

**A STUDY ON SPHINCTER PRESERVING PROCEDURE LIFT
(LIGATION OF INTERSPHINCTERIC FISTULA TRACT) IN
PATIENTS WITH FISTULA IN ANO IN GOVT. STANLEY MEDICAL
COLLEGE**

A DISSERTATION SUBMITTED TO
THE TAMILNADU DR.MGR MEDICAL UNIVERSITY

In partial fulfillment of the regulations for the award of the

Degree of M.S (GENERAL SURGERY)

BRANCH-1



DEPARTMENT OF GENERAL SURGERY
STANLEY MEDICAL COLLEGE AND HOSPITAL
THE TAMILNADU DR.MGR MEDICAL UNIVERSITY, CHENNAI-
TAMILNADU

MAY 2020

CERTIFICATE

This is to certify that, the dissertation “A STUDY ON SPHINCTER PRESERVING PROCEDURE LIFT (LIGATION OF INTERSPHINCTERIC FISTULA TRACT) IN PATIENTS WITH FISTULA IN ANO IN GOVT. STANLEY MEDICAL COLLEGE” is a bonafide record of work done by **Dr. A. SRINITHYA**, in the Department of General Surgery, Stanley Medical College, Chennai, during her Post Graduate Course from 2017-2020. This is submitted in partial fulfillment for the award of **M.S. DEGREE EXAMINATION- BRANCH I (GENERAL SURGERY)** to be held in May 2020 under **the Tamilnadu DR.M.G.R. Medical University, Chennai.**

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DECLARATION

I Dr. **A. SRINITHYA** solemnly declare that this dissertation titled “**A STUDY ON SPHINCTER PRESERVING PROCEDURE LIFT (LIGATION OF INTERSPHINCTERIC FISTULA TRACT) IN PATIENTS WITH FISTULA IN ANO IN GOVT. STANLEY MEDICAL COLLEGE**”, is a bonafide work done by me in the department of general surgery, Govt. Stanley Medical College and Hospital, Chennai, under the supervision of our Head of the department **Prof. Dr. T. SIVAKUMAR M.S.**, and our unit chief **Prof. Dr. R. MANIVANNAN M.S.**

I also affirm this work was not submitted by myself or any others for any award, degree to any other University either in India or elsewhere. This dissertation is submitted to The Tamilnadu Dr MGR Medical university, Chennai in partial fulfillment of the university regulations for the award of M.S.,degree (General Surgery), branch – 1 examination to be held in May 2020.

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I am extremely thankful to my patients who consented and participated to make this study possible.

PLAGIARISM CERTIFICATE



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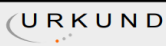
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BRANCH-1

DEPARTMENT OF GENERAL SURGERY STANLEY MEDICAL COLLEGE AND HOSPITAL THE TAMILNADU DR.MGR MEDICAL UNIVERSITY, CHENNAI- TAMILNADU MAY 2020

CERTIFICATE BY GUIDE

This is to certify that this dissertation work titled “**A STUDY ON SPHINCTER PRESERVING PROCEDURE LIFT (LIGATION OF INTERSPHINCTERIC FISTULA TRACT) IN PATIENTS WITH FISTULA IN ANO IN GOVT. STANLEY MEDICAL COLLEGE**” of the candidate **Dr. A. SRINITHYA** with registration number **221711068** for the award of **M.S General Surgery degree**. I personally verified the urkund.com website for the purpose of plagiarism check. I found that the uploaded thesis file contains from introduction to conclusion pages and result shows **10%** of plagiarism in the dissertation.

Prof. Dr. R. MANIVANNAN M.S.,
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ETHICAL COMMITTEE CERTIFICATE



GOVERNMENT STANLEY MEDICAL COLLEGE & HOSPITAL, CHENNAI -01 INSTITUTIONAL ETHICS COMMITTEE

TITLE OF THE WORK : A STUDY ON SPHINCTER PRESERVING PROCEDURE LIFT (LIGATION OF INTERSPHINCTERIC FISTULA TRACT) IN PATIENTS WITH FISTULA IN ANO IN GOVT. STANLEY MEDICAL COLLEGE.

PRINCIPAL INVESTIGATOR : DR. A. SRINITHYA
DESIGNATION : PG IN MS GENERAL SURGERY
DEPARTMENT : DEPARTMENT OF GENERAL SURGERY,
GOVT. STANLEY MEDICAL COLLEGE.

The request for an approval from the Institutional Ethical Committee (IEC) was considered on the IEC meeting held on 15.09.2018 at the Council Hall, Stanley Medical College, Chennai-1 at 10am.

The members of the Committee, the secretary and the Chairman are pleased to approve the proposed work mentioned above, submitted by the principal investigator.

The Principal investigator and their team are directed to adhere to the guidelines given below:

1. You should inform the IEC in case of changes in study procedure, site investigator investigation or guide or any other changes.
2. You should not deviate from the area of the work for which you applied for ethical clearance.
3. You should inform the IEC immediately, in case of any adverse events or serious adverse reaction.
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5. You should complete the work within the specified period and if any extension of time is required, you should apply for permission again and do the work.
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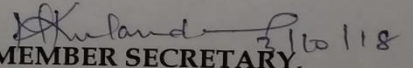

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IEC, SMC, CHENNAI

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INTRODUCTION:

A fistula-in-ano is a granulation tissue lined tract, which connects an opening on the perianal skin (external) to another opening inside the anal canal or the lower rectum (internal). It is the chronic phase of anorectal infection. Symptoms include chronic purulent discharge and pain associated with abscess re-accumulation with intermittent spontaneous decompression. Internal openings are usually single in number while external openings can be single or multiple. Fistulas have been described since the last 2000 years, being described by Hippocrates as early as 430 BC, with the application of seton being his recommended treatment. The late 19th and early 20th centuries saw substantial research and the treatment options being developed in this subject by the likes of Milligan–Morgan, and Goodsall. Sir James Parks introduced his classification system in 1976, which is still in use.

Fistula-in-ano can be broadly classified into simple and complex fistula. Simple fistulae can be broadly classified into subcutaneous and submuscular (intersphincteric and low transsphincteric). Complex fistulae include those which are high transsphincteric, suprasphincteric, extrasphincteric, multiple tracts, and recurrent. Goodsall's rule states that if the perianal skin opening is posterior to the transverse anal line, the fistulous tract will open into the anal canal in the midline posteriorly, sometimes taking a curvilinear course. A perianal skin opening anterior to the transverse anal line is usually associated with a radial fistulous tract.

Spontaneous healing of fistula is rare. Surgical therapies are required to achieve a cure which include fistulotomy, fistulectomy, excision of tract with primary closure and staged operations which help to reduce recurrences. Recent advances being fibrin glue, LIFT and VAAFT procedures. Complications of fistula surgery are myriad and include faecal soiling, mucus discharge, varying degrees of incontinence and recurrent abscess and fistula.

In this study, an attempt is made to find the effectiveness of LIFT procedure for fistula in ano in terms of postoperative recovery, complications and recurrence.

AIMS AND OBJECTIVES

The purpose of the study is

- To analyse the effectiveness of LIFT procedure in treating fistula in ano
- To find out the per operative difficulties in doing LIFT technique
- To find the postoperative outcome in terms of recovery in patients who underwent LIFT
- To find the long-term complications associated with the LIFT procedure

METHODOLOGY

Study group

- Patients with fistula in Ano who are admitted in Department of General Surgery, Govt. Stanley Medical College and Hospital, Chennai

Duration

- 9 months (January 2019 - September 2019)

Sample size:

- Group A-70
- Group B- control group- 70

STUDY DESIGN

- Non-randomised control trial (single blind open label control trial)

PATIENT SELECTION:

Inclusion criteria:

- Patients consenting for the procedure.
- All patients (both male and female) with more than 18 years of age.

- Patients with no comorbidities.
- Patients with intersphincteric fistula in ano
- Patients having fistula due to Inflammatory Bowel Disease, TB and malignancy.

Exclusion criteria

- Patients who denies consent
- All patients (both male and female) less than 18 years of age
- Patients with comorbidities and immuno-compromised patients
- Patients undergoing treatments like chemotherapy, immunotherapy and steroids.
- Patients with Inflammatory Bowel Disease, malignancy and tuberculosis
- Patients having recurrent fistula in ano
- Patients having complex fistula in ano
- Patients having perianal fistula due to perianal injuries

METHODOLOGY

- Ethical committee clearance
- Written informed consent from all subjects before enrolment in the study
- Patients selected according to inclusion and exclusion criteria
- Patients will be divided into group A and group B (control group) randomly
- Detailed history and physical examination of patients will be done
- Appropriate investigations and imaging studies will be done
- Pre-operatively patients will be explained about the procedure in detail
- Preoperative bowel preparation with enema will be done
- LIFT procedure will be done for all patients in group A
- Fistulectomy will be done for all patients in group B
- Post operatively patients will be watched for postoperative recovery
- Patients will be followed up for long term complications
- Factors compared:

Duration of surgery/ Per operative complications/Postoperative complications/

Length of hospital stay/Readmission/Recurrence

REVIEW OF LITERATURE

FISTULA IN ANO

HISTORICAL BACKGROUND

Fistula in ano is an abnormal tract or cavity lined by granulation tissue, that connects the Perianal skin to anal canal superficially or anorectum and rectum deeply. Differential diagnosis includes Hidradenitis Suppurativa, infected Inclusion cysts, Pilonidal sinus or Bartholin gland abscesses in females.

They often arise due to infection resulting in anorectal abscess which burst spontaneously and forms a fistula. Symptoms include minor discomfort, pus discharge, bleeding, pain and swelling.

Historical background to Fistula in ano date backs to the *Hippocrates* period (430 BC) who was the one who referred surgical therapy for fistula and practised seton placement.

John Ardene, in 1376 described fistulotomy and seton placement.

Louis XIV, in 18th century, was treated for Fistula in Ano.

Fredrick Salmon, 1835, also has a contribution for the treatment of fistula in ano.

ANATOMY OF ANO RECTUM

The alimentary tract terminates at the anus, which provides continence of flatus and feces. It is useful to consider the anus and surrounding structures as a single unit, the anorectum which includes the perianal skin, the anal canal, the anal sphincters, and the

distal rectum. The three main anatomic points of reference are the anal verge, the dentate line, and the anorectal ring.

Anal canal is 4cm in length and extension is from the level where the rectum passes through the pelvic diaphragm to the anal verge.

The muscular junction between rectum and anal canal is marked by the anorectal ring.

The anorectal ring is formed by the joining of the puborectalis muscle, the deep external sphincter, conjoined longitudinal muscle and the highest part of the internal sphincter.

The distal external boundary of the anal canal is the anal verge, which is also the junction between the anal and perianal skin. Its union of the embryonic ectoderm with the endodermal gut resides approximately 1.0–1.5 cm above the anal verge. In a transitional zone of 6–12 mm in length, the columnar epithelium of the rectum changes to cuboidal epithelium that joins the squamous epithelium at the dentate line.

The cephalad border of the anal canal is a true mucocutaneous junction, the dentate line.

The dentate line marks the embryonic anal membrane site representing the site of fusion of proctodaeum and post-allantoic gut. It also forms the site of crypts of Morgagni which are smaller pockets in between inferior extremities of columns of Morgagni through which deeper anal glands communicate with the anal lumen by anal ducts. Lining of the canal above dentate line is columnar and below is squamous epithelium. Anal epithelium (anoderm) is devoid of the hair follicles, sebaceous glands, and apocrine glands that are present in the perianal skin. This helps in distinguishing between hidradenitis (inflammation of the apocrine glands in the perianal skin) and cryptoglandular anal disease. Mucosa above dentate line is uneven surface and forms the anal cushions in left lateral, right posterior and right anterior positions. Subepithelial space is closely related

to deeper structures within the anal sphincter complex which includes internal sphincter, longitudinal muscle layer and external sphincter. Anal canal has an autonomic nerve supply above the dentate line, whereas below nerve supply is by pudendal nerve. Venous drainage above this line is by inferior mesenteric vein and portal circulation and below by systemic circulation.

SPHINCTER COMPLEX:

Internal sphincter: It is a downward extension of circular, non-striated muscles of rectum and is 2-5 mm thick and has autonomic nerve supply and is in a tonic state of contraction. This extends from the area where rectum passes through the pelvic diaphragm upto the anal orifice.

External sphincter: Composed of striated voluntary muscle which surrounds the internal sphincter and is continuous with the levator muscle. Forms the bulk of the anal sphincter complex. It is divided by lateral extensions from the longitudinal muscle layer into deep, superficial and subcutaneous portions. Posteriorly some fibres are attached to coccyx and anteriorly they fuse with the perineal muscles. Superior part fuses with the puborectalis muscle which maintains the anorectal angle and thus maintains the continence. It is innervated by the pudendal nerve.

The sphincters are separated by the anal intermuscular septum which passes around the inferior border of internal sphincter. The *intersphincteric plane* is a potential space containing loose areolar tissue between the external muscle laterally and the longitudinal muscle medially. This contains the intersphincteric anal glands and forms the route for the spread of pus.

Puborectalis Muscle: It forms the part of the funnel shaped muscular pelvic diaphragm and also it maintains the angle between the anal canal and rectum. It forms the important component in the continence mechanism. Nerve supply is from sacral somatic nerves.

Longitudinal Muscle: Direct continuation of the smooth muscle coat of the rectum. Upper part is formed by the striated muscle fibres originating from the medial components of pelvic floor. During defecation, its contraction widens the anal lumen, flattens the anal cushion, shortens the anal canal and everts the anal margin. Extensions from this muscle layer supports the sphincter complex.

BLOOD SUPPLY OF ANAL CANAL:

Arterial supply: superior rectal artery, the terminal branch of the inferior mesenteric artery, descends to the upper rectum where it divides into lateral branches. Subsequent smaller divisions penetrate the rectal wall. The middle rectal arteries arise from the internal iliac arteries and supply the distal rectum and upper anal canal. The inferior rectal arteries, branches from the internal pudendal arteries, cross the ischioanal fossae to supply the anal sphincters.

Venous drainage: Internal rectal venous plexus lies in the submucosal plane. There are two paths for venous blood return from the anorectum. Above the dentate line, venous blood flows into the portal system through the superior rectal vein and tributaries of inferior mesenteric vein and middle rectal vein. Below the dentate line, the external hemorrhoidal plexus drains into the internal iliac vein through the middle rectal vein or through the pudendal vein, which receives blood from the inferior rectal vein. Forms

main site of portosystemic anastomosis, mainly at 3 o'clock, 7 o'clock and 11 o'clock position, saccular dilatations of which forms the primary haemorrhoids.

Lymphatic drainage is to inguinal lymph nodes

ANAL GLANDS:

They are found in the submucosa and intersphincteric space. Usually 0-10 in number. They drain via ducts into the anal sinuses at the level of dentate line. They secrete mucin and lubricates anal canal. Their importance lies in the fact that they form the potential source of anal sepsis leading to perianal abscess, ischiorectal abscess, pelvic abscess and fistula in ano explained by the CRYPTOGLANDULAR HYPOTHESIS of Fistula in Ano.

PHYSIOLOGICAL MECHANISM OF CONTINENCE:

Rectal capacitance and compliance are essential. The rectum normally holds between 200 and 250 mL. It distends readily with filling and has limited muscular activity intrinsically. The internal anal sphincter provides 80% of the resting anal sphincter pressure that provides the resistance to gas and mucus at the anal canal. The sampling reflex is a function of rectal distension causing internal anal sphincter relaxation via an intramural reflex to the internal sphincter. The rectal contents can then be sensed in the sensory nerve-rich transitional zone and anoderm to discriminate the true nature of the rectal contents. This sampling reflex occurs frequently throughout the day to provide

continence and also serves to initiate the defecation process. The voluntary *external sphincter muscle* contraction in response to this sampling reflex provides the anal active component of fecal continence. The subconscious voluntary contraction of the external sphincter, puborectalis, and pelvic floor muscles provide complete control of rectal contents. The pelvic floor muscles maintain continual activity, even during sleep, to provide fecal continence. This also seems to be a learned response because infants and children require 1–2 years to achieve control.

Fecal incontinence is defined as the inability to control the passage of gas, liquid, or stool until a socially acceptable time or place for evacuation. The frequency of incontinence may vary, and the loss of control may involve solid stool, liquid stool, or gas only. Frequent episodes of incontinence to gas alone may be as incapacitating as infrequent episodes of solid stool. Evaluation of fecal incontinence should include assessment of severity as well as impact of disease. The American Society of Colon and Rectal Surgeons has validated a fecal incontinence severity index and a fecal incontinence quality-of-life index to help standardize the assessment of fecal incontinence.

PELVIC FLOOR:

The pelvic floor is formed by pelvic diaphragm, Perineal membrane and perineal body.

Pelvic diaphragm:

The muscles of pelvic floor are called as pelvic diaphragm which includes

1. Levator Ani muscle:

Maintain a constant state of contraction and supports the weight of the abdominopelvic contents against intra- abdominal forces

Levator ani Consists-

- Pubococcygeous
 - Pubovaginalis
 - Puborectalis
 - Puboanalis
 - iliococcygeous
2. Coccygeous muscle: Forms the primary support
 3. Piriformis
 4. Obturator internus
 5. Superior and inferior investing layers of fascia

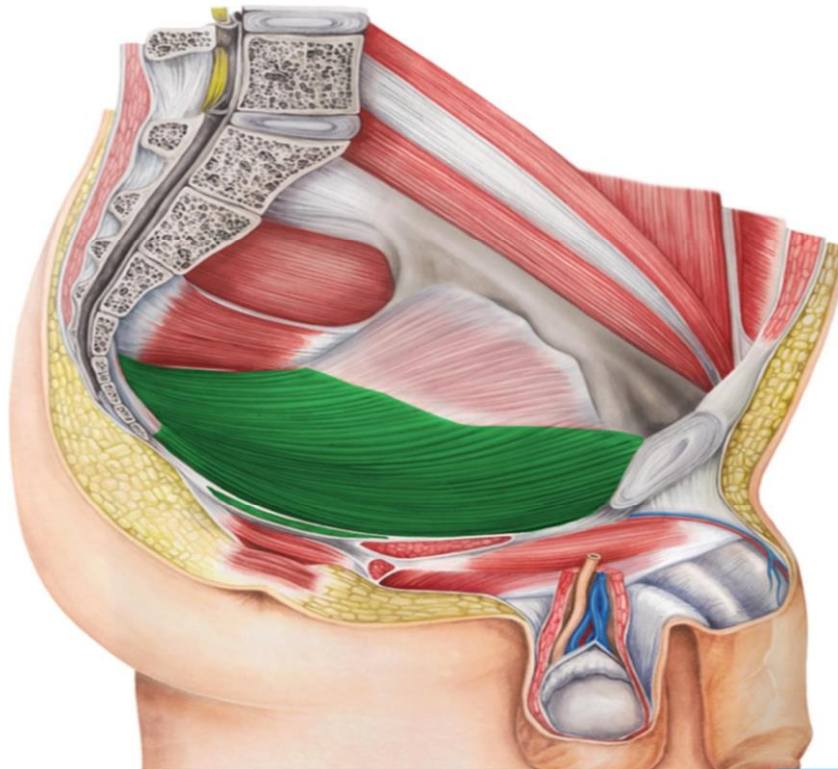
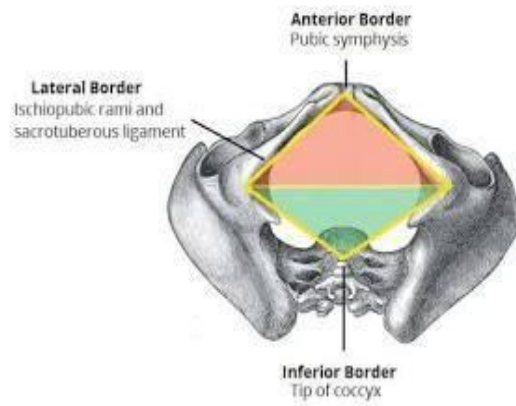


Figure 1 pelvic floor

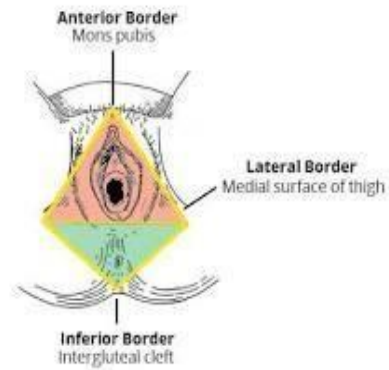
PERINEUM:

- Diamond shaped
- Bounded deeply by the inferior fascia of the pelvic diaphragm and superficially by the skin
- Boundaries: anteriorly by pubic symphysis, anterolaterally by ischiopubic rami and ischial tuberosities, posteriorly by coccyx and posterolaterally by sacrotuberous ligaments

Anatomical Borders:



Surface Borders:



- Arbitrary line joining the ischial tuberosities divides the perineum into anterior urogenital triangle and a posterior or anal triangle

Anterior Or Urogenital Traingle:

- Contains external genitalia and formed by
 - Bulbocavernosus in females and bulbospongiosus in males
 - Ischiocavernosus
 - superficial transverse perineal
 - External anal sphincter
- Superficial transverse perineal muscle forms the base
- Further divided into a superficial and deep pouch or space by the perineal membrane

Posterior Or Anal Triangle:

- Contains ischioanal fossa, anal canal, anal sphincter complex, internal pudendal vessels and pudendal nerve
- Bounded by the fascia over levator ani muscles
- Pudendal canal or Alcock's canal lies here

Perineal Body:

Fibromuscular structure between vagina/testicles and the anus. Known as the central tendon of the pelvis as many structures of pelvic floor intersect with the perineum here.

Urogenital triangle

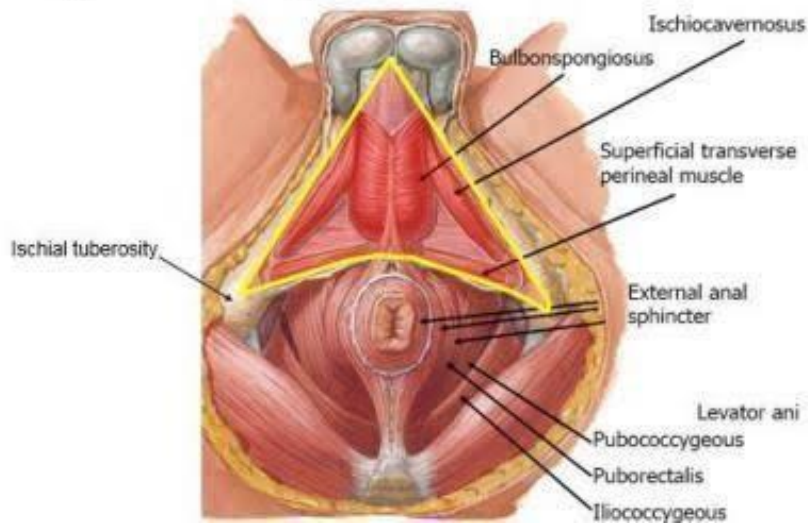
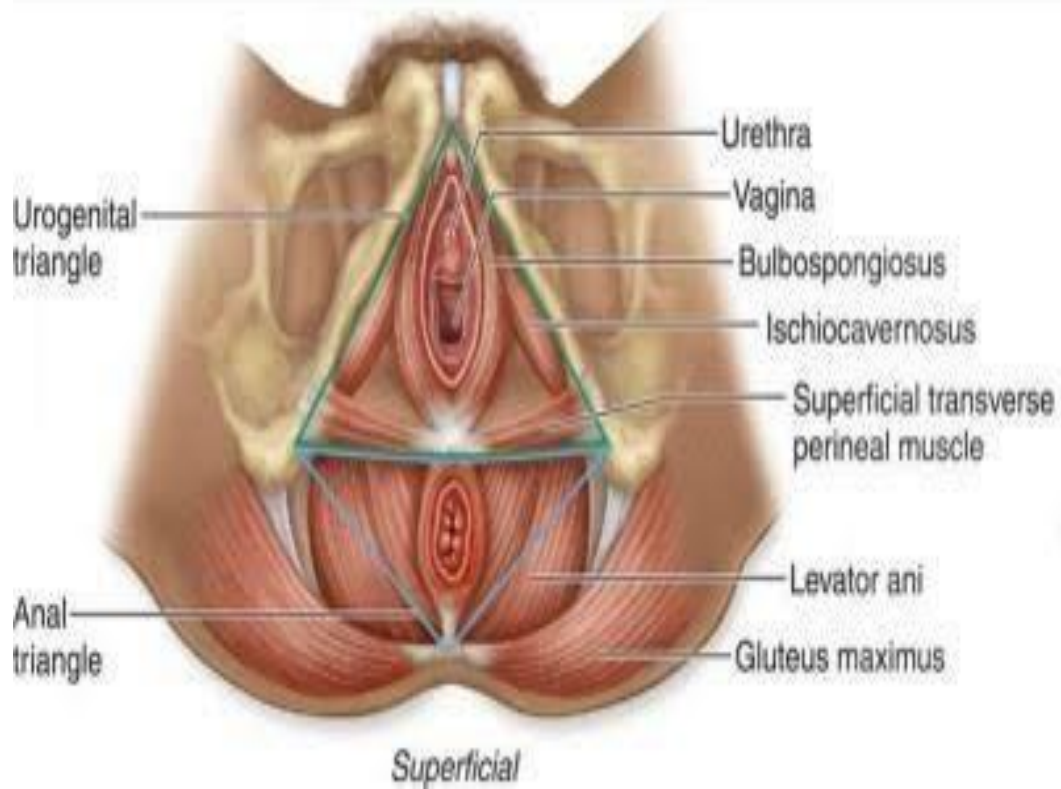
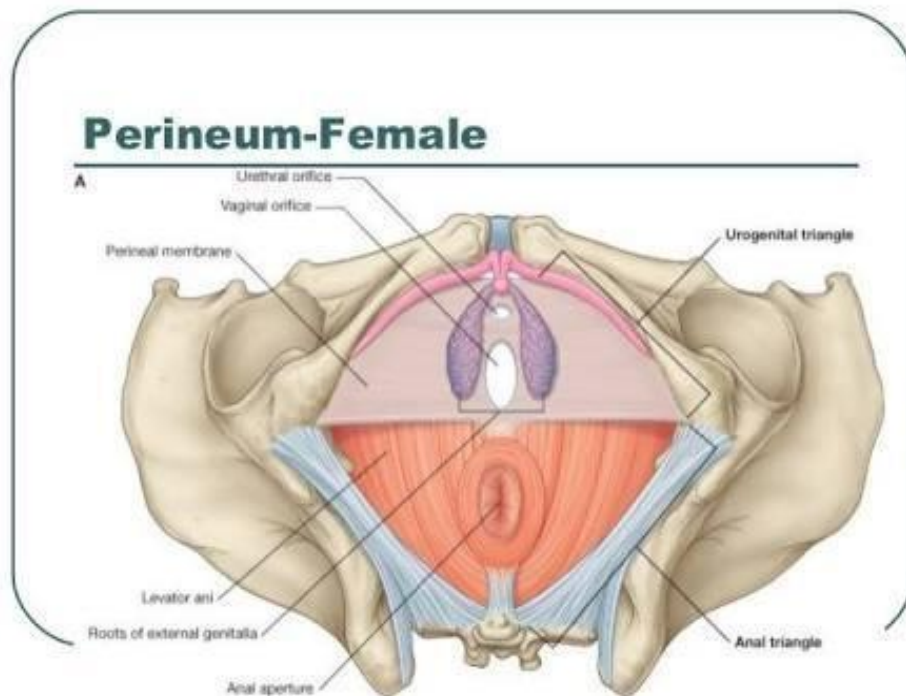


Figure 2urogenital triangle



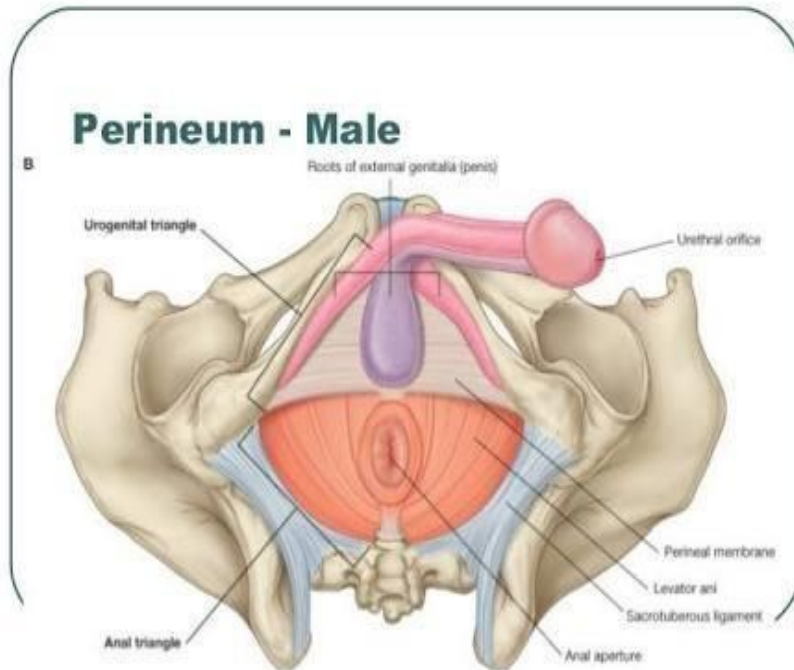
FEMALE UROGENITAL TRIANGLE

It includes Labia Majora , Mons Pubis , Clitoris , Labia Minora , Vaginal and Urethral orifices.



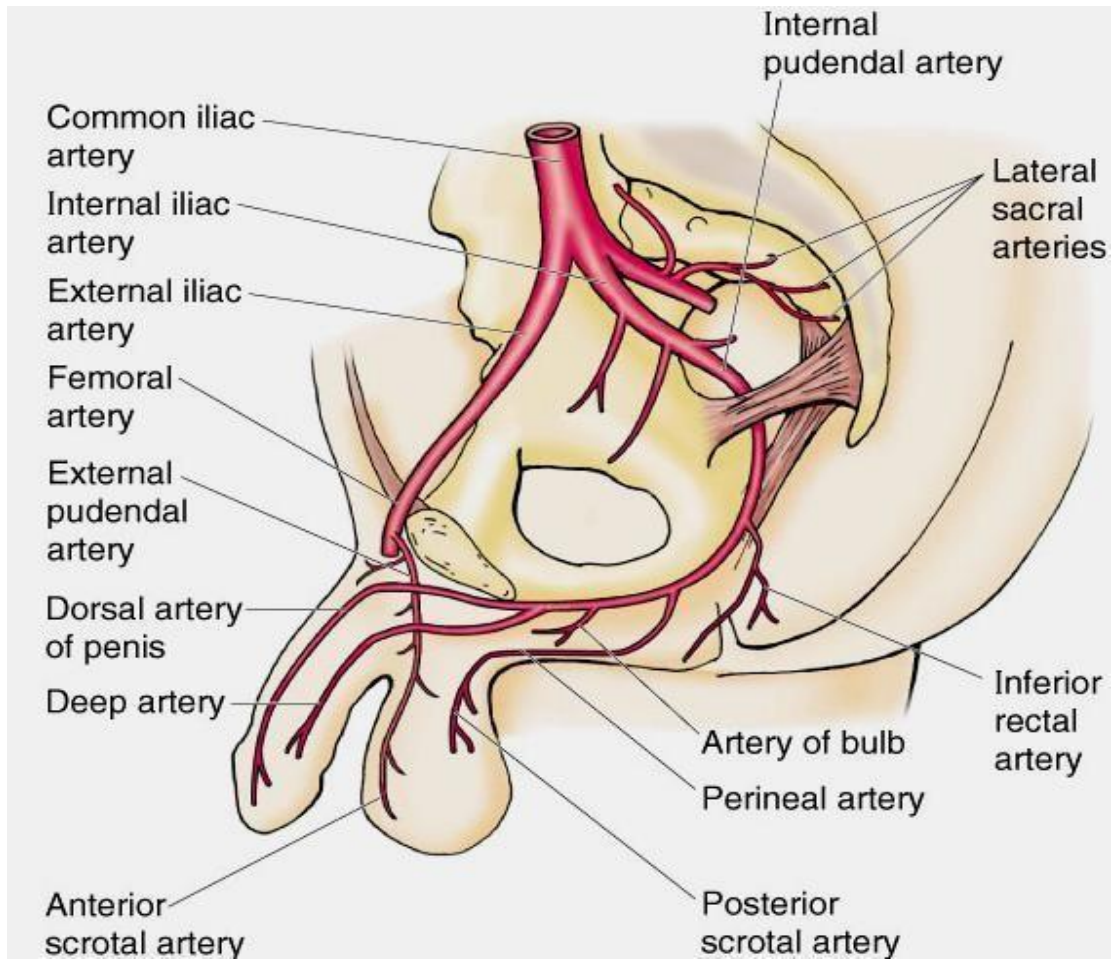
MALE UROGENITAL TRIANGLE

It has the Bulb of Penis and Scrotum



PELVIC FLOOR VASCULAR SUPPLY:

Internal Pudendal Artery, branches of Internal Iliac Artery, branches of Internal Pudendal Artery forms the arterial supply which mainly supplies Scrotum, Labia, Perineal body and Transverse Perinei muscles.



PELVIC FLOOR INNERVATION:

Pelvic diaphragm muscles are supplied by sacral nerve roots: S2-S5.

The perineal or inferior surface is supplied by pudendal nerve branches.

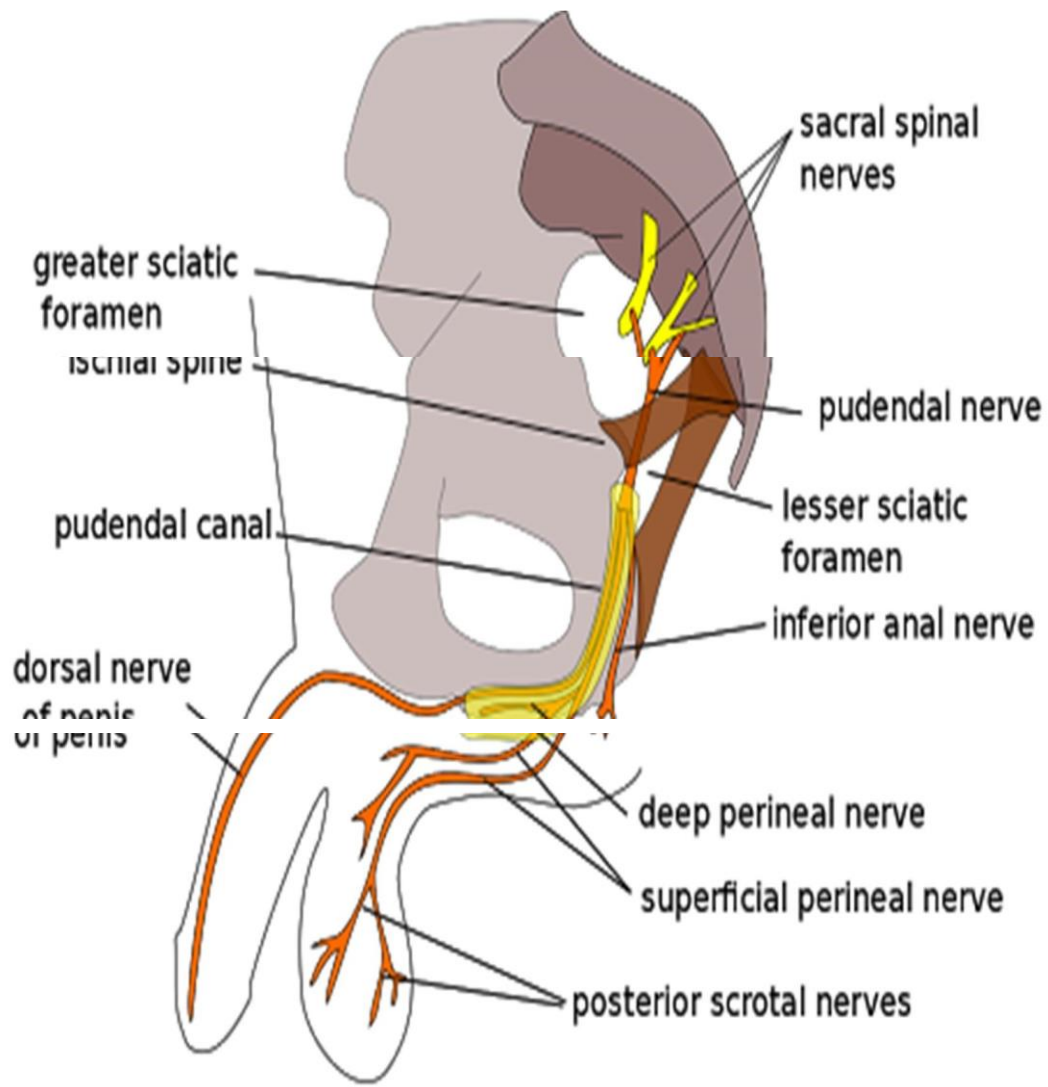


Figure 3 nerve supply of pelvic floor

EPIDEMIOLOGY:

Fistulas are more common in males than females. The factors behind this are unknown or non-specific.

The overall incidence reported about 9 cases per 100000 population in western population.

Affected population are most commonly in their third, fourth and fifth decades of life.

ETIOLOGY

Fistula in Ano can be Cryptoglandular (90%) or non-cryptoglandular (10%)

CRYPTOGLANDULAR HYPOTHESIS:

The anal glands empty into the crypts of Morgagni lying proximal to the anal valves. These glands secrete mucus and forms the major source of infection which further leads to intersphincteric abscess due to blockage of draining duct by infected debris. This abscess may resolve spontaneously or progress to an acute anorectal abscess which is treated by incision and drainage. Even after treatment, the source of infection persists in the intersphincteric space leading to formation of Fistula in Ano. Recurrent infections can lead to formation of extensions or secondary tracts. These extensions can be intersphincteric, ischioanal, supralevator (para-rectal) or horse shoe shaped. The ischioanal fossa is the commonest site for extension.

NON-CRYPTOGLANDULAR CAUSES:

Tuberculosis, malignancy, inflammatory bowel disease- crohn's disease and ulcerative colitis, lymphangioma venereum, hidradenitis suppurativa and trauma are the other causes for Fistula in Ano.

GOODSALL'S (1900) RULE

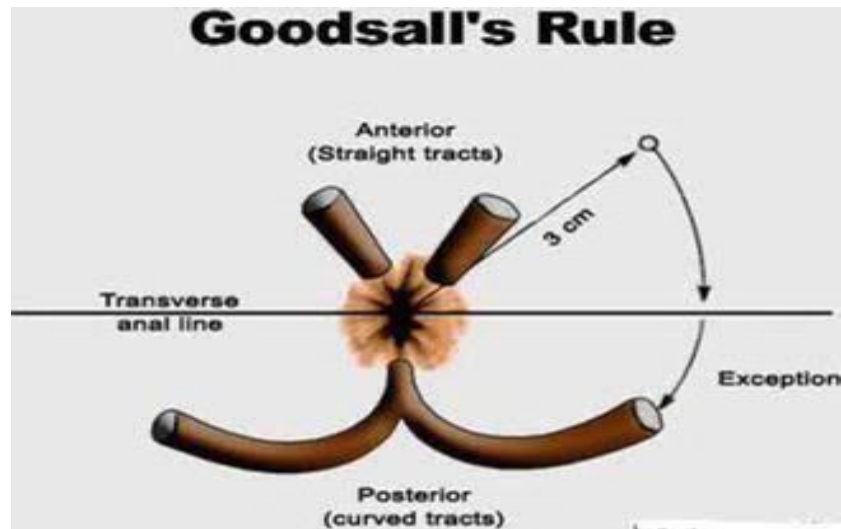
The Goodsall rule states that

if the anus is bisected by a line in the frontal plane,

- an external opening anterior to the line (within 2 cm of the anal verge) will connect to an internal opening by a short, direct fistula tract.
- if the external opening is located posterior to this imaginary line or anteriorly but outside 2 cm from the anal verge, the fistula tract follows a curved course to the crypt in the posterior midline. They may have multiple external openings all connected to a single opening.

Exceptions are external openings lying more than 3 cm from the anal verge. [7,8]

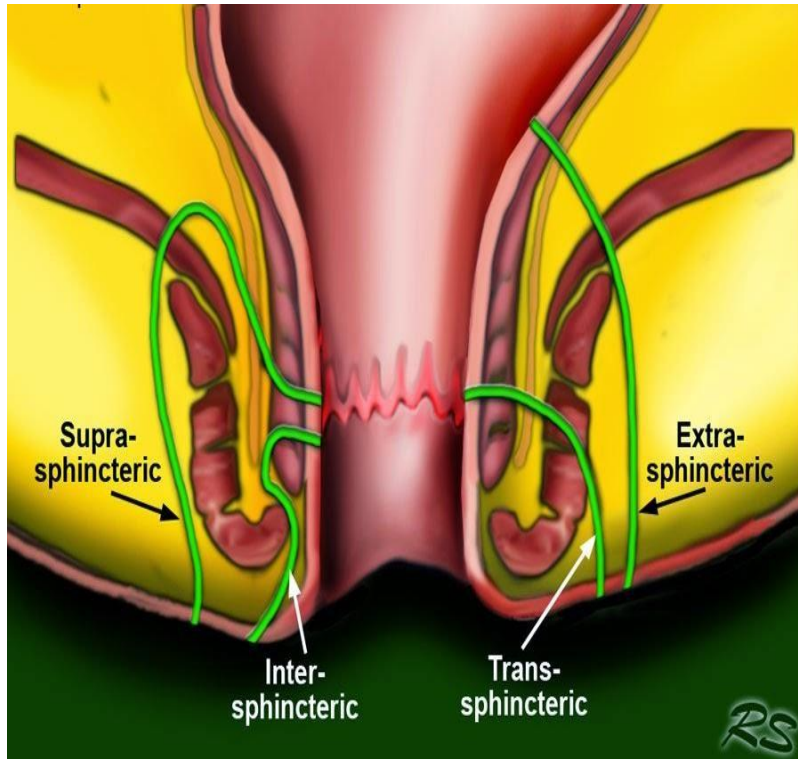
An external opening located more than 2 cm from the anal verge anterior to the imaginary bisecting line connects to an internal opening in the posterior midline. Because of its shape, this fistula is usually called a *horseshoe fistula*. Horseshoe fistulas usually have an internal opening in the posterior midline of the anus and may extend anteriorly and laterally to both ischioanal spaces by way of the deep space. The posterior opening is incised into the postanal space to deal with the primary cause. The anterior extensions of the horseshoe tracts then can be drained by a secondary opening, avoiding a long skin incision that would unroof the entire tract.



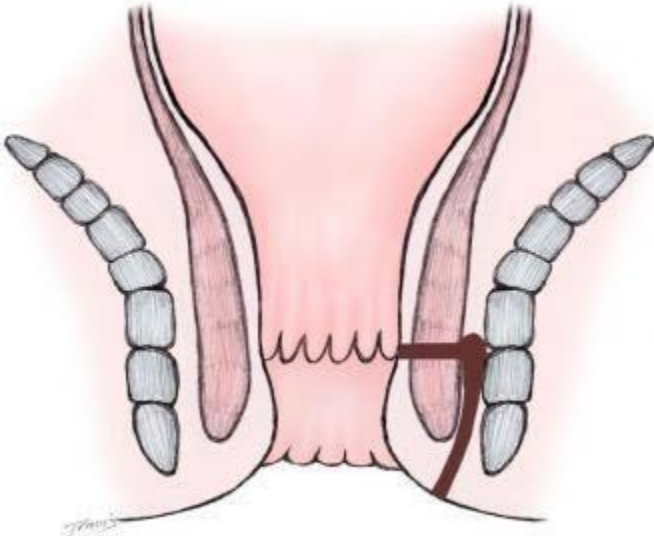
CLASSIFICATIONS OF FISTULA IN ANO:

I. Parks classification (1976) – 4 types

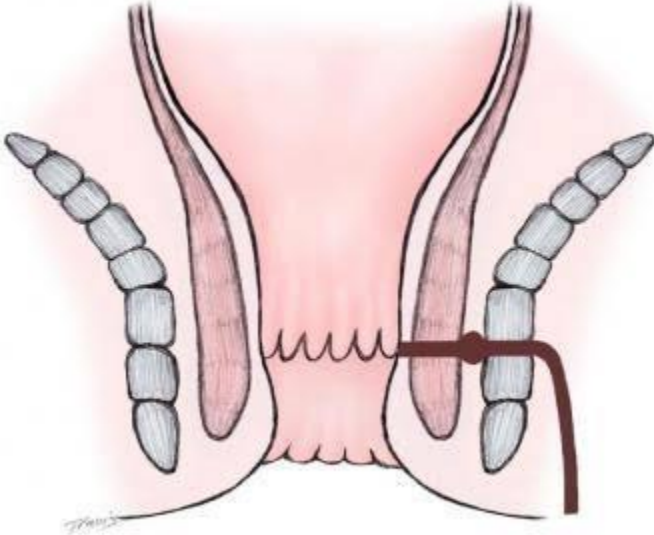
- Intersphincteric- commonest- 45%
- Transsphincteric -40%
- Suprasphincteric / Supralelevator- 4%
- Extrasphincteric- 1%



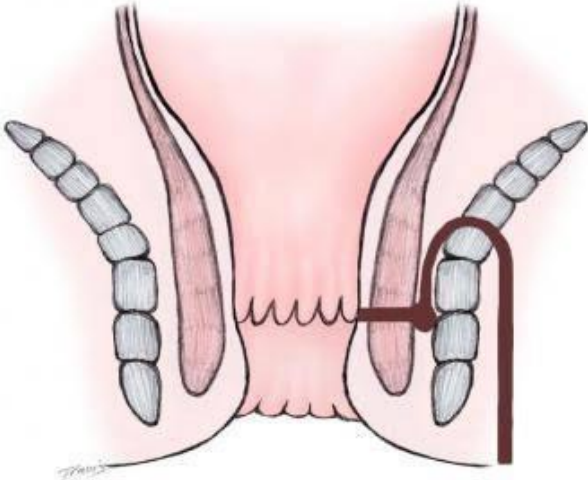
INTERSPHINCTERIC FISTULA



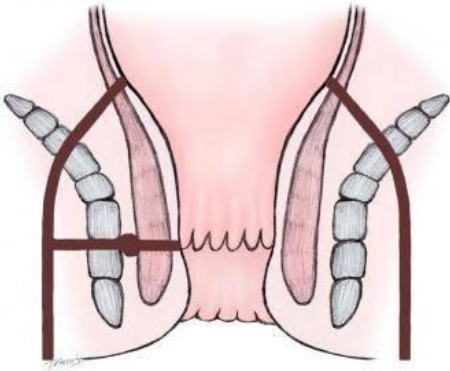
TRANS-SPHINCTERIC FISTULA



SUPRASPHINCTERIC FISTULA



EXTRASPINCTERIC FISTULA



II. STANDARD (MILLIGAN MORGAN- 1934; Goligher-1975)

- Subcutaneous- commonest
- Low anal- common
- Submucous
- High Anal
- Pelvi rectal

III. Fistulas can be

Low level fistulas: opens below internal anorectal ring

High level fistulas: opens into the anal canal or above the anorectal ring

IV. Fistulas can be

- Simple fistula- without extensions
- Complex fistula- with extensions. Complex fistulas include the tract crosses >50% of the external sphincter , anterior fistula in females, fistula with multiple tracts, recurrent fistulas, fistula in patients having pre-existing incontinence and fistulas associated with Crohn's disease.

V. They can also be with

- Single opening
- Multiple external openings

VI. St. James university hospital classification classifies fistula based on MRI findings. It includes five grades.

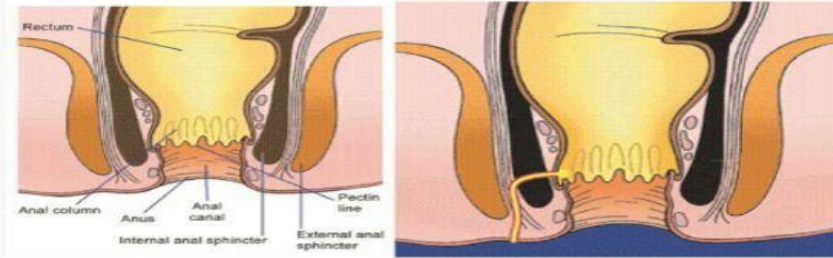
GRADE 1 Simple linear Intersphincteric fistula.

GRADE 2 Intersphincteric fistula associated with abscess or secondary tracts.

GRADE 3 Transsphincteric fistula.

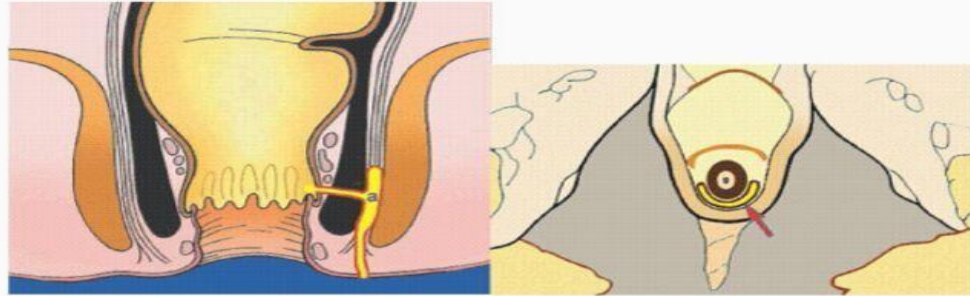
GRADE 4 Transsphincteric fistula associated with abscess or secondary tracts.

GRADE 5 Supralevator and Transelevator extension

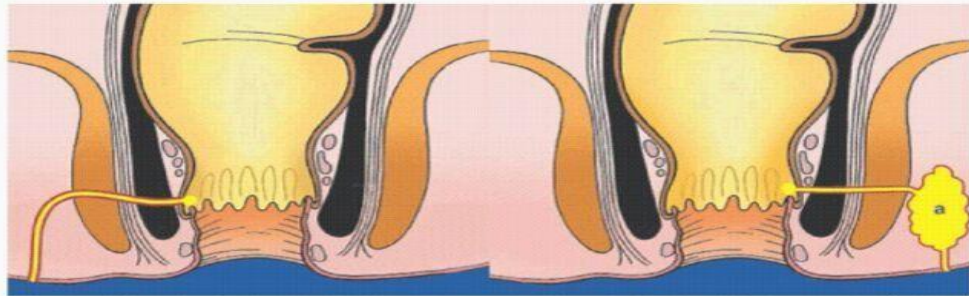


A-Normal anatomy

B-Intersphincteric (Grade I)

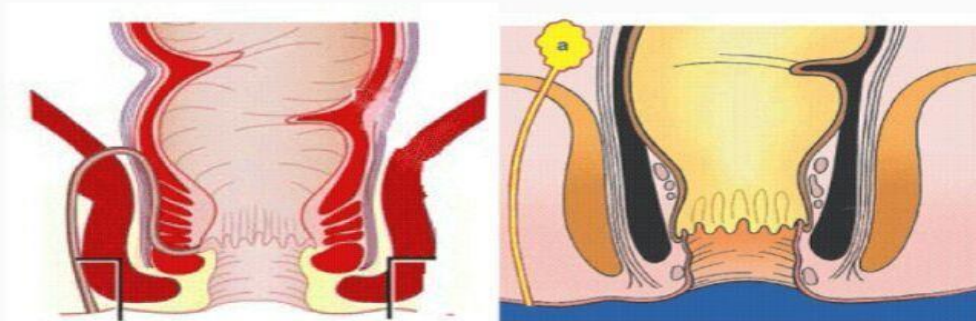


C-Intersphincteric with abscess formation (Grade II) D-Intersphincteric horseshoe (Grade II)



E-Trans-sphincteric fistula (Grade III)

F-Trans-Sphincteric fistula with abscess (Grade IV)



G-Supra-sphincteric fistula (Grade V)

H-Extra-sphincteric (Grade V)

CLINICAL FEATURES:

Patient **complaints** of

- Seropurulent discharge
- Perianal pain
- One or more external opening with induration
- Bleeding

On **clinical examination**

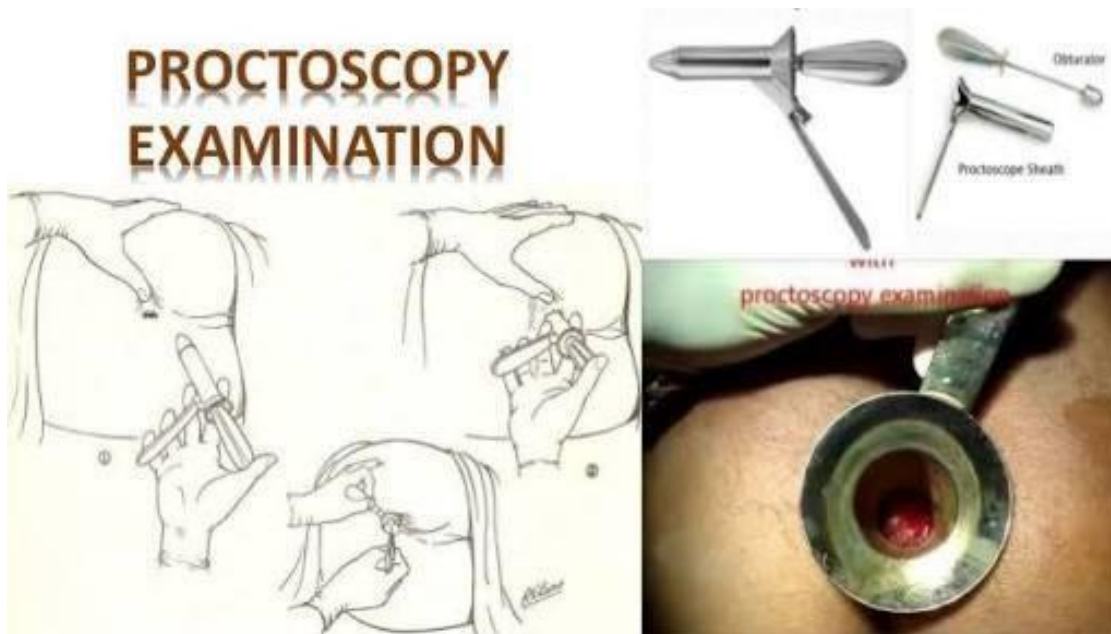
- Per rectal examination- to find out internal opening and to rule out other pathologies like haemorrhoids, stricture, etc.,

- Digital rectal examination:

With an adequately lubricated index finger, the soft tissues around the anus are palpated for induration, tenderness and subcutaneous lesions. The index finger is then introduced gently into the anal canal along the posterior aspect with finger pointing towards the umbilicus. Internal opening will be felt as an induration. On Withdrawal, the examining finger is inspected for the presence of mucus, blood or pus and to identify stool colour.

- Proctoscopic Examination:
 - Used for detailed inspection of the distal rectum and anal canal.

- EXAMINATION UNDER ANAESTHESIA
 - Detailed examination to rule out other pathologies and also to identify high lying internal opening
- PROCTOSIGMOIDOSCOPY/ COLONOSCOPY
 - To look for other bowel pathologies like Crohn's, Ulcerative colitis, Intestinal Tuberculosis, Colonic malignancy all of which can present as a Fistula in ano
- Anal Manometry:
 - The sphincter mechanism provides the ultimate barrier to leakage and its integrity can be assessed objectively. Perineal position and degree of descent on straining (markers of pelvic floor and pudendal nerve function) can be quantified. Functional anal canal length, resting tone (reflection of internal sphincter activity) and squeeze increment (reflection of external sphincter activity) can also be measured by simple manometric techniques.



DIFFERENTIAL DIAGNOSIS:

Although most anorectal abscesses originate in the anal crypts, other disease entities must be considered if the pathology appears atypical. *Crohn's disease* should be suspected if there are numerous complex fistula tracts associated with edematous skin tags, or if there is inflammation of the rectal mucosa. *Tuberculosis* is now a rare cause of anal abscesses and fistulas but has increased recently. *Hidradenitis suppurativa* also may mimic cryptoglandular suppurative disease. Close examination, however, will reveal that the disease arises from the perianal skin and not the anal crypts. *Actinomycosis* should be suspected if typical sulfur-like granules are seen in the abscess cavity or fistula tract. *Pilonidal disease* sometimes can be confused with a posterior perianal abscess, but careful examination should be done to rule out communication with the anus. Hair obtained from

the abscess cavity when the pilonidal abscess is drained will indicate the true nature of the disease. Other differentials include *urethral fistula* in male, *chronically infected Bartholins gland* and *malignancy* in some cases.

INVESTIGATIONS:

Chest x ray

ESR

Barium enema xray (X ray fistulogram)

MRI Fistulogram

Endorectal Ultrasound

Colonoscopy

Routine blood investigations



Figure 4 fistulography

ENDO ANAL ULTRASONOGRAPHY:

Transrectal Ultrasound is the most sensitive method for documenting sphincter injury. It is done using a 360-degree rotating 10-MHz transducer covered with an anal cap and inserted into the anal canal. The focal length of the anal probe is approximately 1–2 cm and allows evaluation of the anal sphincter muscles in three dimensions as the probe is withdrawn from the rectum. This can detect scarring at the site of an injury, as well as rectovaginal fistula. The presence of a sphincter defect alone, however, may not correlate with fecal incontinence.

High-resolution magnetic resonance imaging (MRI) with an endoanal coil is a diagnostic modality that can detect sphincter defects similarly to endoanal ultrasound. Endoanal coil MRI may also show sphincter atrophy or thinning not detectable by endoanal ultrasound that may be useful for predicting success of surgical repair. Focused pelvic floor MRI with a surface coil and dynamic MRI are being evaluated as methods of evaluating fecal incontinence.

Electromyography:

Pudendal nerve terminal motor latency (PNTML) determination measures the conduction velocity of the nerve Terminal Motor. Action potential is measured through the terminal 4 cm of the pudendal nerve between Alcock's canal and the external sphincter. A delay in conduction reflects injury to the fast-conducting fibers of the nerve. This injury usually is the result of stretch, direct trauma, systemic disease or sphincter sacrificing surgeries for fistula in ano. The normal terminal motor latency is 2.0 ± 0.2 milliseconds. A delay in conduction velocity greater than this indicates nerve injury. Measurement of the PNTML has been shown to be clinically less useful than originally thought. The defect in the nerve must be fairly advanced to see a change in conduction and is therefore somewhat inaccurate for assessing minor defects. Single-fiber or concentric needle electromyography (EMG) is most accurate but not very useful clinically due to pain during the test.

Anal manometry:

Anal manometry is useful to document reduced resting and squeeze pressures as well as sphincter length in individual sphincter quadrants. Normal resting pressure is at least 40 mm Hg. Normal squeeze pressure is 80 mm Hg, which is usually double the resting pressure. Sphincter length is greater than 3 cm. Normal sensation should allow detection

of a balloon inflated with 10–20 mL of air in the distal rectum. Maximal tolerable volume is at least 100 mL of air-filled balloon distention.

TREATMENT:

Hanley procedure is done for a horseshoe abscess/fistula.

Seton Placement have been used in a variety of ways for fistula surgeries. Materials used can be non-absorbable, non-degenerative and comfortable. *Tight or Cutting Setons* are placed with the intention of cutting through the enclosed muscle which is gradually severed such that the divided muscles do not spring apart. The site of fistula tract is replaced by a thin line of fibrosis. *Loose Setons* are used for long term palliation to avoid sepsis by establishing effective drainage.

Kshara sutra is practised using an Ayurvedic method of chemical cauterization, in which a specially prepared seton thread burns through the enclosed tissue

In *Fistulotomy* a portion of the internal sphincter is divided and the tract is deroofed entirely.

An anorectal fistula that persists after drainage of an ischioanal fossa abscess usually is a trans sphincteric fistula, because the tract crosses the lower portion of the external sphincter. Fistulotomy results in division of a portion of the internal sphincter as well as a portion of the lower external sphincter. If the tract lies below the posterior midline puborectalis, the external sphincter usually can be divided at the site of the fistula tract without loss of continence. However, the puborectalis must not be divided, or

incontinence will invariably ensue. The external anal sphincter is much less prominent in the anterior midline. Thus, fistulotomy as treatment for an anterior midline anal fistula is associated with an increased risk of anal incontinence, particularly in women.

Consequently, treatment of such fistulas often involves eradicating the internal opening of the fistula at the level of the dentate line by advancing a flap of rectal mucosa. When the sphincter complex is not too indurated and adequate intra-anal access can be obtained, the advancement flap technique can be employed. Coring out of the entire tract and closure of the communication with the anal lumen with an adequately vascularised flap consisting of mucosa and internal sphincter is sutured without tension to the anoderm. It is important to ensure adequate drainage of the fistula through the external opening until the suture line of the *advancement flap* is well healed; otherwise an abscess can reform and disrupt the suture line, causing a recurrence. *Biological agents* like Injection of *Fibrin glue*, insertion of *collagen plugs* into the fistula tract and cross-linked porcine dermal collagen are also an alternative with minimal morbidity and mixed success. *VAAFT (video-assisted anal fistula treatment)* was described by Meinoro which includes an initial diagnostic phase and a later Operative phase. Diagnostic phase uses 18cm length rigid fistuloscope and an eyepiece angled at 8° inserted from external to internal opening. Operative phase uses unipolar electrode and an endobrush. The lining of the fistula tract is cauterised with electrode the necrotic material is scraped off using endobrush. The internal opening is closed with semi-circular or linear stapler or with

cutaneous and mucosal flap. Synthetic cyanoacrylate is injected in the closure line for reinforcement. *Autologous Adipose-Derived Stem Cell* uses 20 million cells taken from liposuction are used in the treatment of fistula in ano.

The newer technique *ligation of the intersphincteric fistula tract (LIFT)* has been described with minimal morbidity and mixed success by Rojanasakul in 2006 with success rate of 94.4%. A dissection in the intersphincteric plane to the level of the fistula with double-suture ligation and partial excision of the intersphincteric portion of the tract will result in healing. Minimal damage to the sphincter mechanism and anal canal allows other treatments to be used if the technique fails. Combination of LIFT and Fistula plug called *LIFT-plug procedure* can be used ideally for the treatment of trans-sphincteric fistulas. It is a simple minimally invasive procedure with high healing rate and does not alter anal function.

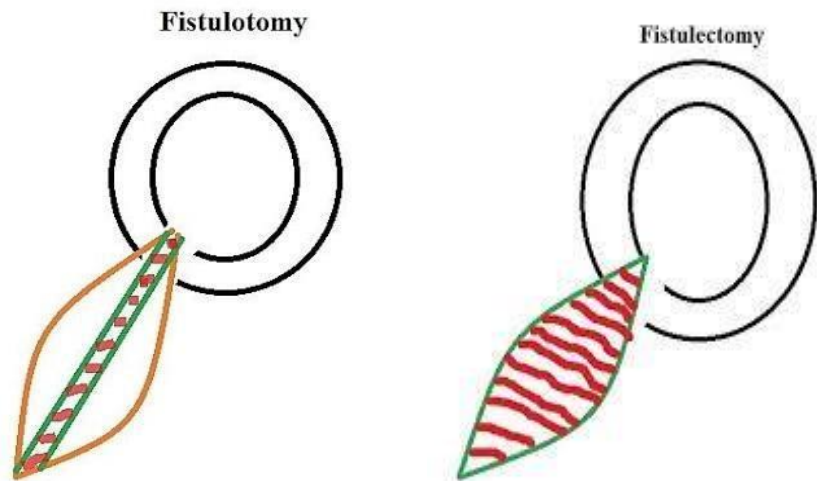
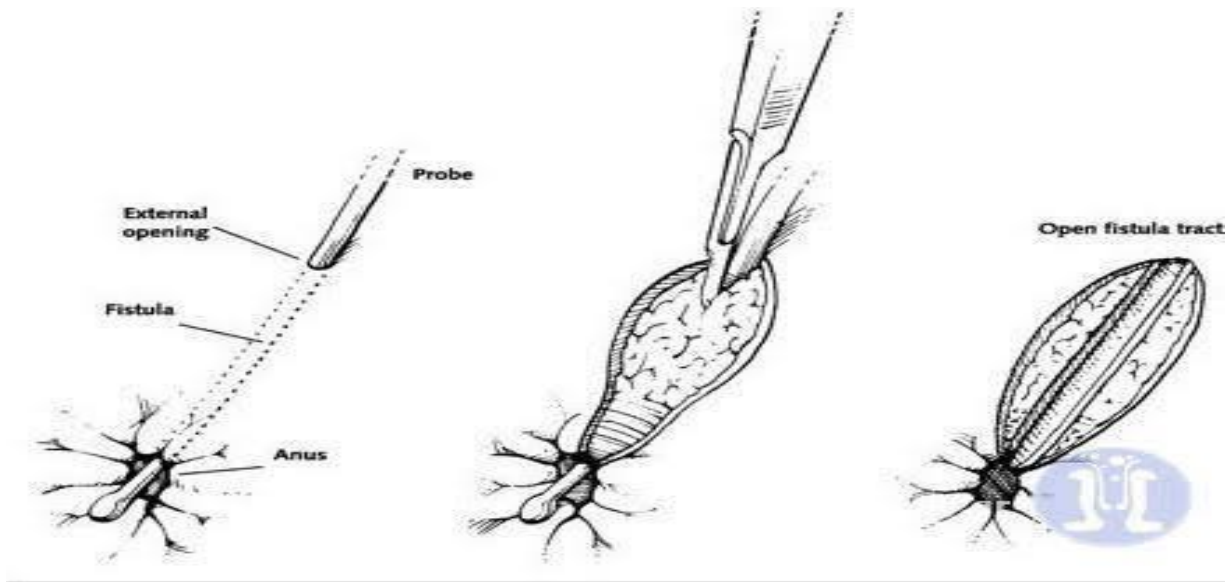


Figure 5 fistulotomy



Figure 6 fistulectomy

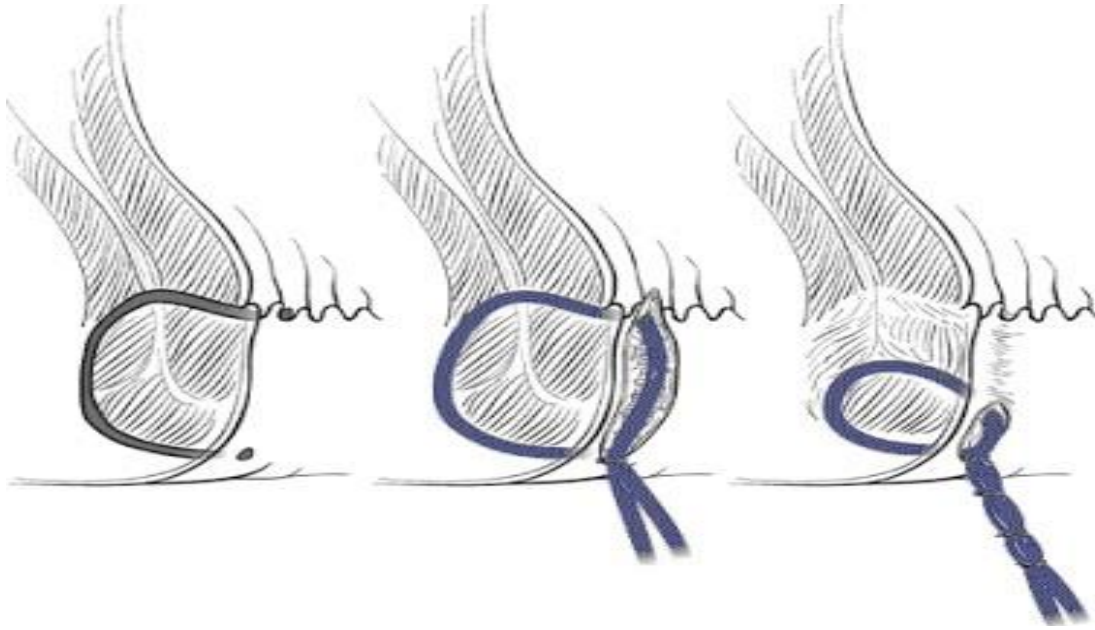


Figure 7 seton placement



Figure 8 mucosal advancement flap

PRE-OPERATIVE CONSIDERATIONS

1. Bowel preparation with enema night before surgery
2. General anaesthesia/ local anaesthesia or regional block
3. Preoperative antibiotics to be given
4. Position -Prone jack knife position with buttocks apart [21,22] or dorsal lithotomy position

INTRAOPERATIVE CONSIDERATIONS include

In lithotomy position parts painted and draped.

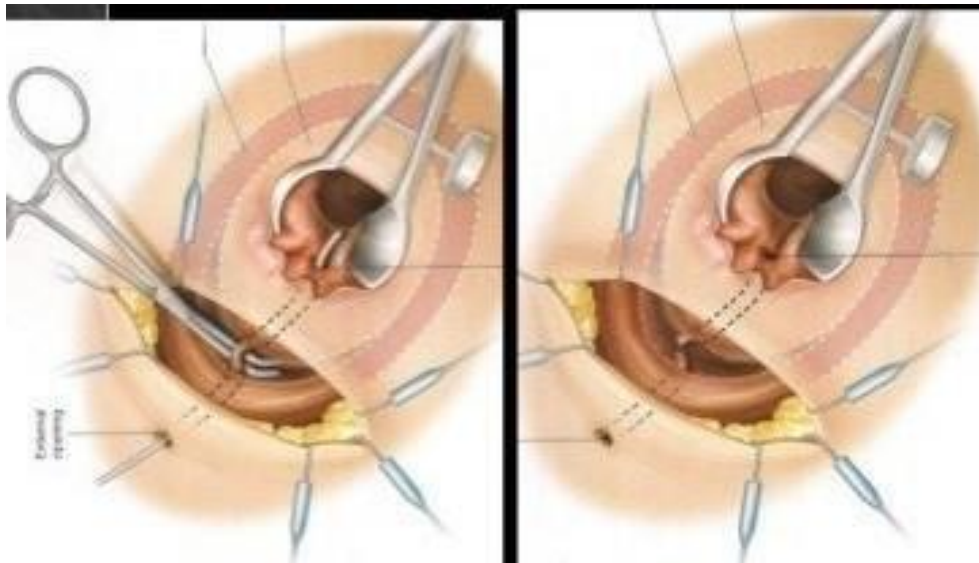
Per rectal examination and Proctoscopy done under anaesthesia makes the examination complete as detailed evaluation can be done without causing pain to the patient. Internal opening is identified using dye test and with proctoscopy.

FISTULECTOMY PROCEDURE

From the external opening probe is passed upto the internal opening. Internal opening is felt as an induration. Fistula is laid open using a knife. Fistulous tract along with unhealthy granulation tissue and all external openings are removed in toto.

LIFT PROCEDURE

An incision made over the intersphincteric groove and dissection done to reach the intersphincteric tract. The tract is hooked out and ligated. The contents are all curetted and wound is closed in layers with absorbable sutures.



The following are the steps of LIFT procedure:

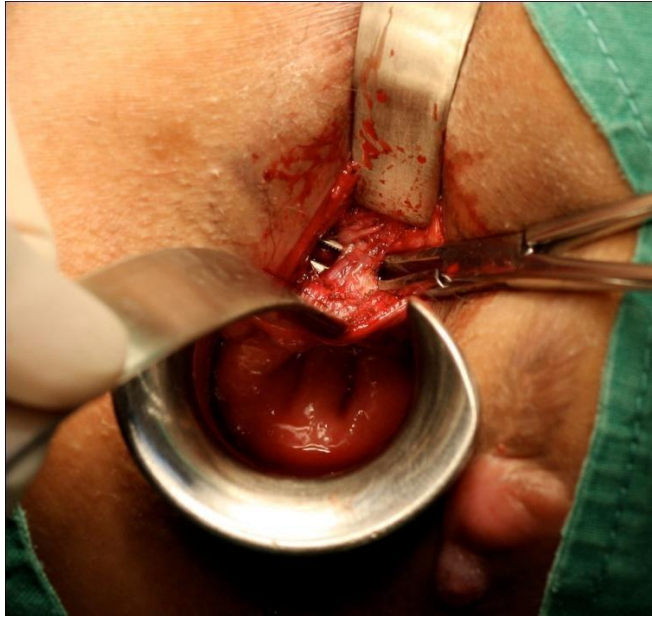
1. Internal opening identified by dye test



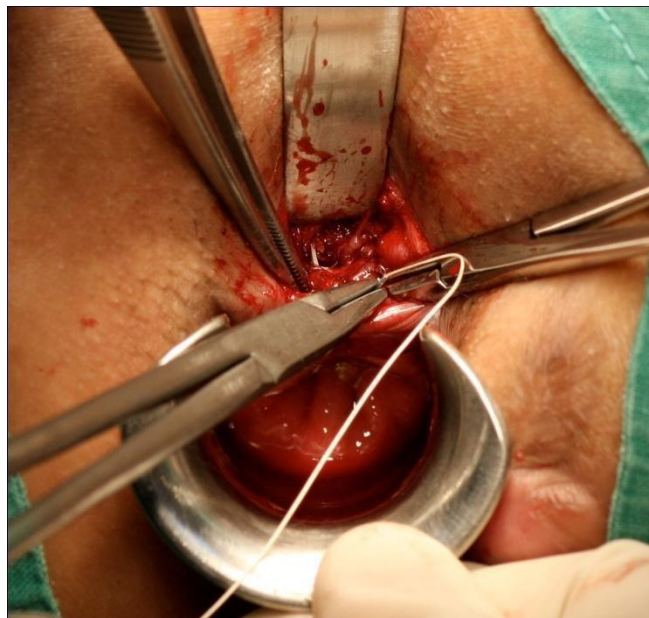
2. Intersphincteric groove incision made and dissected



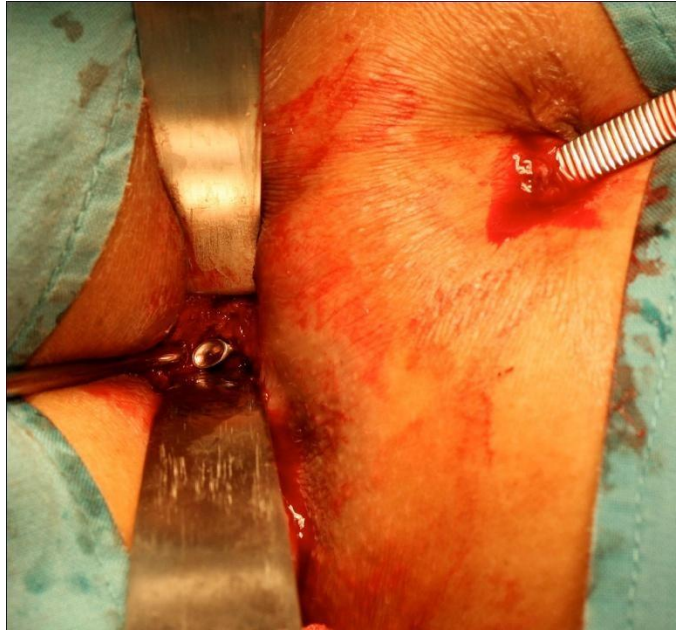
3. Intersphincteric tract hooked out after identifying the tract.



4. the intersphincteric tract is ligated with vicryl and the tract is removed.



5. curetting done from external opening to clear off the infected contents.



6. sphincter defects closed with intermittent sutures.



7. wound is closed and sterile dressing done.

POST OPERATIVE CONSIDERATIONS

All postoperative patients received

- oral antibiotics for 14 days
- Sitz bath four times a day
- Analgesics and antibiotics
- Stool bulking agents and laxatives
- Wound care

MONITORING

Patients are followed up at regular basis on immediate postoperative period, 1 week, 1 month, 6 weeks and 3 months. The following factors are assessed for both groups

- Pain
- Bleeding
- Discharge at wound site
- Wound infection
- Incontinence
- Length of hospital stay
- Wound healing time
- Recurrence and re-admission

RESULTS

A Non-randomised control trial (single blind open label control trial) was done for nine months among 140 patients with fistula in ano among which 70 patients were taken as test group- group A- and underwent sphincter preserving LIFT (ligation of intersphincteric fistula tract) technique. 70 patients were taken as control group- group B- and underwent fistulectomy.

The collected data were analysed with IBM.SPSS statistics software 23.0 Version. To describe about the data descriptive statistics frequency analysis, percentage analysis was used for categorical variables and the mean & S.D were used for continuous variables. To find the significant difference between the bivariate samples in Independent groups the **Unpaired sample t-test** was used. To find the significance in categorical data **Chi-Square test** was used similarly if the expected cell frequency is less than 5 in 2×2 tables then the **Fisher's Exact** was used. In all the above statistical tools the probability value .05 is considered as significant level.

P - Value	** Highly Significant at $P \leq .01$
--------------	---------------------------------------

P - Value	* Significant at $0.011 < P \leq .050$
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P - Value	# No Significant at $P > .050$
--------------	--------------------------------

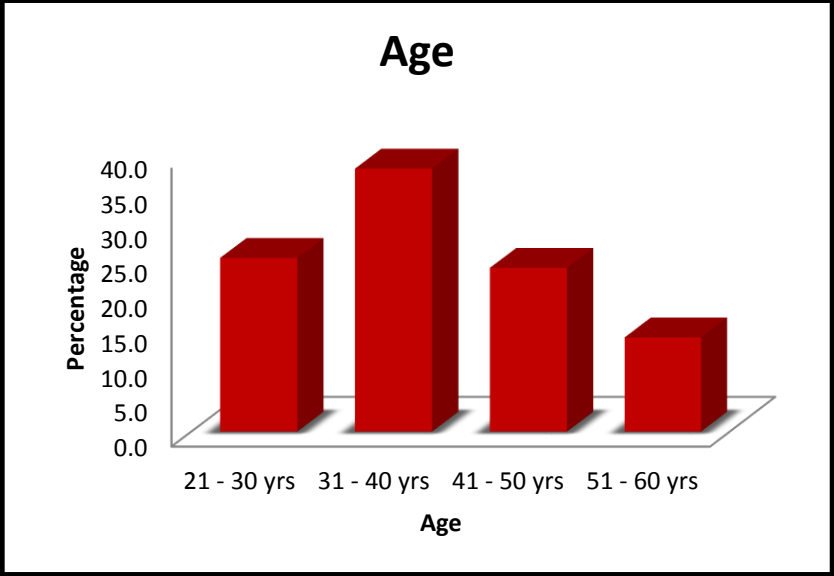
AGE DISTRIBUTION OF FISTULA IN

ANO

AGE

	Frequency	Percent
21 - 30 yrs	35	25.0
31 - 40 yrs	53	37.9
41 - 50 yrs	33	23.6
51 - 60 yrs	19	13.6
Total	140	100.0

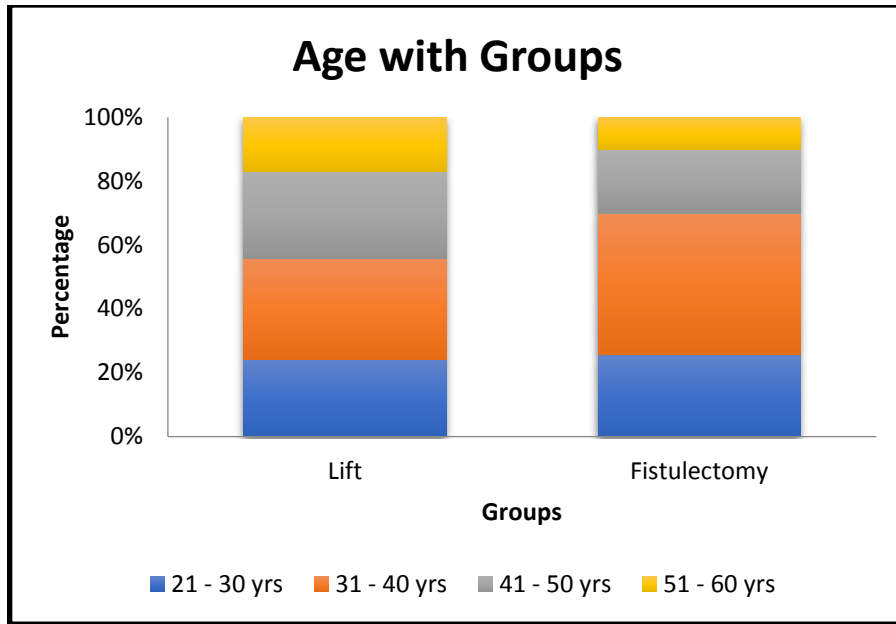
This study observed that fistula in ano is more common among 31-40 years group (37.9%) as depicted.



The below crosstabulation shows the statistics on people who underwent LIFT and fistulectomy belonging to different age groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
AGE	21 - 30	Count	17	18	35
	yrs	%	24.3%	25.7%	25.0%
	31 - 40	Count	22	31	53
	yrs	%	31.4%	44.3%	37.9%
	41 - 50	Count	19	14	33
	yrs	%	27.1%	20.0%	23.6%
	51 - 60	Count	12	7	19
	yrs	%	17.1%	10.0%	13.6%
Total		Count	70	70	140
		%	100.0%	100.0%	100.0%



Chi-Square Tests

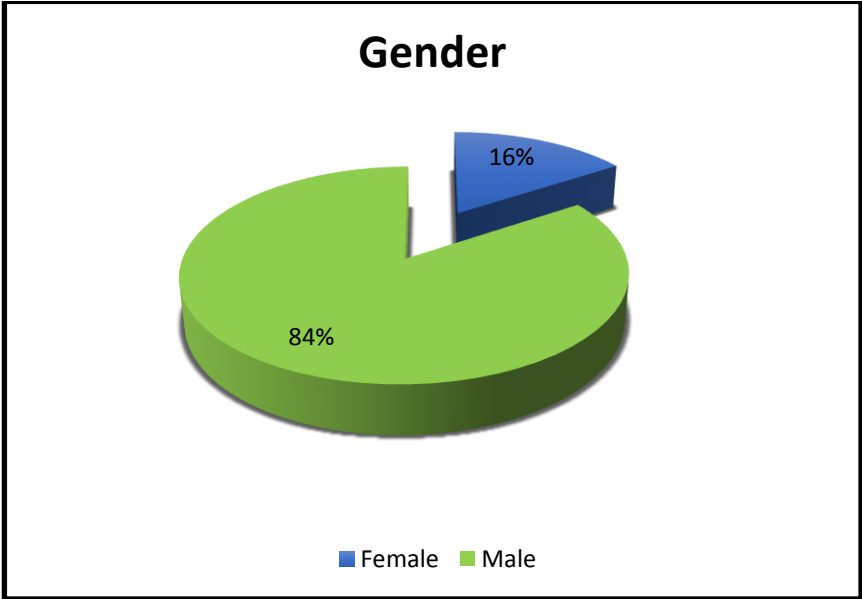
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.630 ^a	3	.304
Likelihood Ratio	3.656	3	.301
Linear-by-Linear Association	1.886	1	.170
N of Valid Cases	140		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.50.

GENDER DISTRIBUTION OF FISTULA IN ANO:

SEX

	Frequency	Percent
Female	22	15.7
Male	118	84.3
Total	140	100.0

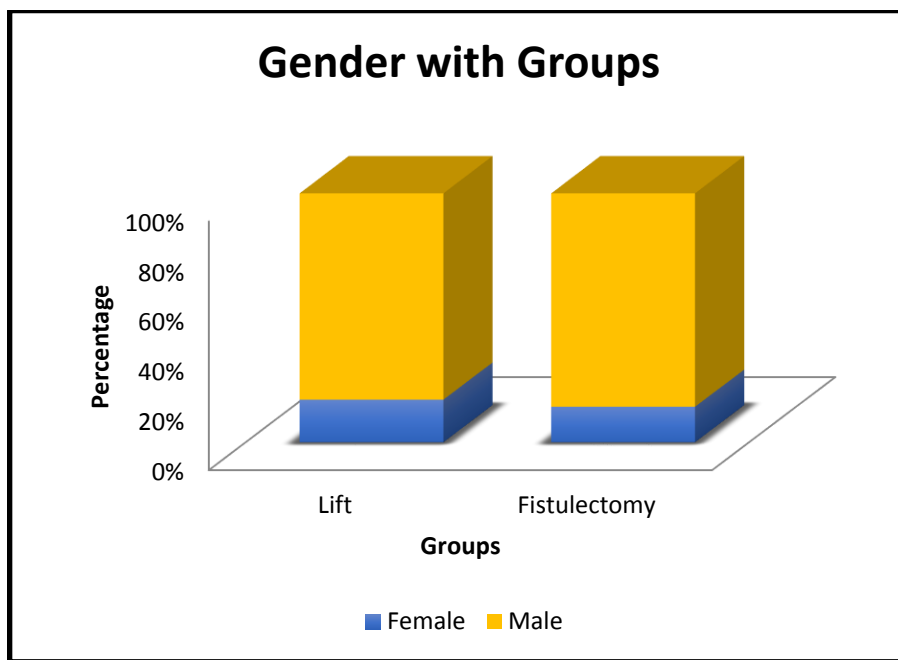


This study observed that fistulas are more common among males (84.3%) than females (15.7%).

SEX * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
SEX	FEMALE	Count	12	10	22
		%	17.1%	14.3%	15.7%
	MALE	Count	58	60	118
		%	82.9%	85.7%	84.3%
Total		Count	70	70	140
		%	100.0%	100.0%	100.0%



Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)
Pearson Chi-Square	.216 ^a	1	.642		
Continuity Correction ^b	.054	1	.816		
Likelihood Ratio	.216	1	.642		
Fisher's Exact Test				.817	.408
N of Valid Cases	140				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.00.

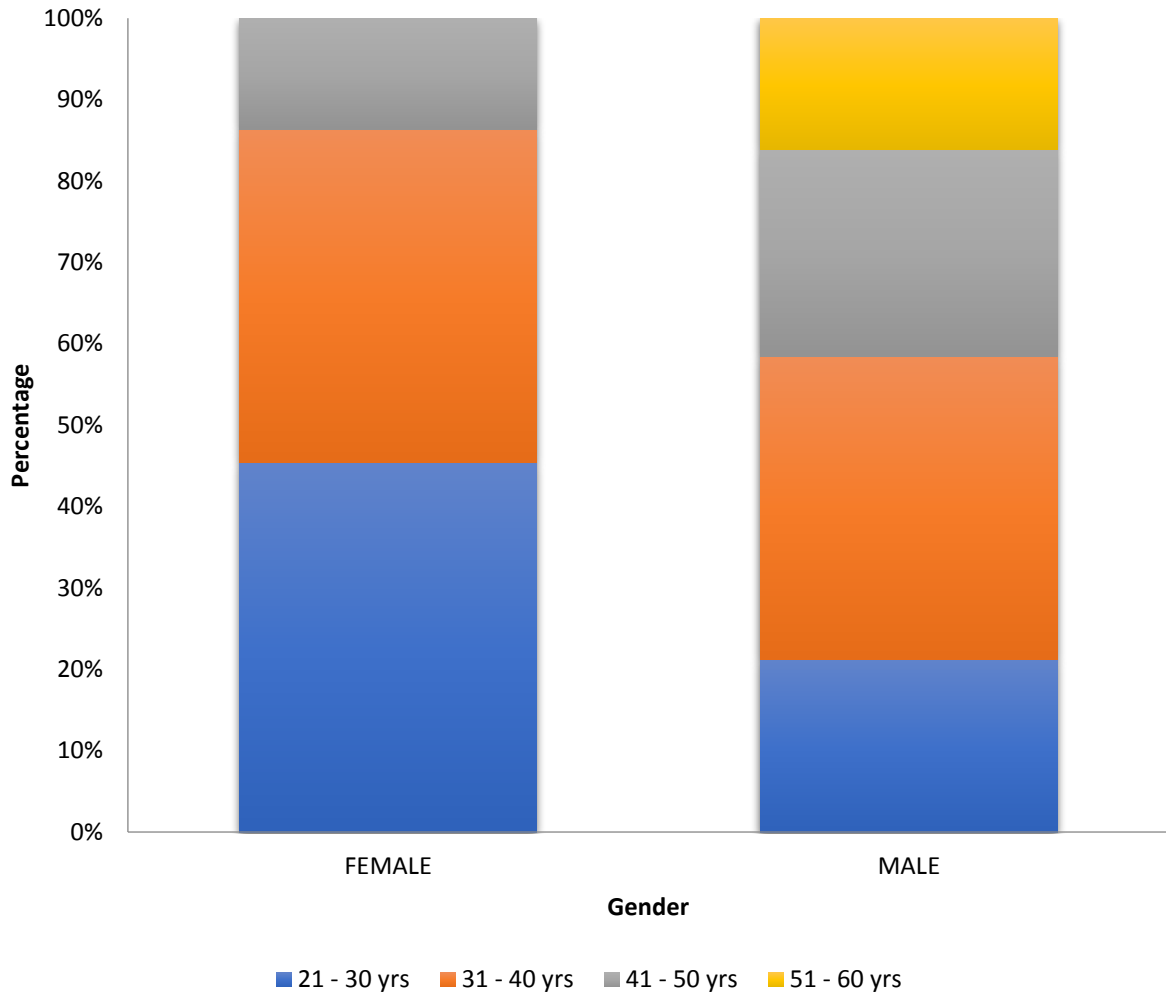
b. Computed only for a 2x2 table

AGE WITH GENDER:

AGE * SEX Crosstabulation

			SEX		Total
			FEMALE	MALE	
AGE	21 - 30 yrs	Count	10	25	35
		%	45.5%	21.2%	25.0%
	31 - 40 yrs	Count	9	44	53
		%	40.9%	37.3%	37.9%
	41 - 50 yrs	Count	3	30	33
		%	13.6%	25.4%	23.6%
	51 - 60 yrs	Count	0	19	19
		%	0.0%	16.1%	13.6%
Total		Count	22	118	140
		%	100.0%	100.0%	100.0%

Age with Gender



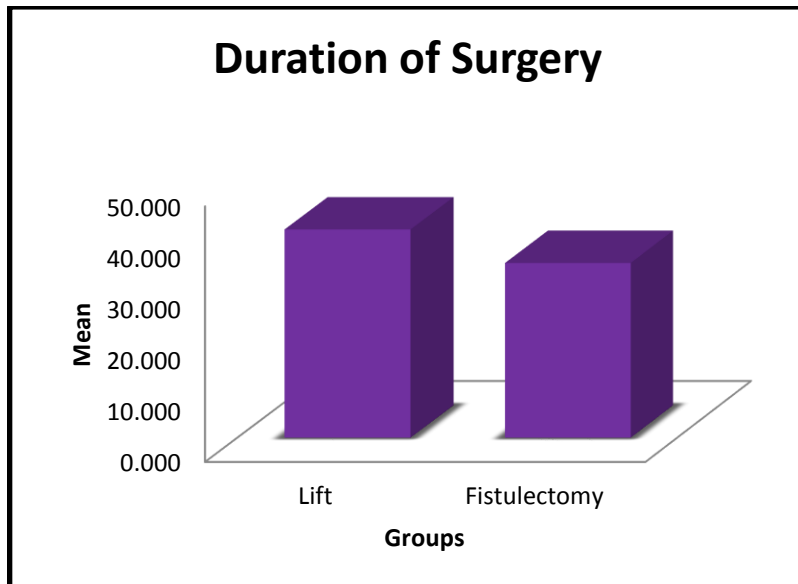
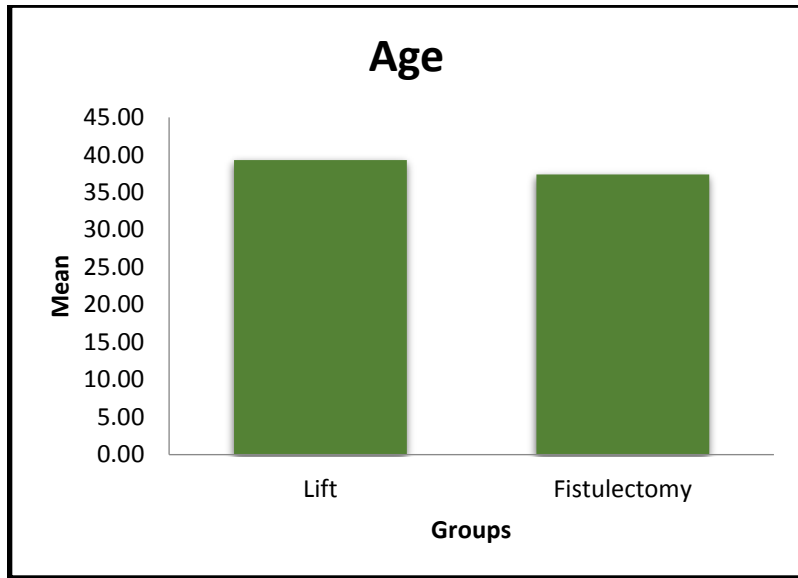
GROUP STATISTICS COMPARING LIFT AND FISTULECTOMY IN DURATION OF SURGERY, HOSPITAL STAY AND WOUND HEALING TIME:

T-Test

Group Statistics

Groups		N	Mean	Std. Deviation	Std. Error Mean
AGE	Lift	70	39.29	10.178	1.217
	Fistulectomy	70	37.39	9.798	1.171
DURATION OF SURGERY	Lift	70	40.700	5.9815	.7149
	Fistulectomy	70	34.157	6.0112	.7185
DURATION OF HS	Lift	70	3.943	.5617	.0671
	Fistulectomy	70	5.386	1.2887	.1540
WOUND HEALING TIME (WEEKS)	Lift	69	5.01	1.022	.123
	Fistulectomy	63	6.46	1.991	.251

HS- HOSPITAL STAY

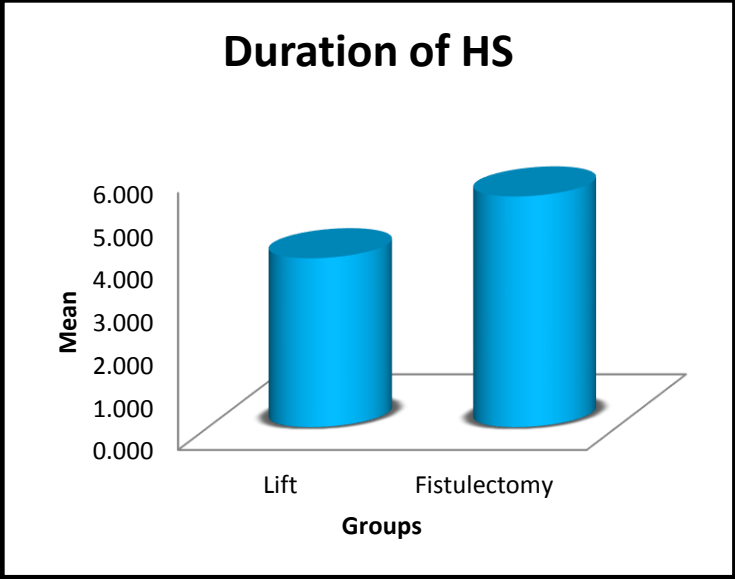


Duration of surgery is lesser for fistulectomy (mean-34 mins) than LIFT (mean- 40 mins)

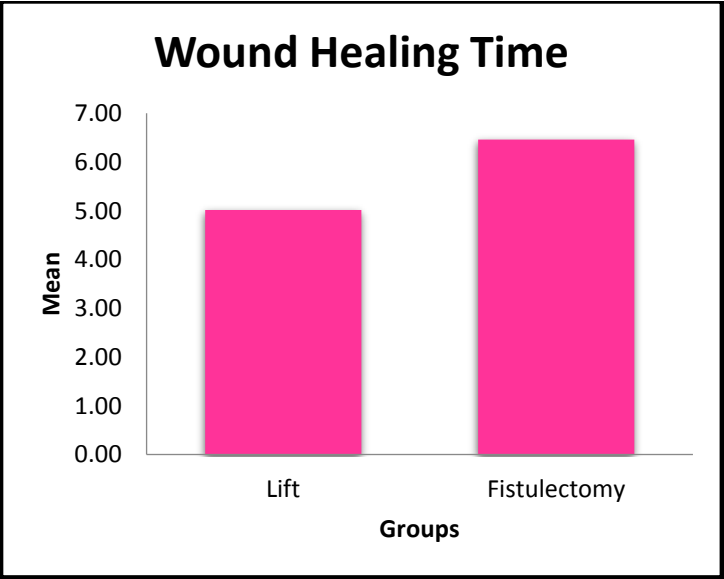
Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
AGE	Equal variances assumed	.613	.435	1.125	138	.262	1.900	1.689	-1.439	5.239
DURATI ON OF	Equal variances	.112	.739	6.455	138	.0005	6.5429	1.0136	4.5387	8.5470

SURGERY	assumed									
DURATION OF HS	Equal variances not assumed	27.711	.000	-8.587	94.307	.0005	-1.4429	.1680	1.7765	-1.1093
WOUND HEALING TIME (WEEKS)	Equal variances not assumed	16.675	.000	-5.176	90.635	.0005	-1.446	.279	2.001	-.891



Duration of hospital stay is lesser for LIFT (mean 3.9 weeks) than fistulectomy (5.3 weeks) which is highly significant with p value 0.0005



Wound healing time is lesser for LIFT than fistulectomy which is highly significant with p value 0.0005

SURGICAL DIFFICULTIES * Groups

Crosstab

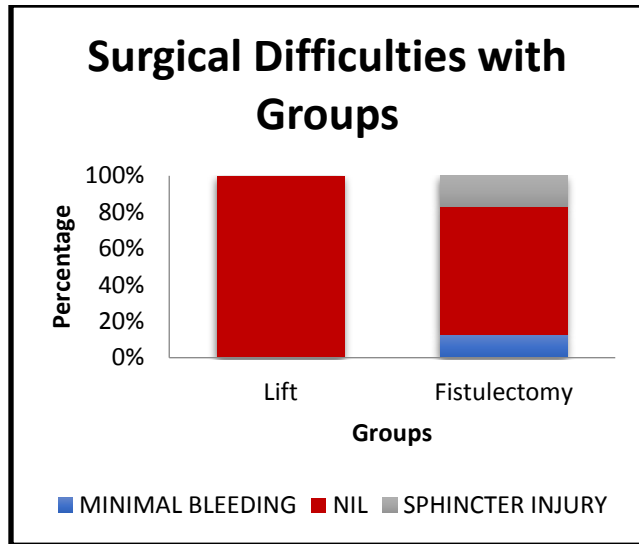
			Groups		Total
			Lift	Fistulectomy	
S	SURGICAL MINIMAL DIFFICULTY BLEEDING	Coun	0	9	9
		t			
		%	0.0%	12.9%	6.4%
	NIL	Coun	70	49	119
		t			
		%	100.0%	70.0%	85.0%
SPHINCTER INJURY	Coun	0	12	12	
	t				
	%	0.0%	17.1%	8.6%	
Total		Coun	70	70	140
		t			
		%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	24.706 ^a	2	.0005
Likelihood Ratio	32.838	2	.000
N of Valid Cases	140		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 4.50

This study observed that surgical difficulties are more encountered during fistulectomy than LIFT. The difficulties are- bleeding in 12.9% and sphincter injury in 17.1% who underwent fistulectomy



POSTOPERATIVE PERIOD:

POST OPERATIVE

BLEEDING * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
BLEEDING	NO	Count	70	62	132
		%	100.0%	88.6%	94.3%
	YES	Count	0	8	8
		%	0.0%	11.4%	5.7%
Total	Count	70	70	140	
	%	100.0%	100.0%	100.0%	

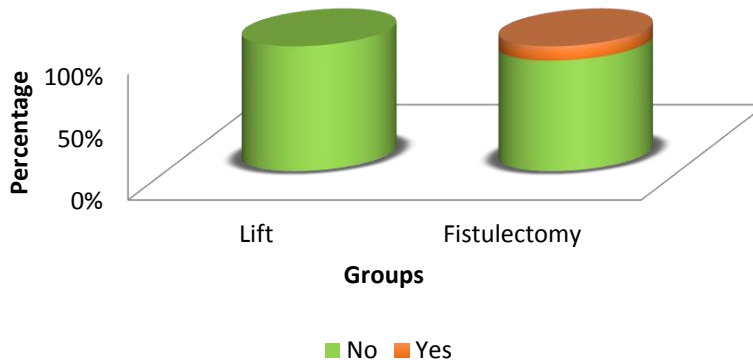
Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1- sided)
Pearson Chi-Square	8.485 ^a	1	.004		
Continuity Correction ^b	6.496	1	.011		
Likelihood Ratio	11.576	1	.001		
Fisher's Exact Test				.006	.003
N of Valid Cases	140				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 4.00.

b. Computed only for a 2x2 table

Post operative Bleeding with Groups



This study observed that postoperative bleeding is common in patients who underwent fistulectomy amounting to 11.4% and has a highly significant p value.

POSTOPERATIVE INCONTINENCE * Groups

Crosstab

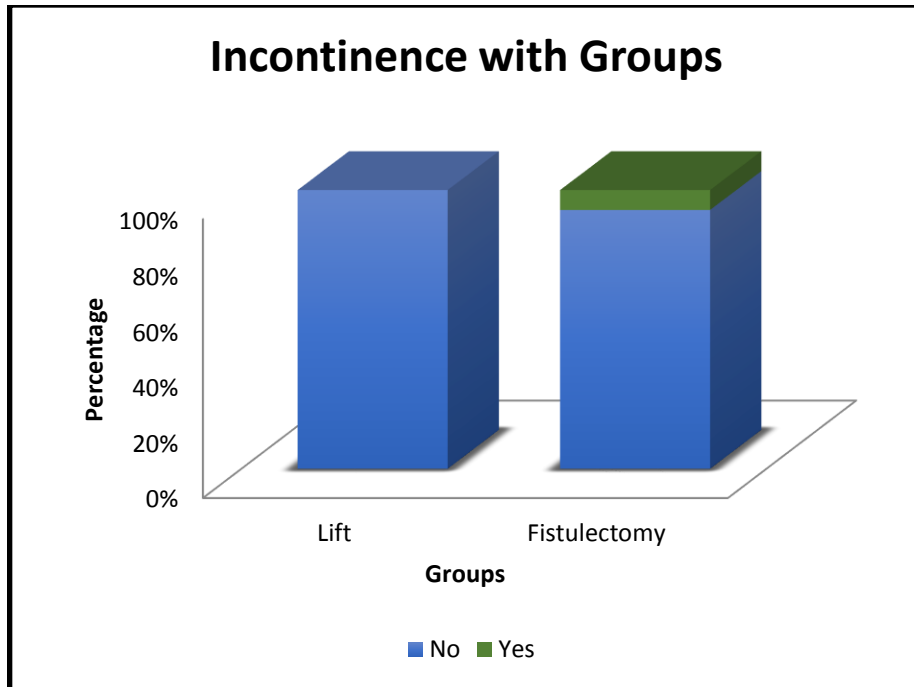
			Groups		Total
			Lift	Fistulectomy	
INCONTINENCE	NO	Count	70	65	135
		%	100.0%	92.9%	96.4%
	YES	Count	0	5	5
		%	0.0%	7.1%	3.6%
Total	Count	70	70	140	
	%	100.0%	100.0%	100.0%	

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1- sided)
Pearson Chi-Square	5.185 ^a	1	.023		
Continuity Correction ^b	3.319	1	.069		
Likelihood Ratio	7.117	1	.008		
Fisher's Exact Test				.058	.029
N of Valid Cases	140				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.50.

b. Computed only for a 2x2 table



This study observed that postoperative incontinence is seen in patients who underwent fistulectomy. Incontinence is not reported in patients who underwent LIFT.

1 WEEK POST OP PERIOD:

PAIN 1W * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
PAIN 1W	MILD	Count	8	0	8
		%	11.4%	0.0%	5.7%
	NO	Count	62	64	126
		%	88.6%	91.4%	90.0%
	YES	Count	0	6	6
		%	0.0%	8.6%	4.3%
Total	Count		70	70	140
	%		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi- Square	14.032 ^a	2	.001
Likelihood Ratio	19.440	2	.000
N of Valid Cases	140		

a. 4 cells (66.7%) have expected count less than

5. The minimum expected count is 3.00.

Pain after 1 week is significantly seen in patients who underwent Fistulectomy with p value 0.001

INCONTINENCE 1W * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
INCONTINENCE 1W	NO	Count	70	66	136
		%	100.0%	94.3%	97.1%
	YES	Count	0	4	4
		%	0.0%	5.7%	2.9%
Total	Count	70	70	140	
	%	100.0%	100.0%	100.0%	

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1- sided)
Pearson Chi-Square	4.118 ^a	1	.042		
Continuity Correction ^b	2.316	1	.128		
Likelihood Ratio	5.663	1	.017		

Fisher's Exact Test				.120	.060
N of Valid Cases	140				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.00.

b. Computed only for a 2x2 table

Incontinence after 1 week is significantly seen in patients who underwent fistulectomy

WOUND INFECTION 1W * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
WOUND	NO	Count	65	63	128
		%	92.9%	90.0%	91.4%
1W	YES	Count	5	7	12
		%	7.1%	10.0%	8.6%
Total	Count		70	70	140
	%		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)
Pearson Chi-Square	.365 ^a	1	.546		
Continuity Correction ^b	.091	1	.763		
Likelihood Ratio	.366	1	.545		
Fisher's Exact Test				.764	.382
N of Valid Cases	140				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.00.

b. Computed only for a 2x2 table

This study observed that wound infection after 1 week is seen more in patients who underwent fistulectomy

READMISSION 1W * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
READMISSION NO 1W	Count	70	70	140	
	%	100.0%	100.0%	100.0%	
Total	Count	70	70	140	
	%	100.0%	100.0%	100.0%	

Chi-Square Tests

	Value
Pearson Chi-Square	. ^a
N of Valid Cases	140

a. No statistics are computed

because READMISSION

1W is a constant.

No readmission required in both fistulectomy and LIFT groups

1 MONTH POSTOP PERIOD:

PAIN 1M * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
PAIN 1M	NO	Count	68	70	138
		%	97.1%	100.0%	98.6%
	YES	Count	2	0	2
		%	2.9%	0.0%	1.4%
Total		Count	70	70	140
		%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)
Pearson Chi-Square	2.029 ^a	1	.154		
Continuity Correction ^b	.507	1	.476		

Likelihood Ratio	2.802	1	.094		
Fisher's Exact Test				.496	.248
N of Valid Cases	140				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.00.

b. Computed only for a 2x2 table

pain after 1 month seen significantly in patients who underwent fistulectomy.

INCONTINENCE 1M * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
INCONTINENCE 1M	NO	Count	70	66	136
		%	100.0%	94.3%	97.1%
	YES	Count	0	4	4
		%	0.0%	5.7%	2.9%
Total	Count	70	70	140	
	%	100.0%	100.0%	100.0%	

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)
Pearson Chi-Square	4.118 ^a	1	.042		
Continuity Correction ^b	2.316	1	.128		
Likelihood Ratio	5.663	1	.017		
Fisher's Exact Test				.120	.060
N of Valid Cases	140				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.00.

b. Computed only for a 2x2 table

Incontinence after 1 month seen in patients who underwent fistulectomy.

WOUND INFECTION 1M * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
WOUND INFECTION 1M	NO	Count	68	65	133
		%	97.1%	92.9%	95.0%
	YES	Count	2	5	7
		%	2.9%	7.1%	5.0%
Total		Count	70	70	140
		%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1- sided)
Pearson Chi-Square	1.353 ^a	1	.245		
Continuity Correction ^b	.602	1	.438		
Likelihood Ratio	1.396	1	.237		

Fisher's Exact Test				.441	.221
N of Valid Cases	140				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.50.

b. Computed only for a 2x2 table

This study observed that wound infection after 1 month seen significantly in patients of Group B who underwent Fistulectomy

READMISSION 1M * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
READMISSION 1M	NO	Count	70	65	135
		%	100.0%	92.9%	96.4%
	YES	Count	0	5	5
		%	0.0%	7.1%	3.6%
Total	Count	70	70	140	
	%	100.0%	100.0%	100.0%	

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1- sided)
Pearson Chi-Square	5.185 ^a	1	.023		
Continuity Correction ^b	3.319	1	.069		
Likelihood Ratio	7.117	1	.008		
Fisher's Exact Test				.058	.029
N of Valid Cases	140				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.50.

b. Computed only for a 2x2 table

Readmission required for 7.1% of patients who underwent fistulectomy

6 WEEKS POSTOP PERIOD:

PAIN POP 6W * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
PAIN	NO	Count	70	70	140
		%	100.0%	100.0%	100.0%
Total		Count	70	70	140
		%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value
Pearson Chi-Square	. ^a
N of Valid Cases	140

a. No statistics are

computed because

PAIN POP 6W is a

constant.

Pain is not significantly seen in both the groups after 6 weeks.

INCONTINENCE POP 6W * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
INCONTINENCE	NO	Count	70	70	140
POP 6W		%	100.0%	100.0%	100.0%
Total		Count	70	70	140
		%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value
Pearson Chi-Square	. ^a
N of Valid Cases	140

a. No statistics are computed

because INCONTINENCE

POP 6W is a constant.

Incontinence after 6 weeks is not reported in patients of both groups

WOUND INFECTION POP 6W * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
WOUND INFECTION POP 6W	NO	Count	68	64	132
		%	97.1%	91.4%	94.3%
	YES	Count	2	6	8
		%	2.9%	8.6%	5.7%
Total		Count	70	70	140
		%	100.0%	100.0%	100.0%

Chi-Square Tests

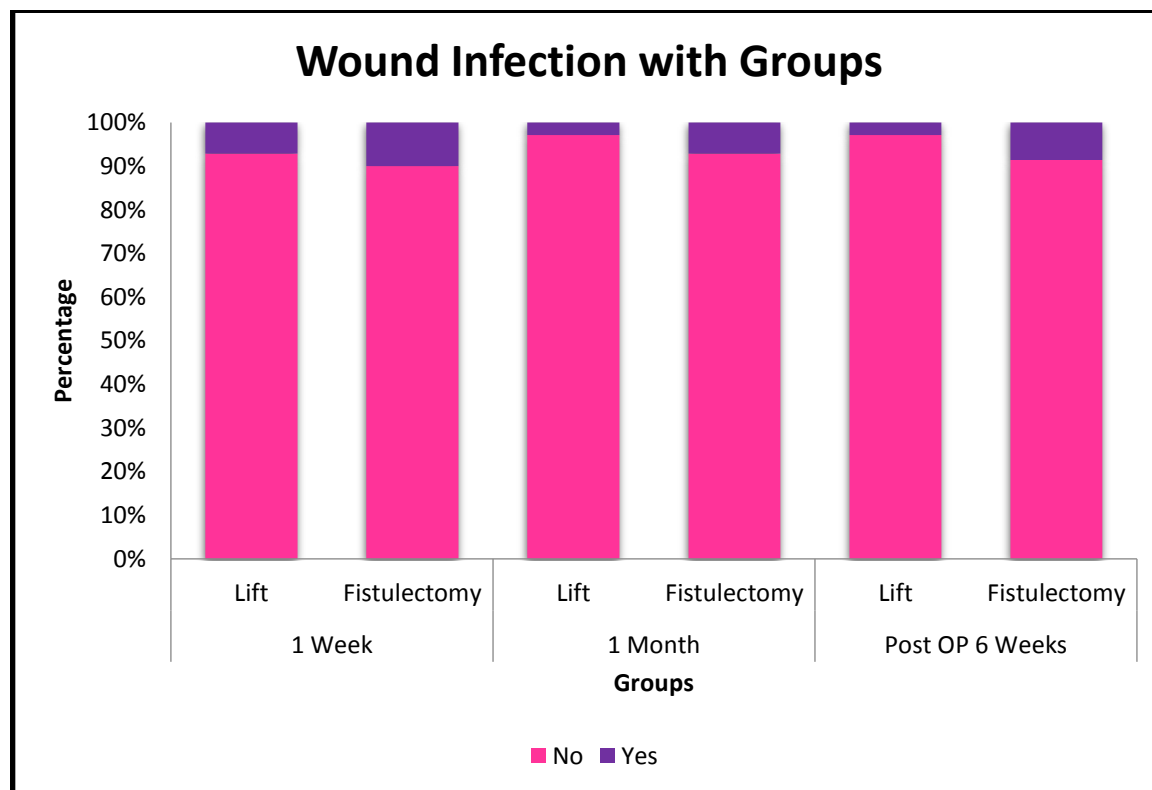
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1- sided)
Pearson Chi-Square	2.121 ^a	1	.145		
Continuity Correction ^b	1.193	1	.275		
Likelihood Ratio	2.214	1	.137		

Fisher's Exact Test				.275	.137
N of Valid Cases	140				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 4.00.

b. Computed only for a 2x2 table

After 6 weeks Wound infection is significantly seen in patients of Group B who underwent Fistulectomy (8.6%)



READMISSION POP 6W * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
READMISSION NO	Count	70	70	140	
POP 6W	%	100.0%	100.0%	100.0%	
Total	Count	70	70	140	
	%	100.0%	100.0%	100.0%	

Chi-Square Tests

	Value
Pearson Chi-Square	. ^a
N of Valid Cases	140

a. No statistics are computed

because READMISSION

POP 6W is a constant.

After 6 weeks no patients required readmission in both the groups.

3 MONTHS POSTOP

PERIOD:

PAIN POP 3M * Groups

Crosstab

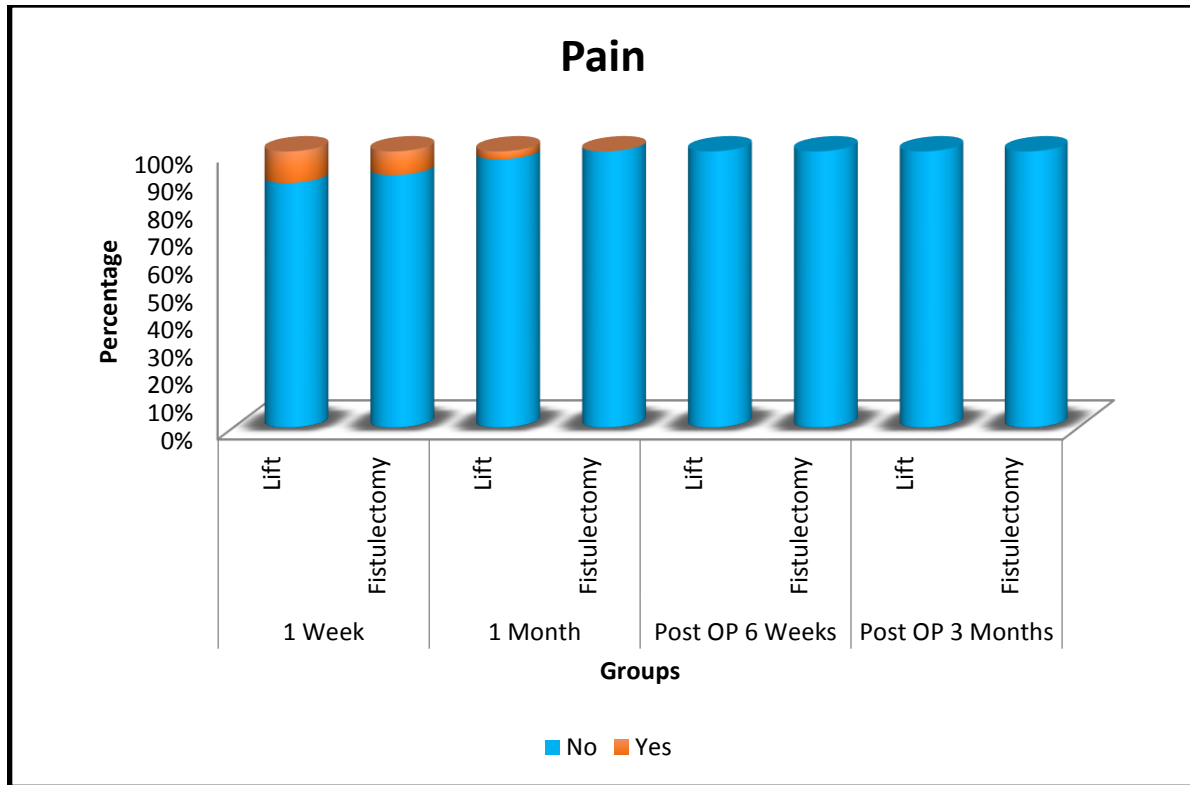
			Groups		Total
			Lift	Fistulectomy	
PAIN	NO	Count	70	70	140
POP		%	100.0%	100.0%	100.0%
3M					
Total		Count	70	70	140
		%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value
Pearson Chi-Square	. ^a
N of Valid Cases	140

- a. No statistics
are computed
because PAIN
POP 3M is a
constant.

Pain is not reported in both the groups after 3 months.



INCONTINENCE POP 3M * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
INCONTINENCE NO	Count	70	70	140	
POP 3M	%	100.0%	100.0%	100.0%	
Total	Count	70	70	140	
	%	100.0%	100.0%	100.0%	

Chi-Square Tests

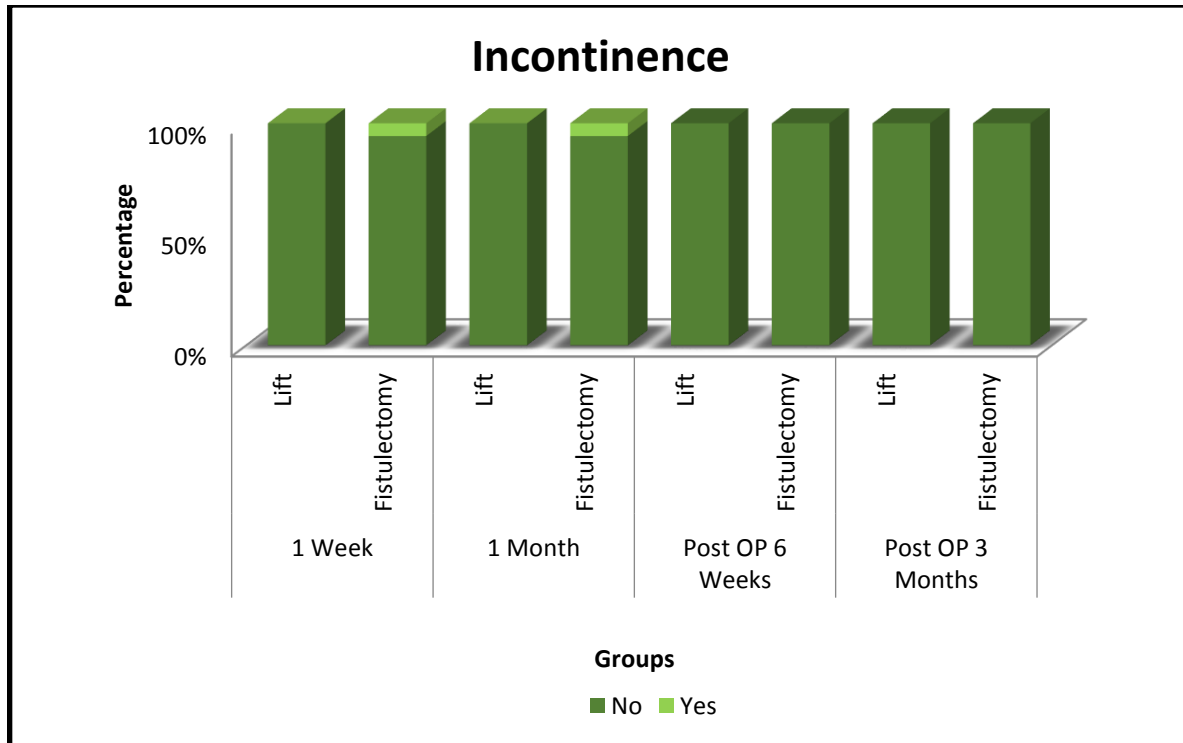
	Value
Pearson Chi-Square	. ^a
N of Valid Cases	140

a. No statistics are computed

because INCONTINENCE

POP 3M is a constant.

Incontinence is not significantly reported in both the groups after 3 months indicating that
Fistulectomy group has a disadvantage of short term anal incontinence.



READMISSION POP 3M * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
READMISSION NO POP 3M	Count	70	70	140	
	%	100.0%	100.0%	100.0%	
Total	Count	70	70	140	
	%	100.0%	100.0%	100.0%	

Chi-Square Tests

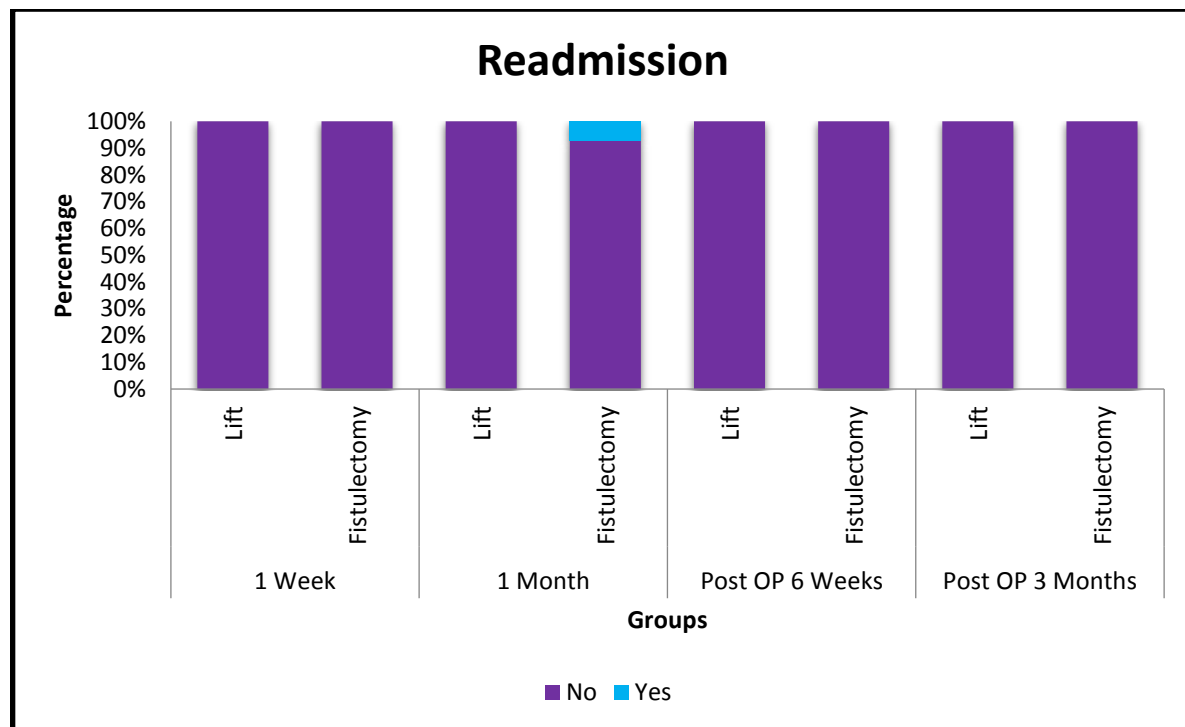
	Value
Pearson Chi-Square	. ^a
N of Valid Cases	140

a. No statistics are computed

because READMISSION

POP 3M is a constant.

After 3 months, no patients required readmission in both the groups.



RECURRENCE POP 3M * Groups

Crosstab

			Groups		Total
			Lift	Fistulectomy	
RECURRENCE POP 3M	NO	Count	69	65	134
		%	98.6%	92.9%	95.7%
	YES	Count	1	5	6
		%	1.4%	7.1%	4.3%
Total	Count	70	70	140	
	%	100.0%	100.0%	100.0%	

Chi-Square Tests

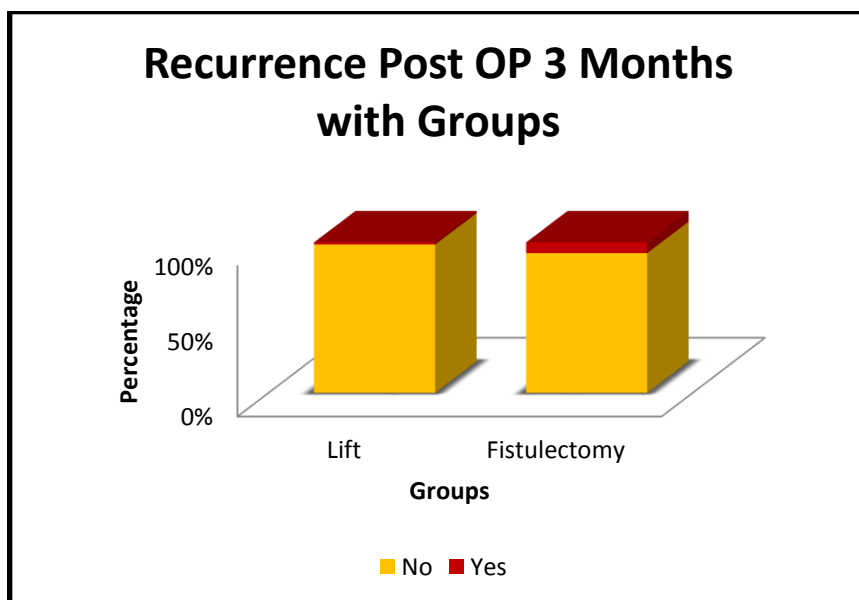
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1- sided)
Pearson Chi-Square	2.786 ^a	1	.095		
Continuity Correction ^b	1.567	1	.211		
Likelihood Ratio	3.030	1	.082		

Fisher's Exact Test				.209	.104
N of Valid Cases	140				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.00.

b. Computed only for a 2x2 table

After 3 months significant recurrence was noted in patients who underwent fistulectomy (7.1%) when compared to patients who underwent LIFT(1.4%) which is significant with p value of 0.209



DISCUSSION

The cure of fistula in ano results from elimination of infective foci which is usually the cryptoglandular infection and also from preventing the entry of faecal particles through the internal opening. This is achieved by closure of internal opening and removal of infective foci. Most of the techniques used for the treatment of fistula in ano sacrifices the sphincter to achieve the goal of eliminating the foci. This results in anal incontinence.

The other techniques which preserves the sphincter fails to remove the infective foci and results in recurrence and chronic wound infection. Both of which is not acceptable. To overcome all this, Thai surgeon, developed the novel technique LIFT (Ligation of Intersphincteric Fistula Tract) which overcomes the above-mentioned drawbacks. This technique involves the closure of internal opening, curetting of the tract and ligation of the intersphincteric tract all of which provides the expected outcomes in the treatment of fistula in ano without sacrificing the sphincter functions.

This study compared LIFT technique and Fistulectomy. The results of the study showed that incidence of fistulas is more common among males than females for unknown reasons. The incidence of fistulas is more among the middle age group persons. In view of duration of surgery, fistulectomy has the advantage of lesser duration of surgery. But LIFT is advantageous in all other aspects like lesser duration of hospital stay, early resuming of daily activities, preserving sphincter functions, maintaining continence,

having early wound healing time and having low wound infection rates. LIFT also shows minimal or nil intraoperative, postoperative complications and Recurrence. These results are supported by previous studies done before which are enlisted below:

1. Study conducted by **Rojanasakul** on 18 patients with 3 months follow up showed 94.4% healing rates with no incontinence
2. Study conducted by **Abcarian et al.**, on 25 patients with 8 weeks follow up showed high success rate with no changes in continence
3. Study conducted by **Neal Ellis** with 31 patients and 1 year follow up showed 94% healing rate with no incontinence
4. Study conducted by **Aboulian et al.**, with 25 patients and 24 weeks follow up showed 68% healing rates and no changes in continence. But in this study, 2 vaginal fungal infection were noted.
5. Study conducted by **Shanwani et al.**, with 45 patients with 9 months follow up showed 82.2% healing rate without incontinence and without complications
6. Study conducted by **Bleier et al.**, with 35 patients and 20 weeks follow up showed 94.4% success rate with no incontinence

GRADINGS USED FOR ASSESSMENT:

I. Post-operative wound healing was assessed and graded as follow:

1. Grade 1: complete epithelialization of the wound
2. Grade 2: healing wound with granulation
3. Grade 3: granulation with purulent discharge
4. Grade 4: non healing- wound did not heal at ten weeks or re-operation needed.

II. Continence graded as follows:

1. Category A: continent of solid and liquid stools and flatus (normal continence)
2. Category B: continent of solid and usually liquid stools but not flatus (no fecal leakage)
3. Category C: acceptable continence for solid stool but no control over liquid stools or flatus (intermittent fecal leakage)
4. Category D: continuous faecal leakage

CONCLUSION

On basis of the observational results and analysis of this “**STUDY ON SPHINCTER PRESERVING PROCEDURE LIFT (LIGATION OF INTERSPHINCTERIC FISTULA TRACT) IN PATIENTS WITH FISTULA IN ANO IN GOVT. STANLEY MEDICAL COLLEGE**”, it is concluded that, compared to fistulectomy, LIFT procedure is cost-effective, safe and preferred sphincter saving technique for Fistula-in-Ano as this technique has very minimal risk for incontinence and recurrence, and also has short duration of stay in hospital which helps in resuming early to normal daily activities.

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ANNEXURES

PROFORMA

- NAME
- AGE/SEX
- IP.NO
- DIAGNOSIS
- PROCEDURE DONE
- CO-MORBIDITIES
- BLOOD INVESTIGATIONS
- CHEST XRAY
- MRI FISTULOGRAM
- DATE OF SURGERY
- DATE OF DISCHARGE
- PER OPERATIVE DIFFICULTIES

DURATION OF SURGERY

PER OPERATIVE COMPLICATIONS

- POSTOPERATIVE PERIOD

PAIN

DISCHARGE

BLEEDING

INCONTINENCE

LENGTH OF HOSPITAL STAY

- POST OPERATIVE COMPLICATIONS:

PAIN / INCONTINENCE / RECURRENCE / RE-ADMISSION

AT 1 WEEK FOLLOW UP

AT 1 MONTH FOLLOW UP

AT 3 MONTHS FOLLOW UP

- HISTOPATHOLOGICAL REPORT

MASTER CHART

MASTER CHART FOR PATIENTS WHO UNDERWENT LIFT

NAME	AGE/S EX	IP NO	D U R A T I O N O F S U R G E R Y (m in ute s)	Intra oper ative diffi culti es	D U R A T I O N O F H O S P I T A L S T A Y (d ay s)	W O U N D H E A L I N G T I M E (w ee ks)	Post operati ve pain	W ou nd inf ect io n	inco ntine nce	rec urr en ce
1. PALANI	52/M	1901923	45	NIL	4	5	MILD	N O	NO	N O
2. RAFEEQ	31/M	1903398	50	NIL	4	4	MILD	N O	NO	N O
3. PAVITHRA	26/F	1903438	45	NIL	3	4	MILD	N O	NO	N O

4. ARUNKUMAR	52/M	1904041	35	NIL	5	5	MOD ERAT E	N O	NO	N O
5. DURGADEVI	35/F	1904968	40	NIL	4	6	MILD	N O	NO	N O
6. VINOTH	32/M	1908002	45	NIL	4	4	MILD	N O	NO	N O
7. IMMANUEL VICTOR	45/M	1906803	50	NIL	4	3	MILD	N O	NO	N O
8. MOHAMMED SHERIF	53/M	1906507	45	NIL	4	5	MILD	N O	NO	N O
9. SAMPANDU	37/M	1908808	40	NIL	4	5	MILD	N O	NO	N O
10. DHANALAKSHM I	49/F	1906508	50	NIL	4	5	MILD	N O	NO	N O
11. SUNDARAVINAY AGAM	50/M	1908984	30	NIL	4	4	MILD	N O	NO	N O
12. SELVAM	50/M	1907931	40	NIL	4	4	MILD	N O	NO	N O
13. BASHA	51/M	1907384	35	NIL	4	5	MILD	N O	NO	N O
14. KAMALANATHA N	45/M	1908848	32	NIL	4	4	MILD	N O	NO	N O
15. AMMULU	30/F	1910013	40	NIL	4	N O T H E A	MILD	Y ES	NO	Y ES

						LE D				
16. KANNAN	45/M	1910595	43	NIL	4	4	MILD	N O	NO	N O
17. BHAVANI	39/F	1912047	32	NIL	5	6	MILD	N O	NO	N O
18. DHANALAKSHMI	35/F	1911679	50	NIL	5	5	MILD	N O	NO	N O
19. PONRAM	47/M	1910953	31	NIL	5	4	MILD	N O	NO	N O
20. SURENDAR	27/M	1911213	43	NIL	3	7	MILD	N O	NO	N O
21. NAGARAJ	35/M	1914236	35	NIL	4	5	MILD	N O	NO	N O
22. VELU	35/M	1913415	40	NIL	5	4	MILD	N O	NO	N O
23. DEVI	27/F	1913357	33	NIL	3	4	MILD	N O	NO	N O
24. PARTHIBAN	39/M	1911588	53	NIL	4	6	MILD	N O	NO	N O
25. KRISHNAN	48/M	1912915	35	NIL	4	4	MILD	N O	NO	N O
26. DEVARAJ	56/M	1914850	43	NIL	5	5	MILD	N O	NO	N O
27. BASKAR	55/M	1914055	40	NIL	4	5	MILD	N O	NO	N O
28. TAMILSELVI	35/F	1914287	34	NIL	4	4	MILD	N O	NO	N O
29. KARTHIKEYAN	54/M	1913503	40	NIL	4	5	MILD	N O	NO	N O

30. SELVAKUMAR	26/M	1917483	45	NIL	3	6	MILD	N O	NO	N O
31. UDHAYAKRISHN AN	24/M	1917563	40	NIL	4	4	MILD	N O	NO	N O
32. SAMRAJ	31/M	1918165	35	NIL	4	5	MILD	Y ES	NO	N O
33. NAGARAJ	44/M	1916571	45	NIL	3	4	MILD	N O	NO	N O
34. ARUNACHALAM	39/M	1918189	35	NIL	5	6	MILD	N O	NO	N O
35. RAJU	29/M	1919802	52	NIL	4	4	MILD	N O	NO	N O
36. RAJESHWARI	36/F	1919795	35	NIL	4	4	MILD	N O	NO	N O
37. MUNIRATHNAM	55/M	1919314	44	NIL	5	5	MOD ERAT E	N O	NO	N O
38. TAMILSELVAN	29/M	1920131	39	NIL	4	5	MILD	N O	NO	N O
39. RAJAN	38/M	1919330	54	NIL	4	6	MILD	N O	NO	N O
40. GANESH	26/M	1926808	48	NIL	3	6	MILD	N O	NO	N O
41. RAMESH	33/M	1920059	35	NIL	4	4	MILD	N O	NO	N O
42. SUBRAMANI	50/M	1919794	43	NIL	4	6	MILD	N O	NO	N O
43. SARAVANAN	33/M	1920120	40	NIL	4	4	MILD	N O	NO	N O

44. RAMKUMAR	25/M	1922815	40	NIL	3	7	MILD	Y ES	NO	N O
45. SURESH	30/M	1922392	38	NIL	4	5	MILD	N O	NO	N O
46. DHANALAKSHMI	24/F	1922164	35	NIL	3	5	MILD	N O	NO	N O
47. NEELAKANDAN	37/M	1922807	35	NIL	4	4	MILD	N O	NO	N O
48. MANI	58/M	1923953	37	NIL	4	5	MILD	N O	NO	N O
49. RAMESH	41/M	1922788	35	NIL	4	6	MILD	N O	NO	N O
50. SHANMUGAM	58/M	1932751	48	NIL	4	6	MILD	Y ES	NO	N O
51. PURUSOTHAMAN	39/M	1924703	45	NIL	4	5	MILD	N O	NO	N O
52. VENKATESAN	58/M	1928339	42	NIL	5	6	MOD ERATE	N O	NO	N O
53. SANTHOSH	37/M	1931117	55	NIL	4	4	MILD	N O	NO	N O
54. ANANDHAN	42/M	1932556	35	NIL	4	5	MILD	N O	NO	N O
55. SIVASHANKAR	40/M	1933118	50	NIL	4	7	MILD	N O	NO	N O
56. KASINATHAN	43/M	1932672	41	NIL	4	7	MILD	N O	NO	N O
57. WILLIAM GAVASKAR	35/M	1931619	40	NIL	4	6	MILD	N O	NO	N O

58. SATHISH	29/M	1933423	35	NIL	3	7	MILD	N O	NO	N O
59. BHARATHIDASA N	22/M	1934363	43	NIL	3	4	MILD	N O	NO	N O
60. MUNUSAMY	42/M	1933480	40	NIL	4	4	MILD	N O	NO	N O
61. SUGUMAR	39/M	1933870	35	NIL	4	6	MILD	N O	NO	N O
62. ELANGO VAN	52/M	1935961	38	NIL	4	4	MILD	N O	NO	N O
63. SHANTHI	42/F	1936596	43	NIL	4	7	MILD	Y ES	NO	N O
64. LAVANYAPRIYA	26/F	1937755	40	NIL	3	4	MILD	N O	NO	N O
65. SASIKUMAR	21/M	1939246	42	NIL	3	5	MILD	N O	NO	N O
66. MURUGANANDH AN	44/M	1932870	35	NIL	4	4	MILD	N O	NO	N O
67. KAJAMOIDEEN	42/M	1939060	47	NIL	4	6	MILD	N O	NO	N O
68. SAMUEL	46/M	1937389	41	NIL	4	5	MILD	N O	NO	N O
69. NAGARAJ	24/M	1939570	35	NIL	3	7	MILD	N O	NO	N O
70. SASIKUMAR	46/M	1941113	35	NIL	4	5	MILD	N O	NO	N O

MASTER CHART FOR PATIENTS WHO UNDERWENT FISTULECTOMY

NAME	AGE	IP NO	D U R A T I O N O F S U R G E R Y (m in ute s)	Intraoperativ e difficulties	D U R A T I O N O F H O S P I T A L S T A Y (d ay s)	WO UN D HE ALI NG TIM E (wee ks)	Post oper ative pain	Wou nd infec tion	inco ntine nce	recur renc e
1. SRINIVASAN	34/ M	1902538	45	MINIMAL BLEEDING	5	9	NO	YES	NO	NO
2. JELIL BASHA	33/ M	1902823	37	NIL	5	5	NO	NO	NO	NO

3.	RAVIKUMAR	30/ M	1903408	35	SPHINCTE R INJURY	6	NOT HE ALE D	YES	YES	YES	YES
4.	PARIVALLAL	59/ M	1904151	25	NIL	5	6	NO	NO	NO	NO
5.	ARIFA	39/F	1905268	30	NIL	5	5	NO	NO	NO	NO
6.	ANITA	34/F	1905703	33	SPHINCTE R INJURY	6	NOT HE ALE D	YES	YES	YES	YES
7.	IYAPPAN	38/ M	1906307	29	NIL	5	7	NO	NO	NO	NO
8.	SIVA	28/ M	1906488	35	NIL	5	5	NO	NO	NO	NO
9.	SUNDARAMOO RTHY	51/ M	1906531	32	NIL	5	8	NO	NO	NO	NO
10.	YUVARAJ	35/ M	1907294	26	NIL	5	5	NO	NO	NO	NO
11.	HARIBABU	35/ M	1907484	37	MINIMAL BLEEDING	8	NOT HE ALE D	NO	YES	NO	YES
12.	KIRUBAKARA N	41/ M	1907902	44	NIL	5	9	NO	NO	NO	NO
13.	MANIKANDAN	26/ M	1908508	28	SPHINCTE R INJURY	8	6	NO	NO	NO	NO
14.	RAJESH	29/ M	1908758	35	NIL	5	5	NO	NO	NO	NO

15. KARTHICK	29/ M	1910575	45	SPHINCTE R INJURY	7	NOT HE ALE D	YES	YES	NO	YES
16. SANTHOSH	38/ M	1910933	40	NIL	6	6	NO	NO	NO	NO
17. GNANADHASA N	47/ M	1911013	30	NIL	5	6	NO	NO	NO	NO
18. LAKSHMANAN	38/ M	1911513	29	NIL	5	6	NO	NO	NO	NO
19. POLLAYAH	35/ M	1911788	25	NIL	6	7	NO	NO	NO	NO
20. SEKAR	33M /	1911879	26	NIL	4	6	NO	NO	NO	NO
21. MOHAN	40/ M	1912087	30	NIL	5	8	NO	NO	NO	NO
22. KHADER	35/ M	1912415	29	SPHINCTE R INJURY	8	7	YES	NO	NO	NO
23. JARINA	25/F	1913157	34	NIL	4	5	NO	NO	NO	NO
24. BALAJI	34/ M	1913615	30	NIL	5	7	NO	NO	NO	NO
25. ASHOK KUMAR	41/ M	1913903	30	NIL	5	6	NO	NO	NO	NO
26. SRINIVASAN	32/ M	1914155	25	SPHINCTE R INJURY	8	9	NO	YES	NO	NO
27. SANJAY	28/ M	1914336	34	NIL	5	7	NO	NO	NO	NO
28. ARUL	32/ M	1914487	35	NIL	5	7	NO	NO	NO	NO

29. PARTHASARATHY	40/ M	1914550	27	NIL	5	7	NO	NO	NO	NO
30. ARUL	30/ M	1916541	30	NIL	4	8	NO	NO	NO	NO
31. SALMONRAJ	23/ M	1917453	32	SPHINCTER INJURY	7	13	NO	NO	YES	NO
32. BALAJI	21/ M	1917543	40	MINIMAL BLEEDING	5	4	NO	NO	NO	NO
33. MURUGAN	37/ M	1918065	34	NIL	4	5	NO	NO	NO	NO
34. SRINIVASAN	58/ M	1918169	28	NIL	6	4	NO	NO	NO	NO
35. ELUMALAI	60/ M	1919294	43	SPHINCTER INJURY	8	14	NO	NO	YES	NO
36. SENTHILKUMAR	35/ M	1919350	36	NIL	5	6	NO	NO	NO	NO
37. ASLAM	36/ M	1919735	35	NIL	5	4	NO	NO	NO	NO
38. BALAJI	35/ M	1919752	25	SPHINCTER INJURY	7	7	NO	NO	NO	NO
39. CHELLAPPAN	45/ M	1919754	26	NIL	5	9	NO	YES	NO	NO
40. DEIVASIGAMANI	48/ M	1920140	42	NIL	4	8	NO	NO	NO	NO
41. PANKAJAM	31/F	1920161	35	NIL	5	9	NO	NO	NO	NO
42. KUMAR	46/ M	1920259	45	MINIMAL BLEEDING	8	5	YES	NO	NO	NO
43. ELLAMUTHU	38/ M	1922184	40	NIL	5	4	NO	NO	NO	NO

44. SARAVANAN	32/ M	1922352	35	NIL	4	6	NO	NO	NO	NO
45. RAJU	50/ M	1922515	43	SPHINCTE R INJURY	9	NOT HE ALE D	NO	YES	YES	YES
46. RAJA	37/ M	1922748	27	NIL	4	8	NO	NO	NO	NO
47. GOPI	39/ M	1922787	29	MINIMAL BLEEDING	5	4	NO	NO	NO	NO
48. BOOPATHI	58/ M	1924053	30	NIL	5	5	NO	NO	NO	NO
49. PERUMAL	42/ M	1924303	34	NIL	5	7	NO	NO	NO	NO
50. MANIBALAN	27/ M	1926508	36	NIL	4	6	NO	NO	NO	NO
51. NATARAJAN	46/ M	1928939	32	MINIMAL BLEEDING	5	4	NO	NO	NO	NO
52. JAGANATHAN	44/ M	1931217	29	NIL	5	5	NO	NO	NO	NO
53. VIJAYALAKSH MI	36/F	1931589	44	NIL	5	8	NO	NO	NO	NO
54. VAITHIYALING AM	50/ M	1932536	38	SPHINCTE R INJURY	8	NOT HE ALE D	NO	NO	NO	NO
55. JANARTHANA N	21/ M	1932652	41	NIL	5	5	NO	NO	NO	NO
56. SELVARAJ	39/ M	1932731	33	NIL	5	7	NO	NO	NO	NO

57. SASIKUMAR	30/ M	1932850	37	NIL	5	5	NO	NO	NO	NO
58. SATHIYA	27/F	1933098	41	MINIMAL BLEEDING	4	4	NO	NO	NO	NO
59. MEENA	27/F	1933403	29	NIL	4	8	NO	NO	NO	NO
60. PRABHAKARA N	32/ M	1933460	39	SPHINCTE R INJURY	9	4	YES	NO	NO	NO
61. SEKAR	49/ M	1933850	42	NIL	5	NOT HE ALE D	NO	YES	NO	NO
62. ANAND	25/ M	1934343	45	NIL	5	6	NO	NO	NO	NO
63. THIRUMALAI	33/ M	1935941	27	MINIMAL BLEEDING	5	4	NO	NO	NO	NO
64. SHEELA	23/F	1936576	25	NIL	4	6	NO	NO	NO	NO
65. BHARATHI	28/F	1937369	40	NIL	4	8	NO	NO	NO	NO
66. YESUDOSS	50/ M	1937735	37	NIL	5	6	NO	NO	NO	NO
67. ABRAHAM	31/ M	1939080	32	NIL	5	9	NO	NO	NO	NO
68. SRINIVASAN	55/ M	1939226	35	MINIMAL BLEEDING	5	6	NO	NO	NO	NO
69. KARPAGAM	44/F	1939540	37	NIL	4	7	NO	NO	NO	NO
70. MANIKAM	60/ M	1941143	43	NIL	5	5	NO	NO	NO	NO