Date)

ANNEXURE –III

PROFORMA

Date:

Name:

Age:

Sex:

IP NO:

Occupation:

Address:

Mobile No.:

Chief complaints:

Brief history:

Past history:

Personal history:

General physical examination:

Vitals

Systemic examination:

Per abdomen:

Cardiovascular system:

Respiratory system:

Central nervous system:

Digital rectal examination:

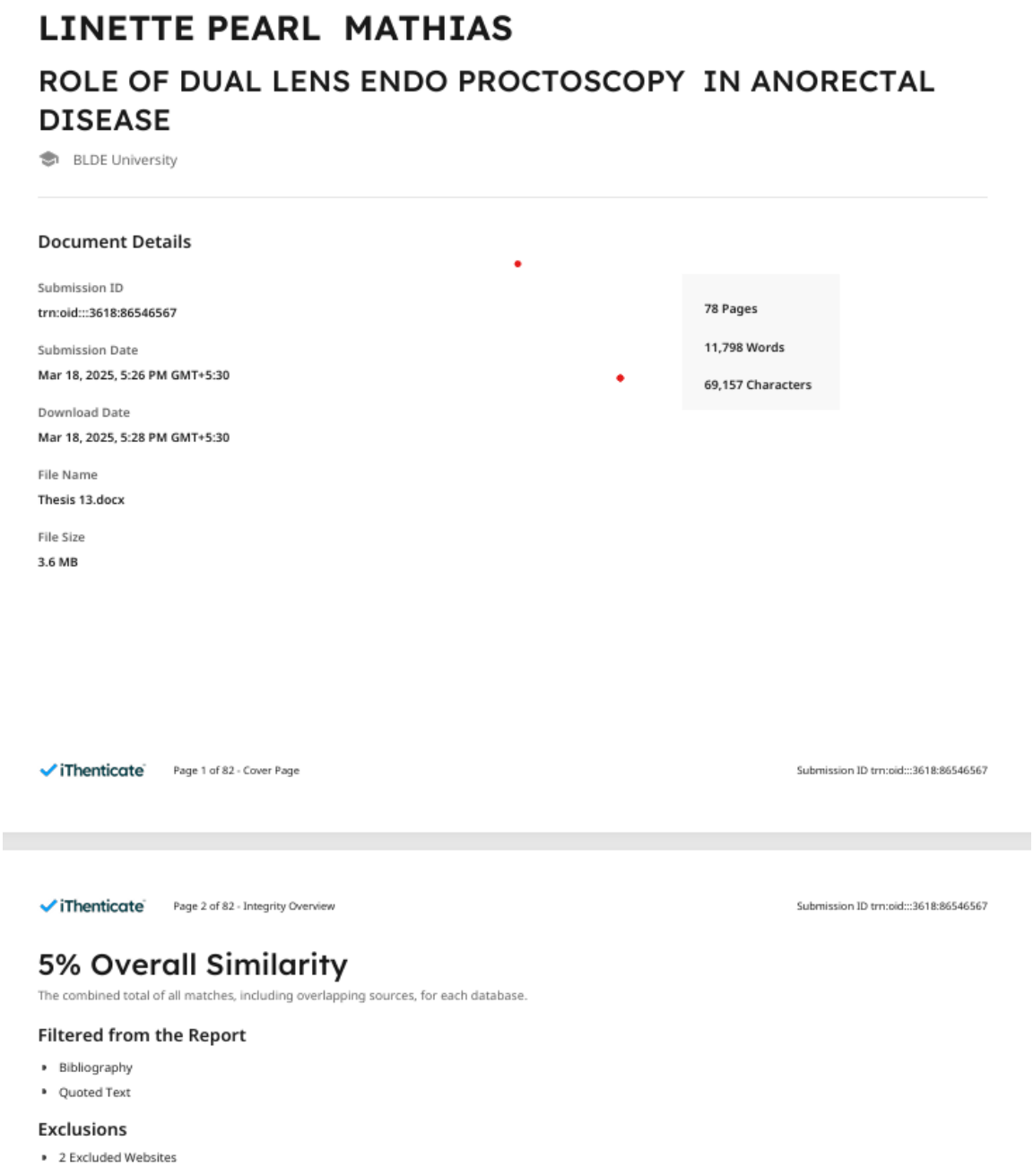
Dual Lens Endo Proctoscopy findings with images:

Final diagnosis:

Treatment advised:

ANNEXURE IV

PLAGIARISM CERTIFICATE



LINETTE PEARL MATHIAS

ROLE OF DUAL LENS ENDO PROCTOSCOPY IN ANORECTAL DISEASE

BLDE University

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- Bibliography
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Exclusions

- 2 Excluded Websites

ANNEXURE V

MASTERCHART

S.NO.	REG. NO.	NAME OF PATIENT	AGE	SEX	DIAGNOSIS
1	65462	SUBRAYYA	47	Male	FISTULA IN ANO
2	143667	MR VINOD PATIL	46	Male	GRADE 2 HEMORRHOIDS
3	119905	LAXMAN	58	Male	GRADE 2 HEMORRHOIDS
4	147511	SHARADA	35	Female	NORMAL
5	111315	GEETA	36	Female	FISSURE IN ANO
6	4163	RAJU RATHOD	27	Male	GRADE 3 HEMORRHOIDS
7	208517	RAMESH NATIKAR	28	Male	GRADE 3 HEMORRHOIDS
8	4229	MRS MAMATA INDI	34	Female	GRADE 2 HEMORRHOIDS
9	4230	MRS. NITA AGARWAL	57	Female	GRADE 3 HEMORRHOIDS
10	210476	MRS VEENA SHINDE	37	Female	FISSURE IN ANO
11	200517	MR BHIMRAYA	47	Male	GRADE 3 HEMORRHOIDS
12	209952	MRS DEEPA MAHENDRAKUMAR	35	Female	FISSURE IN ANO
13	4336	MR. SURYA KEMBHAVI	73	Male	FISTULA IN ANO
14	221902	MR SANGAYYA HIREMATH	45	Male	COLITIS
15	217093	MRS SAVITRI PATTAR	59	Female	GRADE 1 HEMORRHOIDS
16	229349	MR BASAVARAJ AMITGOUDAR	41	Male	FISTULA IN ANO
17	224261	MRS SHARADA S DHARAMSATTI	40	Female	GRADE 2 HEMORRHOIDS
18	225245	MR PRASHANTH MAMDAOUR	32	Male	COLITIS
19	229920	MR KUMAR CHANDRAPPA PUJAAR	50	Male	FISTULA IN ANO
20	249204	MR PRADEEP PATTANASHETTI	26	Male	GRADE 2 HEMORRHOIDS
21	226815	MRS REKHA	38	Female	GRADE 2 HEMORRHOIDS
22	216142	MR M H MULLAL	75	Male	GRADE 3 HEMORRHOIDS
23	236874	MR RAMANNA SALAHALI	60	Male	GRADE 3 HEMORRHOIDS
24	242698	MRS SHOBHA VEERESH JOGUR	42	Female	ANAL POLYP
25	241700	MR ANIL GANAPATI	31	Male	FISTULA IN ANO
26	249038	MR RAJKUMAR NAGARGOJE	61	Male	GRADE 2 HEMORRHOIDS
27	249616	VISHWANATH	35	Male	GRADE 3 HEMORRHOIDS
28	241537	MR SHANKREPPA ARJUNAGI	75	Male	GRADE 3 HEMORRHOIDS
29	264054	MR ABHISHEK TERADAL	21	Male	GRADE 3 HEMORRHOIDS
30	258319	KENCHAPPA	30	Male	GRADE 2 HEMORRHOIDS
31	266261	LAXMI	40	Female	FISTULA IN ANO
32	210330	SHIVANAGOUDA	41	Male	FISTULA IN ANO
33	70959	MAHADEV	42	Male	GRADE 2 HEMORRHOIDS
34	293157	MALLIKA	35	Female	FISSURE IN ANO
35	299921	SIDDARAM	61	Male	GRADE 3 HEMORRHOIDS
36	291253	MAHADEVI	63	Female	GRADE 2 HEMORRHOIDS
37	313068	DEVANNA	40	Male	GRADE 2 HEMORRHOIDS
38	314200	YALLAPPA	53	Male	GRADE 2 HEMORRHOIDS
39	52436	SANJAY	40	Male	GRADE 2 HEMORRHOIDS
40	88279	UMESH	49	Male	GRADE 3 HEMORRHOIDS
41	302805	RIYAZ	25	Male	GRADE 3 HEMORRHOIDS
42	313036	KUBERAPPA	42	Male	GRADE 3 HEMORRHOIDS
43	262259	PRAKASH RATHOD	39	Male	FISTULA IN ANO
44	275639	PEERMAHAMAD	44	Male	GRADE 2 HEMORRHOIDS
45	269571	VITTAL	27	Male	FISTULA IN ANO
46	314118	PRAVEEN PATANASHETTY	40	Male	FISTULA IN ANO
47	262850	BASAVARAJ KAPALLI	31	Male	FISTULA IN ANO
48	305363	GOLALAPPA	65	Male	GRADE 2 HEMORRHOIDS
49	315088	DHANU NAIK	48	Male	GRADE 2 HEMORRHOIDS
50	320272	MALLAPPA GOTE	45	Male	FISTULA IN ANO
51	329937	BOGAMMA MADAGI	51	Female	GRADE 3 HEMORRHOIDS
52	322627	GITA S PATIL	39	Female	FISSURE IN ANO
53	357623	MEERASAB GADYAL	18	Male	NORMAL
54	356933	KASHINATH KAMBALE	80	Male	GRADE 2 HEMORRHOIDS
55	343846	SANTOSH NAIK	37	Male	FISTULA IN ANO
56	185910	VATAN CHAVAN	34	Male	GRADE 2 HEMORRHOIDS
57	364599	MR VENUGOPAL LADDA	58	Male	GRADE 2 HEMORRHOIDS
58	380894	ZAHEDA	60	Female	GRADE 3 HEMORRHOIDS
59	338131	RAVI RATHOD	38	Male	FISTULA IN ANO
60	375104	UMESH HANAMANTH	43	Male	FISTULA IN ANO
61	381968	NILAWWA	42	Female	FISSURE IN ANO
62	389549	ANNARAY SHAMRAO	41	Male	FISTULA IN ANO

63	382623	SHARANAPPA BASANNA MALAGI	55	Male	NORMAL
64	382717	IRAPPA KUMBAR	52	Male	NORMAL
65	373070	SHIVPUTRYA MATH	60	Male	FISTULA IN ANO
66	190028	KALYANAPPA	64	Male	GRADE 3 HEMORRHOIDS
67	329023	MALLIKARJUN MUDDAPUR	64	Male	FISSURE IN ANO
68	315173	SUDHABAI	38	Female	GRADE 2 HEMORRHOIDS
69	11135	DHUNDAPPA K	58	Male	FISTULA IN ANO
70	403583	SUNIL BIRADAR	27	Male	FISSURE IN ANO
71	256633	JAGADEVAPPA PUJARI	32	Male	GRADE 3 HEMORRHOIDS
72	7768	JYOTHI BAGAVATI	35	Female	NORMAL
73	3314	JAYASHREE BIRADAR	29	Female	FISSURE IN ANO
74	402716	VINOD ARKERI	15	Male	FISTULA IN ANO
75	400311	SANGAMNATH NUCHI	40	Male	FISTULA IN ANO
76	2788	MALKARSIDDA NIDONI	32	Male	GRADE 2 HEMORRHOIDS
77	138936	BASANNA	75	Male	GRADE 2 HEMORRHOIDS
78	377338	SANGAPPA BIRAJANAVAR	70	Male	GRADE 3 HEMORRHOIDS
79	396527	SHRISHAIL KADAKOL	37	Male	FISTULA IN ANO
80	371325	SHANKARAPPA VITTAL LONI	50	Male	PERIANAL SINUS
81	363920	LAGAMANNA BISANAL	41	Male	PERIANAL SINUS
82	378240	BAVASAB NAMADEV	42	Male	FISSURE IN ANO
83	312167	RAVI	32	Male	GRADE 3 HEMORRHOIDS
84	90370	MINAXI KULKARNI	50	Female	FISSURE IN ANO
85	305947	BASAPPA	39	Male	GRADE 2 HEMORRHOIDS
86	13909	ROHAN AWATI	48	Male	GRADE 2 HEMORRHOIDS
87	373708	MALLAPPA	57	Male	GRADE 3 HEMORRHOIDS
88	18386	PUSHPA HOSAMANI	21	Female	GRADE 2 HEMORRHOIDS
89	272798	PRAKASH	23	Male	PERIANAL SINUS
90	16299	CHANDRASHEKHAR	60	Male	GRADE 2 HEMORRHOIDS
91	369417	JAFFARSAB	54	Male	FISTULA IN ANO
92	380257	MAHANTAYYA	52	Male	GRADE 3 HEMORRHOIDS
93	70710	GIRISH	42	Male	FISSURE IN ANO
94	25815	SRIPATI BANSODE	33	Male	FISSURE IN ANO
95	10323	VIVEKANANDA	32	Male	GRADE 3 HEMORRHOIDS
96	105457	MAHADEV	48	Male	NORMAL
97	78024	MALLAPPA	78	Male	GRADE 2 HEMORRHOIDS
98	122359	BASAVARAJ	68	Male	GRADE 3 HEMORRHOIDS
99	66846	ANNARAY	64	Male	GRADE 2 HEMORRHOIDS
100	56951	PUTLAWWA	80	Female	FISSURE IN ANO
101	22473	DIVAKAR	47	Male	NORMAL
102	58916	BHIMAPPA	37	Male	FISSURE IN ANO
103	59060	BASAMMA	60	Female	FISSURE IN ANO
104	51482	SIDDAPPA	40	Male	FISSURE IN ANO
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106	103206	RAKAMABAI	61	Male	FISTULA IN ANO
107	50688	DHULAPPA	35	Male	FISSURE IN ANO
108	50773	GURAPPA	32	Male	FISTULA IN ANO
109	44568	LOKESH	37	Male	GRADE 1 HEMORRHOIDS
110	44284	SHARANAPPA	65	Male	ANAL POLYP
111	42705	BHARATI PATIL	48	Female	GRADE 3 HEMORRHOIDS
112	431840	GOPAL	51	Male	FISSURE IN ANO
113	42165	BASAMMA HADAGAL	50	Female	FISSURE IN ANO
114	16433	MUTTAPPA	65	Male	NORMAL
115	104254	ASHWINI	27	Female	FISSURE IN ANO
116	34253	GURURAJ	22	Male	NORMAL
117	34813	TIPPAVA	30	Female	GRADE 2 HEMORRHOIDS
118	33457	MALLIKARJUN	30	Male	FISSURE IN ANO
119	126126	SOMANING	52	Male	GRADE 2 HEMORRHOIDS
120	127578	FATAMA	30	Female	FISTULA IN ANO
121	33785	SHARANAPPA	35	Male	GRADE 2 HEMORRHOIDS
122	401808	GANGABAI	46	Female	GRADE 3 HEMORRHOIDS
123	6237	PRAKASH	49	Male	NORMAL
124	409137	RAVI KUMAR	35	Male	GRADE 1 HEMORRHOIDS
125	306843	YALLAPPA	64	Male	FISSURE IN ANO
126	277983	REKHA MELAGIRI	34	Female	FISTULA IN ANO
127	21609	KAVERI	48	Female	GRADE 2 HEMORRHOIDS
128	37665	SHANKAR PATIL	49	Male	GRADE 3 HEMORRHOIDS
129	29235	HONNAPPA	75	Male	FISTULA IN ANO
130	54158	VEERENDRA LONI	50	Male	GRADE 3 HEMORRHOIDS
131	17783	VIRESH	32	Male	GRADE 2 HEMORRHOIDS
132	94843	SIDDAPPA	62	Male	NORMAL
133	94850	SAHANA JOSHI	37	Female	FISSURE IN ANO

134	1320	MALKAPPA	55	Male	FISTULA IN ANO
135	245935	SHRISHAIL PUJARI	56	Male	ANAL POLYP
136	253649	BABU	60	Male	FISSURE IN ANO
137	243426	SATYAPPA	60	Male	GRADE 2 HEMORRHOIDS
138	222128	RAMASINGH	28	Male	PERIANAL SINUS
139	237727	SUBRAYYA	62	Male	FISTULA IN ANO
140	233125	NANAGOUDA	65	Male	GRADE 3 HEMORRHOIDS
141	214190	ASHOK KHADDE	42	Male	FISTULA IN ANO
142	213974	SIDDAPPA BIRADAR	38	Male	GRADE 2 HEMORRHOIDS
143	327322	SUBBANNA JOGUR	73	Male	NORMAL
144	204770	SHIVANAND	34	Male	FISSURE IN ANO
145	116132	MAHANTESH	34	Male	FISTULA IN ANO
146	124179	MALLAPPA	50	Male	NORMAL
147	184583	BHAGIRATHI	66	Female	NORMAL
148	168861	GOURAWWA	40	Female	FISTULA IN ANO
149	200550	SURESH NAIKODI	45	Male	GRADE 3 HEMORRHOIDS
150	194719	NINGARAJ	24	Male	FISSURE IN ANO
151	194062	MANOHAR KATNALLI	58	Male	GRADE 3 HEMORRHOIDS
152	166990	BASAVARAJ HALLI	46	Male	GRADE 2 HEMORRHOIDS
153	161427	ANNAPPA AIGALI	53	Male	GRADE 2 HEMORRHOIDS
154	150705	LAXMIKANT KUMAR	37	Male	COLITIS
155	204841	PATIL BHIMANAGOUDA	68	Male	GRADE 3 HEMORRHOIDS
156	105758	RUKMUDDIN WALIKAR	63	Male	GRADE 2 HEMORRHOIDS
157	262969	BASAVARAJ KULAGERI	63	Male	FISSURE IN ANO
158	237891	MUBINA ILKAL	38	Female	FISSURE IN ANO
159	204821	LAXMAN BANKALGI	31	Male	GRADE 3 HEMORRHOIDS
160	229560	LAXMAN SHINDE	50	Male	EXTERNAL HEMORRHOIDS
161	300763	LAYAWWA	34	Female	FISSURE IN ANO
162	300764	PRIYANKA HORATI	37	Female	NORMAL
163	301074	MANIKANTH L	56	Male	GRADE 2 HEMORRHOIDS
164	301083	DAYANAND	56	Male	GRADE 2 HEMORRHOIDS
165	301121	NAGAPPA RUDAGI	53	Male	GRADE 3 HEMORRHOIDS
166	366176	RAMAPPA	76	Male	GRADE 2 HEMORRHOIDS
167	280610	SHASHIKALA	26	Female	NORMAL
168	291504	SHANKAR VITTAL	64	Male	GRADE 3 HEMORRHOIDS
169	108366	UMESH	33	Male	FISSURE IN ANO
170	122150	MAHANTAGOUDA	49	Male	GRADE 3 HEMORRHOIDS
171	298052	LAKHSMIBAI	64	Female	GRADE 3 HEMORRHOIDS
172	14937	SANJEEV	35	Male	GRADE 2 HEMORRHOIDS
173	401808	GANGABAI	46	Female	GRADE 3 HEMORRHOIDS
174	502	SUSHILA	45	Female	NEOPLASM
175	409169	USMAN PATHAN	46	Male	FISTULA IN ANO
176	6237	PRAKASH	49	Male	FISSURE IN ANO
177	1623	REKHA	30	Female	FISSURE IN ANO
178	1395	MANJUNATH	48	Male	PERIANAL SINUS
179	731409	RAVI KUMAR	35	Male	GRADE 1 HEMORRHOIDS
180	21838	ARVIND	51	Male	FISTULA IN ANO
181	21609	KAVERI	48	Female	NORMAL
182	15246	ASHOK C	46	Male	FISTULA IN ANO
183	13913	MAYUR	49	Male	GRADE 3 HEMORRHOIDS
184	216835	BANDAVVA TUPPADA	29	Female	GRADE 1 HEMORRHOIDS
185	31168	SHASHIDHAR	47	Male	ANAL POLYP
186	4232	SHIVANANDA LONAR	48	Male	GRADE 2 HEMORRHOIDS
187	213339	BHIMARAYA	29	Male	GRADE 2 HEMORRHOIDS
188	4013	BASAVANTHRAI BIRADAR	57	Male	FISTULA IN ANO
189	5033	SUMIT	31	Male	FISTULA IN ANO
190	31165	PRAMODKUMAR YADAV	35	Male	NORMAL
191	65185	PRADEEP	45	Male	NORMAL
192	55809	DHAREPPA SUDAM	62	Male	FISSURE IN ANO
193	5621	SAYABANNA	54	Male	FISSURE IN ANO
194	5115	GAJANAND	45	Male	FISTULA IN ANO
195	69512	ASIF	34	Male	GRADE 2 HEMORRHOIDS
196	3884	VIKAS PATIL	17	Male	FISSURE IN ANO
197	65375	SANGAMESH	40	Male	FISTULA IN ANO
198	1628	MUDAKAPPA NAIKODI	40	Male	FISTULA IN ANO
199	6154	BABU	62	Male	FISSURE IN ANO
200	6252	BASAMMA	44	Female	GRADE 2 HEMORRHOIDS
201	28264	BASANNA WADDAR	55	Male	FISTULA IN ANO
202	11594	NAGAPPA	60	Male	GRADE 2 HEMORRHOIDS
203	79381	SHANKREPPA KUMBAR	68	Male	GRADE 3 HEMORRHOIDS
204	2662	SAMPAT	36	Male	FISSURE IN ANO

205	78952	SARASWATI HALAGALI	52	Female	NORMAL
206	80378	VIRESH	45	Male	NORMAL
207	81379	ALURE	31	Male	FISTULA IN ANO
208	28273	SADASHIV	26	Male	GRADE 2 HEMORRHOIDS
209	204028	NILAVVA	75	Female	FISSURE IN ANO
210	213262	CHANDRASHEKHAR	64	Male	FISTULA IN ANO
211	146167	SUGALABAI HUGAR	80	Female	GRADE 2 HEMORRHOIDS
212	833	ANASUYA HIKKANAGUTTI	42	Female	FISSURE IN ANO
213	123761	MAHESH	21	Male	GRADE 3 HEMORRHOIDS
214	1916	VIJAY	38	Male	FISSURE IN ANO
215	177258	PREMAVVA	65	Female	NEOPLASM
216	126657	BALU RATHOD	55	Male	GRADE 2 HEMORRHOIDS
217	152447	SANAMMA BIRADAR	60	Female	GRADE 2 HEMORRHOIDS
218	105093	OGEPPA GIRADE	42	Male	FISSURE IN ANO
219	368	MALLESH GHANTI	68	Male	GRADE 2 HEMORRHOIDS
220	82119	RAJESH CHAVARE	42	Male	FISSURE IN ANO
221	88273	SADASHIVA KUMBAR	63	Male	FISSURE IN ANO
222	8111	SIDRAYA KANTAPPA ALURE	31	Male	FISTULA IN ANO
223	8137	TANVEER WADIGERI	25	Male	GRADE 3 HEMORRHOIDS
224	8553	ABHIMANYU BIRADAR	88	Male	NEOPLASM
225	169077	YALLAPPA KAMBLE	38	Male	FISTULA IN ANO
226	9505	AKASH KATANALLI	24	Male	FISTULA IN ANO
227	18504	JATEPPA	67	Male	GRADE 2 HEMORRHOIDS
228	17589	KHAJASAB	56	Male	GRADE 2 HEMORRHOIDS
229	165302	RAMAPPA	45	Male	FISTULA IN ANO
230	165305	NAGAMMA BANDIVADDAR	45	Female	FISTULA IN ANO
231	148596	AMRUTHA	34	Female	NORMAL
232	8856	FAIZAL	28	Male	GRADE 1 HEMORRHOIDS
233	19040	PARSHURAM	37	Male	GRADE 2 HEMORRHOIDS
234	17582	SUJATA	54	Female	FISSURE IN ANO
235	17621	KAMALABAI	50	Female	GRADE 2 HEMORRHOIDS
236	18117	GANESH	35	Male	NORMAL
237	12487	SHANKERAPPA	75	Male	FISSURE IN ANO
238	1971	MAHANTAMMA	62	Female	NEOPLASM
239	12463	GURUSIDDAPPA	41	Male	NORMAL
240	8755	HASAN	45	Male	GRADE 3 HEMORRHOIDS
241	12459	DAYAPPA	40	Male	GRADE 2 HEMORRHOIDS
242	12420	TUJALABAI	66	Female	GRADE 2 HEMORRHOIDS
243	927	NINGANAGOUDA	74	Male	GRADE 1 HEMORRHOIDS
244	219752	PARAVATI	60	Female	GRADE 3 HEMORRHOIDS
245	10088	VINODKUMAR SAHEBGOUDA PATIL	28	Male	FISTULA IN ANO
246	14188	JAYASHREE BANI	36	Female	FISTULA IN ANO
247	15491	VITABAI KARADE	70	Female	NORMAL
248	19213	MAHANANDA	46	Female	NEOPLASM
249	17419	VINAY SHIGLI	24	Male	PINWORM INFECTION
250	223277	ASHOK RAICHUR	34	Male	NEOPLASM
251	304114	VINAYAK	34	Male	FISSURE IN ANO
252	67053	LAXMIBAI	50	Female	GRADE 3 HEMORRHOIDS
253	58594	CHINAMMA	62	Female	FISTULA IN ANO
254	58611	SHARANAMMA	49	Female	GRADE 3 HEMORRHOIDS
255	298798	RAVINDRA NAGARAL	25	Male	FISSURE IN ANO
256	308068	GANESH	40	Male	GRADE 1 HEMORRHOIDS
257	50376	GANGADHAR	75	Male	GRADE 3 HEMORRHOIDS
258	50379	AMBANNA	65	Male	GRADE 2 HEMORRHOIDS
259	290781	DIVYA SIDDAYYA	20	Female	FISSURE IN ANO
260	375174	VIVEK	21	Male	GRADE 2 HEMORRHOIDS
261	123795	AMEENBI	58	Female	GRADE 2 HEMORRHOIDS
262	141825	RAJASHEKAR	29	Male	FISSURE IN ANO
263	127580	LAXMAN	58	Male	FISTULA IN ANO
264	20109	TOUSIF	50	Male	FISSURE IN ANO
265	14569	RAVIKUMAR UPPAR	34	Male	NORMAL
266	19400	SANGAM HUBBALLI	44	Male	GRADE 3 HEMORRHOIDS
267	18925	BHIMANNA MADAR	58	Male	FISSURE IN ANO
268	19077	RAMACHANDRAN	85	Male	NORMAL
269	112735	SHIVAMMA	55	Female	FISSURE IN ANO
270	54845	GAJANAND	41	Male	FISSURE IN ANO
271	19519	DUNDAMMA	38	Female	FISSURE IN ANO
272	122149	MAHABOOB	36	Male	NORMAL
273	17671	TUKARAM	52	Male	GRADE 3 HEMORRHOIDS
274	18474	MAKBULABI	70	Female	GRADE 3 HEMORRHOIDS

275	18606	MAHADEV HAGIDIVAL	35	Male	FISTULA IN ANO
276	19148	HARISH TEGGELI	39	Male	FISTULA IN ANO
277	18156	AKASH	18	Male	GRADE 1 HEMORRHOIDS
278	19143	DHAREPPA	24	Male	NORMAL
279	368098	LALBASHA	18	Male	FISSURE IN ANO
280	103932	SUNDARABAI	68	Female	GRADE 1 HEMORRHOIDS
281	17121	VINOD KUMAR	32	Male	FISSURE IN ANO
282	17356	YALLAPPA	45	Male	GRADE 2 HEMORRHOIDS
283	17590	BHIMRAY	56	Male	GRADE 2 HEMORRHOIDS
284	101660	HANAMANTHGOUDA	49	Male	NORMAL
285	120550	MEHABOOB	19	Male	FISSURE IN ANO
286	15225	RADHA	29	Female	FISSURE IN ANO
287	101350	ASHOK	59	Male	FISSURE IN ANO
288	15397	SANGEETA	39	Female	NORMAL
289	16401	SIDDAYYA	65	Male	ANAL POLYP
290	16818	MANJUNATH	70	Male	FISSURE IN ANO
291	16035	GANGAPPA	72	Male	GRADE 1 HEMORRHOIDS
292	16633	MANJULA	32	Female	NORMAL
293	178233	AMRUTHA	25	Female	FISSURE IN ANO
294	175800	SHRISHAIL MALI	46	Male	GRADE 1 HEMORRHOIDS
295	182097	GIRIMALLAYYA	40	Male	FISSURE IN ANO
296	183955	AMEENA	60	Female	GRADE 2 HEMORRHOIDS
297	287131	RAVI	42	Male	EXTERNAL HEMORRHOIDS
298	165085	SAVITA	35	Female	NORMAL
299	168343	SONABAI	55	Female	FISSURE IN ANO
300	169941	SAHANA PATIL	28	Female	FISTULA IN ANO
301	289923	SHRISHAIL	51	Male	FISSURE IN ANO
302	147724	NEELU	38	Male	GRADE 2 HEMORRHOIDS
303	148437	VISHAL SAVANT	21	Male	NORMAL
304	148437	DARSHAN	35	Male	ANAL POLYP
305	152970	SHRAVANI	23	Female	GRADE 1 HEMORRHOIDS
306	148659	SHEELA	25	Male	NORMAL
307	154412	YELLAPPA	63	Male	NORMAL
308	142429	VINOD	40	Male	GRADE 1 HEMORRHOIDS
309	156685	RAVICHANDRA	22	Male	NORMAL
310	156253	SHANTAPPA	37	Male	FISSURE IN ANO
311	214475	KALMESH UMADI	45	Male	GRADE 1 HEMORRHOIDS
312	214497	KARTHIK KOLI	33	Male	NORMAL
313	195055	LAXMAN	28	Male	FISSURE IN ANO
314	185525	RAVI	44	Male	FISSURE IN ANO
315	149261	GIRIMALLAPPA	62	Male	GRADE 3 HEMORRHOIDS
316	293610	VASUNDHARA	44	Female	GRADE 1 HEMORRHOIDS
317	8126	ROHIT	32	Male	NORMAL
318	21225	MAHADEVI NAIKODI	30	Female	GRADE 3 HEMORRHOIDS
319	45202	AARTI	26	Female	NORMAL
320	55058	MADHUKAR	29	Male	FISSURE IN ANO
321	2281	AABEDA MULLA	38	Female	NORMAL
322	215502	MANJULA	22	Female	FISTULA IN ANO
323	202906	SANTOSH	26	Male	FISSURE IN ANO
324	142825	SHAKEEL	40	Male	GRADE 2 HEMORRHOIDS
325	178473	USHA JATTI	18	Female	NORMAL
326	16649	NEELAKANT	56	Male	NORMAL
327	15350	SAMANGOUDA	48	Male	FISSURE IN ANO
328	129053	RAYANAGOUDA	51	Male	FISSURE IN ANO
329	106216	CHANDRASHEKAR	30	Male	NORMAL
330	107614	YANKAVVA	45	Female	GRADE 3 HEMORRHOIDS
331	58629	LAXMI	24	Female	GRADE 1 HEMORRHOIDS
332	69854	KAVITA HIREMATH	32	Female	FISTULA IN ANO
333	58275	SRINIVAS	58	Male	GRADE 2 HEMORRHOIDS
334	70132	HASHIMPEER	45	Male	GRADE 3 HEMORRHOIDS
335	83886	SAVITA	20	Female	NORMAL
336	302683	VARUN	39	Male	FISTULA IN ANO
337	159262	ROOPA SARWAD	45	Female	GRADE 1 HEMORRHOIDS
338	302676	SUBHASH	41	Male	NORMAL
339	295624	GANGA	37	Female	FISSURE IN ANO
340	6617	MAIBUB	48	Male	GRADE 2 HEMORRHOIDS
341	21313	HASINABI	40	Female	NORMAL
342	45776	ALISHA	35	Female	GRADE 1 HEMORRHOIDS
343	58280	GURULINGAPPA	55	Male	GRADE 2 HEMORRHOIDS
344	21588	PRASAD MOGALI	19	Male	NORMAL
345	70295	BASAPPA	29	Male	GRADE 2 HEMORRHOIDS

346	71045	KANTEVVA SHINDE	68	Female	NORMAL
347	82764	RASULBEE	54	Female	GRADE 3 HEMORRHOIDS
348	130229	DUNDU	28	Male	NORMAL
349	107248	GAYATHRI	22	Female	FISSURE IN ANO
350	82876	SHANKARGOUDA	36	Male	FISTULA IN ANO
351	2988	MEENAZ TAMADAR	18	Female	FISSURE IN ANO
352	215609	MEHBOOBI KALERI	50	Female	GRADE 1 HEMORRHOIDS
353	215707	POOJA	40	Female	NORMAL
354	179200	RAVI	40	Male	EXTERNAL HEMORRHOIDS
355	179157	DEVENDRA	32	Male	NORMAL
356	166627	YALLU	42	Male	FISSURE IN ANO
357	166884	MAHADEV ALGI	43	Male	NORMAL
358	153654	BASAVARAJ KUMBAR	49	Male	GRADE 2 HEMORRHOIDS
359	153602	KUTAPPA MOTAGI	60	Male	GRADE 1 HEMORRHOIDS
360	119073	KASHIBAI	50	Female	NORMAL
361	119162	MALLAPPA	65	Male	GRADE 1 HEMORRHOIDS
362	21256	MAHADEVI CHARAN	40	Female	NORMAL
363	302679	RAZAQ	40	Male	NORMAL
364	293659	VANDANNA	42	Female	FISTULA IN ANO
365	8017	KAJUBI	53	Female	GRADE 1 HEMORRHOIDS
366	214485	REVANAPPA	60	Male	GRADE 3 HEMORRHOIDS
367	214512	SHEVALEELA	39	Female	NORMAL
368	293614	MALINI	50	Female	GRADE 1 HEMORRHOIDS
369	21271	HUSAIN SOLAPUR	33	Male	NORMAL
370	130287	JAGUU	32	Male	GRADE 1 HEMORRHOIDS
371	21288	MOHD MUJAHID	74	Male	FISSURE IN ANO
372	93715	NAJAMA	48	Female	FISSURE IN ANO
373	107633	YAMANAMMA	45	Female	NORMAL
374	107131	HAFEEZA B	40	Female	GRADE 2 HEMORRHOIDS
375	166629	YALLU	46	Male	NORMAL
376	166431	MURTAJSAB	59	Male	GRADE 2 HEMORRHOIDS
377	178484	UMA KANNUR	44	Female	GRADE 2 HEMORRHOIDS
378	215594	ANSARI	22	Male	GRADE 2 HEMORRHOIDS
379	10210	HUYALAL NAIR	60	Male	NORMAL
380	93666	BASHEER	25	Male	GRADE 1 HEMORRHOIDS
381	70391	KAREEM	41	Male	EXTERNAL HEMORRHOIDS
382	70279	VEERESH	35	Male	GRADE 2 HEMORRHOIDS
383	90665	ANIL JIJAGANI	35	Male	GRADE 3 HEMORRHOIDS
384	202	GOUDAPPA PUJARI	45	Male	NORMAL