

# A COMPARATIVE STUDY OF UNDERRUNNING OF HAEMORRHOIDS AND OPEN HAEMORRHOIDECTOMY

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## CERTIFICATE

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This is to certify that **Dr. D. PRABAKAR** prepared his dissertation entitled "**A COMPARATIVE STUDY OF UNDERRUNNING OF HAEMORRHOIDS AND OPEN HAEMORRHOIDECTOMY**" to be submitted to the Tamil Nadu Dr.M.G.R. Medical University in partial fulfillment of the requirement of the award of the Degree of Master of Surgery (General Surgery) September 2006 under my supervision and guidance. This dissertation is original and no part of this study has been submitted for the award of any other degree or diploma.

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# A COMPARATIVE STUDY OF UNDERRUNNING OF HAEMORRHOIDS AND OPEN HAEMORRHOIDECTOMY

## I. INTRODUCTION

### HAEMORRHOIDS

Haemorrhoids are dilated veins occurring in relation to anus. Haemorrhoids are abnormalities of the vascular cushions of the anus.

Haemorrhoids is one of the commonest clinical condition that we come across in our surgical practice. It is one of the commonest troublesome disease also. From the ancient days, that is from the period of Hippocrates, piles was treated by many modalities. Even at present it was claimed that all faculties of medicine - Siddha, Ayurvedha and Homeopathy are successful in practice. But most of them are not proven with scientific data. In Allopathy even though conservative managements are successful, in most of the cases surgery becomes necessary.

The term 'pile' on the other hand derived from the Latin word 'pila', a ball, can be optly used for all forms of haemorrhoids or piles for literally every such condition which produces a swelling of some kind, even though it may not show externally.

Various treatment options are available for haemorrhoids. However, the main aim of all the surgical procedures which we have followed in the management of haemorrhoids is "obliteration of haemorrhoidal veins".

In some of the procedures like ligation and excision, Park's procedure etc., there are chances of bleeding during surgery. In these procedures patients have considerable postop pain and also raw areas which take 4-6 weeks to heal. If the area happens to be big and there is no mucocutaneous junction between the 3 leaves of clover there is always a possibility of stricture.

In our study, we have tried the ligation therapy by "underrunning of haemorrhoids", which yields better result with minimum discomfort to the patient and avoiding the complications.

The purpose of this study is to evaluate a treatment option which is less traumatic to the patient and gives maximum benefits.

## II. AIM

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- ❖ To study the epidemiology and pattern of clinical presentation of haemorrhoids.
- ❖ Compare underrunning with routine ligation and excision therapy (open haemorrhoidectomy) for haemorrhoids in relation to
  - 1) Operative technique
  - 2) Blood loss during the procedure
  - 3) Immediate post op. problems & complications
  - 4) Incidence of long term complications like anal stenosis
  - 5) Results on followup (upto 6 months)

### III. MATERIALS & METHODS

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This study is done in patients of our unit in department of General Surgery at Govt. General Hospital, Chennai-3 between August 2003 and December 2005.

Sixty patients are selected for the study, with thirty patients in each group.

***Inclusion Criteria:***

Only elective cases were included in the study. Patients with II or III haemorrhoids only are taken into the study.

***Investigation:***

1. Hb% done for all patients.
2. Patients above 40 years were subjected to sigmoidoscopy to rule out any proximal lesions (which if present, were excluded from the study).

After selecting the patients, they were randomly allotted into the following two groups.

***Surgical Procedures:***

1. Open technique haemorrhoidectomy.
2. Under running of haemorrhoids, using atraumatic 1-0 chromic catgut.



The details of the surgical procedures are described later.

All the patients were given three doses of Ampicillin 1 gm IV & Inj. Metronidarole 500mg IV.

I dose preoperatively, other doses 6 hours & 24 hours post OP.

Analgesics were given as when required basis.

Sitz bath started on 1<sup>st</sup> POD.

***Follow up:***

All the patients were followed up post operatively. Patients were discharged on third post operative day, if there were no complication.

Patients were reviewed after 2 weeks, 6 weeks, 6 months. PR was done after 2 weeks. PR & Proctoscopy at 6 weeks and 6 months.

## IV. REVIEW OF LITERATURE

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### 4.1 DEFINITION

Haemorrhoids: Syn-piles (Greek: haima-blood, rhoos-flowing).

'Anal cushions' are aggregations of blood vessels (arteroles, venules and arteriolar venular communication), smooth muscle and elastic connective tissue in the submucosa that normally reside in the left lateral, right anterolateral and right posterolateral anal canal. Haemorrhoids are thought to result from degeneration of the smooth muscle and fibroelastic tissue which 'supports the cushions, allowing them to prolapse into the anal canal.

Anal cushions are normal structures that have a rich arterial supply leading directly into distensible venous spaces. They help to seal the upper anal canal and contribute to continence of flatus. Constipation & straining disrupt the supporting framework of cushions, causing them to become displaced and congested.

In some patients, this is aggravated by a tight internal sphincter which leads to high intra anal pressure during a bowel action.

### **FUNCTION OF CUSHIONS:**

Closure of anus is dominantly an activity of the muscles and nerves of the pelvic floor. However, a fine tuning mechanism exists to close the final millimeter. The haemorrhoids bulge to effect this closure

by rapid filling of veins. These haemorrhoidal veins are directly served by an arterial short, which can rapidly fill then under pressure. Arterial and venous pressure is evidenced by the squirting of bright red blood, from prolapsing haemorrhoids, when the sphincter is relaxed. The sphincter normally keeps these veins tamponaded when the mechanism is closed as the basal pressure is exerted by the sphincter muscle.

#### **4.2 INCIDENCE:**

Incidence apparently increases with age, and it seems likely that at least 50% of people over 50 years have some degree of haemorrhoids formation and haemorrhoids are encountered in people of all ages including occasionally young children.

Men seem to be affected roughly twice as frequently as women.

**Table-1 : Age incidence**

<b>Author</b>	<b>Over the age of 50 years</b>
Clark et al (1969)	50%
Cuschieri	50%
U.K. Jain (1989)	16%

### **4.3 CLASSIFICATION:**

Haemorrhoids are classified according to the site of origin as

- 1) Internal haemorrhoids - which is in the upper 2/3<sup>rd</sup> of the anal canal & lined by columnar celled epithelium and above the dentate line.
- 2) External haemorrhoids - lies in the lower 1/3<sup>rd</sup> of anal canal, lies below dentate line
- 3) Internoexternal - when both are present in  

Haemorrhoids
combined form.

#### **4.3.1 Internal haemorrhoids**

##### ***Pathological anatomy:***

Haemorrhoids are submucosal swellings covered with mucosa which bulge into the lumen of anal canal and lower most centimeter or so of the rectum and which contains varicose venous plexus (chiefly submucosal or internal hemorrhoidal plexus) which are mainly radicles at superior rectal (haemorrhoids) veins.

In addition to veins, the contents of haemorrhoids includes a small arterial twig, which is one of the ultimate branch of superior rectal (hemorrhoidal) artery and also a certain amount of loose submucous and subcutaneous areolar tissue surrounding the vessels.

#### **4.3.2 Pathogenesis**

- i. Graham Stewart (1963) suggested that internal haemorrhoids could be divided into two categories.
  - 1) Vascular haemorrhoids: Seen mainly in younger persons, in which the distended veins are the main component, and
  - 2) Mucosal haemorrhoids: More often encountered in older persons, which are composed in large measure of thickened mucosa.
- ii. Thomson (1975) favours the suggestion that internal haemorrhoids are due simply to a sliding down of a part of the lining of anal canal as a result of stretching or fragmentation of the muscularis submucosae ani.

#### **4.4 AETIOLOGY:**

From the aetiological point of view internal haemorrhoids may be divided into two main category.

- 1) Idiopathic haemorrhoids where no evident organic venous obstruction is present.

These cases represent the vast majority of patients with haemorrhoids encountered by the surgeon.

- 2) Internal haemorrhoids: associated with a definite organic obstruction to the venous return from the superior hemorrhoidal veins.

Which is a rare entity, seen in the following condition, Cirrhosis of liver, Thrombosis of portal veins, Abdomen tumours, Pregnancy, Ca. of middle 1/3 of rectum.

***Pregnancy:***

In addition, it causes increased vascularity and laxity of the tissues of pelvis which result from it. So, haemorrhoids are common in III trimester. Usually hemorrhoidal condition returns to complete normal state following delivery.

3.4.1 The following may have played a part in the production of hemorrhoidal condition in any individual patient.

***a) Heredity:***

Certain families appear to be specially predisposed to the development of haemorrhoids. So that many or all its member become affected, often at an early age presumably as a result of some structural weakness of the wall of the hemorrhoidal veins.

***b) Anatomical & physiological factors:***

The superior rectal veins being the tributaries of portal vein have no valves.

In erect posture, the entire column of blood in the superior rectal, Internal mesenteric, splenic and portal veins from anal canal to liver bears directly on the internal hemorrhoidal venous plexus. In the ordinary way, however, the haemorrhoidal veins in the submucosa of the anal canal are firmly supported by the close opposition of the walls of the canal under the contraction of anal sphincter.

During defecation anal canal opened to atmospheric pressure and pressure on the portal system and also greatly increased by straining.

Compression of unsupported superior hemorrhoidal veins in the loose submucosal connective tissue in the lower rectum by hard and constipated stools as they descend.

Contracting muscle of the rectal wall → constriction of veins as they pass through the muscular tissue → ↓ venous outflow.

All these lead to distension of venous plexus → chronic process → haemorrhoids

**c) *Constipation, Diarrhoea & Straining at defecation:***

The descending effect of normal defecation on the haemorrhoidal plexus may be greatly magnified if the patient suffers from constipation by the prolonged and repeated straining which leads to haemorrhoids.

Diarrhoea associated with tenesmus and futile straining may have a similar but slightly less injurious effect. Faulty habit of defecation and straining voluntarily → same effect.

**d) *Epidemiology & Diet:***

Dennis Burkitt (1972) believes that food containing less fibres → delay in fecal transit time in the bowel → increase incidence of constipation → straining to defecate → increase venous pressure and contribute to the formation of haemorrhoids.

**e) *Fragmentation of connective Tissues - "Sliding Lining theory"***

Suspensory tissues hold the internal haemorrhoids in the proper position within the proximal anal canal. If those tissues are disrupted either by prolonged straining at defecation or by ageing process, the haemorrhoids will prolapse out. This is termed "sliding lining theory of Teramoto et al".

**g) *Alteration of sphincter tone & Elevation of Anal Pressure:***

Hancock & Smith (1975) and Arabi et al (1977) observed significantly higher anal pressure in 100% of haemorrhoids patients. The internal sphincter contributes approx 80% of the basal pressure. Peter lord by chance found that sphincter stretching reduced haemorrhoids symptom. Undoubtedly, he avulsed the sphincter and lowered the pressure.



#### **4.5 NUMBER & POSITION OF INTERNAL HAEMORRHOIDS**

Though the number and arrangement of internal haemorrhoids in the anal canal would vary from patient to patient, the distribution is remarkably constant. In great majority of patients there are three main haemorrhoids which occupy well defined position.

Lat. Haemorrhoids are frequently arranged in 3 groups at 3 O' clock (left lateral), 7 (right-post), 11 (Rt. Ant) position, with the patient in lithotomy position. This distribution has been ascribed to the arterial supply of the anus whereby there are two subdivision of the right branch of the superior rectal artery, but the left branch remaining single, but this is now known to be atypical.

Goligher found 60-70% of patients with internal haemorrhoids have smaller secondary haemorrhoids in between the major three.

#### **4.6 PARTS OF HAEMORRHOIDS**

Each principal haemorrhoids can be divided into three parts.

##### **1) *Pedicle***

Situated at anorectal ring. As seen through proctoscope, it is covered with pale pink mucosa, occasionally a pulsating artery can be felt in this situation.

##### **2) *The internal haemorrhoids***

Which commences just below the anorectal ring, it is bright red or purple and covered by mucosal membrane and it is variable in size.

### 3) *An external haemorrhoids*

Associated haemorrhoids lies between dentate line and anal margin. It is covered by skin.

#### 4.7 DEGREES OF HAEMORRHOIDS FORMATION:

Int. haemorrhoids vary in size and they are classified into four degrees. They are

- 1) I<sup>o</sup> Haemorrhoids - Project slightly into the lumen of anal canal but never prolapse outside - may or may not bleed.
- 2) II<sup>o</sup> Haemorrhoids - The mucosal surface corresponding to haemorrhoids are appearing at the anal orifice while the patient is straining, but returns spontaneously to anal canal when the motion has been passed and the defecation effect has ceased.
- 3) III<sup>o</sup> haemorrhoids - Prolapse outside the anal canal (with every bowel motion and occasionally with straining associated with exertion especially when standing need to be replaced manually and then stay reduced.
- 4) IV<sup>o</sup> haemorrhoids - are permanently prolapsed outside and more prone to thrombosis. They are painful and often bleed profusely. The overlying mucosa often becomes Keratinized.

In the past the term interno external haemorrhoids has often been reserved for this advanced state of affairs.

#### 4.8 SYMPTOMS OF HAEMORRHOIDS:

Bleeding and prolapse are the two cardinal symptoms of internal haemorrhoids.

##### 1) *Bleeding:*

Initially occur as a slight streak of blood on the motion - toilet paper especially when patient is constipated. Later patient may find that there is a steady drip of blood for a few minutes after the motion has been passed.

At a still later stage, when the haemorrhoids have become much larger, bleeding may occur apart from defecation at any time when the haemorrhoids prolapses and become congested.

Stelzner (1958) emphasized that the blood which escapes from haemorrhoids is bright red in colour and therefore arterial rather than venous in character. He explained this fact by his finding of AV communications in the corpus cavernous rectum, making it a sort of erectile tissue.

**Table-2 : incidence of bleeding**

<b>Author</b>	<b>Percentage of cases</b>
Clark et al (1969)	62%
U.K. Jain (1989)	96%
Emin a carapetti (1998)	70%

**2. Prolapse:**

Described earlier.

<i>Author</i>	<i>Percentage of cases</i>
Clark et al (1969)	70%
U.K. Jain (1989)	75%
Emin a carapetti (1998)	68%

**3. Anal Discharge:**

Mucous discharge from the rectum can occur in any case with prolapsing haemorrhoids and may cause distress to the patient by soiling the underclothing. This is more in internal haemorrhoids.

**4. Anal Irritation:**

Irritation of perianal skin, due to becoming moist and sodden from mucus discharge is almost invariable accompaniment of large III<sup>o</sup> haemorrhoids.

**5. Symptoms of secondary anaemia:**

Like breathlessness on exertion, dizziness on standing, lethargy, palpitation and pallor may be the presenting features due to severe blood loss.

**6. Patient with haemorrhoids tend to become depressed and introspective.**

**4.9 DIAGNOSIS OF HAEMORRHOIDS**

a. History

b. Examination

- i) Inspection: of perianal and anal region, look for the signs of varying degrees of prolapse.
- ii) Palpation: Unless it is complicated by thrombosis or fibrosis of submucous connective tissue of haemorrhoids on chronic prolapse, the haemorrhoids will not be palpable.
- iii) Proctoscopy: varying degrees of haemorrhoids prolapse and bleeding can be seen. Other pathology also should be ruled out.
- iv) Sigmoidoscopy: This become specially important when proctoscopy fails to reveal any significant haemorrhoids to account for late patient bleeding. It should be routinely done for the patient over 40 years. By doing this occasionally as entirely unsuspected rectal or sigmoid malignancy or irritable bowel disease is detected.
- v) Abd. Exam - to r/o pelvic tumours.

#### **4.10 COMPLICATION & SEQUELAE OF HAEMORRHOIDS:**

- 1) Profuse haemorrhage: Is not rare. Most often it occur in the II haemorrhoids. The bleeding occurs mainly externally, but it may continue internally after the bleeding haemorrhoids

has retracted or has been returned. Managed conservatively, by bed rest, sedation, adrenaline soaked local compress and blood transfusion.

2. Stragulation: II<sup>o</sup> & III<sup>o</sup> haemorrhoids prolapse, and become gripped by this external sphincter and causes pain.
3. Thrombosis: Haemorrhoids become dark purple or black and feel solid association with edema of anal margin.
4. Infection: Of thrombosed haemorrhoids - can lead to abscess or portal pyaemia.
5. Ulceration: Can occur in the strangulated haemorrhoids.
6. Gangrene: Occurs when strangulation is tight enough to constrict the arterial supply of haemorrhoids.

#### **4.11 TREATMENT OF HAEMORRHOIDS:**

##### ***A. Local treatment:***

According to the principles, they are classified as follows:

##### ***i) Medical Methods:***

Which reduce straining at defecation by modification of diet using high fibre containing foods & laxatives.

*ii) Fixation Procedures:*

The response to tissue injury is healing, which entails deposition of collagen and bonding of a scar - such a scar will attach hemorrhoidal tissues to the underlying muscle, thereby preventing the prolapse. Methods using this principles are,

- a) Chemicals (sclerosants) used to injure the tissue → sclerotherapy.
- b) Ischemia - tissue injury → Rubber banding
- c) Heat used to cause tissue injury →infrared coagulation, Monopolar & bipolar electrocoagulation.
- d) Freezing used to cause tissue injury → Cryotherapy
- e) Incisions (ulcers) created for fixation above the dentate line - by using laser.

*iii) Tissue Excision Methods:*

Removing the hemorrhoidal masses by surgical excision or by laser. The different types of Haemorrhoidectomy are

- a) Ligation & excision
- b) Submucosal haemorrhoidectomy
- c) Excision with suture
- d) Excision of the entire haemorrhoid bearing area with suture.

e) Excision with clamping, cautery and lasers.

*iv) Treatment using the principle of rectal pressure reduction:*

a) Lord's manual anal dilatation

b) Lateral sphincterotomy.

*v) Excising the haemorrhoids and repositioning the anal cushions → Stapled anopexy*

***General Treatment:***

a) Reassurance

b) Treating anaemia and improving general health

c) Appropriate therapy for secondary causes.

***3.11.1 Injection Treatment***

Mainly directed at the control at bleeding. First person to practice injection of haemorrhoids was Margan of Dublin (1869) who treated a case of haemorrhoids with an injection of persulphate of iron.

a) Principle: Intravariceal Injection → Fibrosis → Fixation of haemorrhoids.

b) Possible modes of action:

i) Conceivably the fibrous tissue that forms surrounds and constrict, possibly completely obliterate the superior hemorrhoidal vessel in the submucosa → this will protect



the veins of haemorrhoids itself from being distended by increased back pressure in the portal system during the exertions of defecation and straining → no bleeding.

ii) The fibrosis may also increase the fixation of haemorrhoids or its pedicle to the underlying muscular coat and in that way it may reduce the amount of prolapse.

c) Indications:

i) In I<sup>o</sup> haemorrhoids - Excellent prospect of complete cure or long freedom from symptoms.

ii) In most II<sup>o</sup> Internal haemorrhoids (early stage)

iii) In III<sup>o</sup> internal haemorrhoids - Temporary palliation in patients whose extreme age, poor general condition or domestic or business continues make it desirable to avoid or postpone operation.

d) Contra indication:

Injection should not be given through the skin covered components of large internal or external haemorrhoids.

Patients with associated fissure in ano, chronic external haemorrhoids, large internal haemorrhoids, thrombosed internal haemorrhoids, in pregnant patients as they may induce premature labour, In Ulcerative colitis or Chrons disease with haemorrhoids.

e) Practical details of injection therapy:

Most British surgeons found that injection of weak Carbolic solution into the submucosa just above the anorectal ring to be much more satisfactory for routine use than injection into the haemorrhoids itself.

f) Instruments and sclerosants required:

❖ Gabriel syringe

❖ Solution A 5% of phenol in almond or arachis oil is commonly recommended. The total amount of solution used on the average case having injection treatment is 12-15 ml.

g) The actual injection procedure:

It is an out patient procedure, No bowel preparation needed, Proctoscope inserted, AR ring visualised, Mucosa at the proposed site of injection is swabbed with pledget of cotton wool, Needle is inserted into the submucosa by finding the position of the point of the needle from the gap between shoulder of the needle and surface of the mucosa, Injection given submucosally which should elevate the mucosa (which balloons up in an edematous wheal with obvious vessels crossing it. The so called 'striation sign'. Inject all three haemorrhoids starting from right post first. Amount of fluid injected at each site 3-5 ml.

h) After care following injections:

- ❖ Patients to be informed that they will have mild discomfort in the anal region or rectum following each defecation for a few days.
  - ❖ Patients instructed to replace any prolapsing haemorrhoids.
  - ❖ Patient can resume their regular activities on leaving the hospital.
- i) Immediate effects of injection:
- ❖ Pain and discomfort - lasts for 30-60 sec.
  - ❖ Bleeding occasionally controlled by pressure with cotton
  - ❖ Faintness and collapse - rarely
  - ❖ Rapid cessation of symp. Usually within 24-48 hrs bleeding will stop.
  - ❖ The reaction to the injection in the rectal wall: First induration appears for about 2-2.5 cm in diameter from anorectal ring to the upper part of haemorrhoids and fibrosis → Fixation of haemorrhoids to the fibrous submucosa - patients are relieved of bleeding and prolapse from haemorrhoids.

- ❖ Injection into the mucosa itself cause necrosis and ulceration.

j) The need for further injections.

Very subsidiary role because of fibrosis caused by the previous injections and they are essentially reserved for patients in whom symptoms continue to recur.

During second injection, high injection is not possible, one can inject into the haemorrhoids itself.

k) Complications

- 1) Necrosis & formation of injection ulcers - occurs occasionally

Can be prevented by

Limit the quantity to 5ml each site, Avoiding injection into the mucosa, Avoiding very strong solution for injections like carbolic acids.

Necrotic ulcers appear 3 weeks after injections & heals spontaneously within another 3-6 wks.

- 2) Submucous abscess - due to deep injections into prostatic capsule.
- 3) Fibrosis, if excessive → stricture

- 4) Paraffinoma - Persistent fibrotic tumour around oil retained in the bowel wall.

#### ***4.11.2 Rubber band ligations:***

This operation was developed by Barron (1963, 1964) as an modification of an out patient ligature method originally proposed and practiced by Blaisdell (1958).

- a) Principle: Is to apply rubber ring (bands) Ligature through a proctoscope to the base of the pedicle of mucosa covered part of internal haemorrhoids with a special instrument, which cause ischemic necrosis in haemorrhoids and haemorrhoids sloughs off spontaneously within a few days.
- b) Instrument & Procedure: Mc Givney Ugator (modified Barron's) of UK is the ideal instrument.
  - ❖ Through the proctoscope, the ligator is introduced and brought to bear on the mucosal part of most prominent haemorrhoids. The Long Allis tissue forceps or alligator forceps are next passed through proctoscope and through the drum on the end of ligator, with the haemorrhoids is seized and drawn well into the drum whilst the distal end of the latter is firmly pressed against

anal canal wall special care being taken to see that its inferior edge is atleast 6 mm above pectinate line.

- ❖ By closing the handles of ligator the rubber rings are pushed off the drum and instantly close on the base of haemorrhoids. The resulting strangulated tissue is usually about the size of a small cherry.

c)           Precautions:

- ❖ Rings applied atleast 6mm above pectinate line
- ❖ Not more than two haemorrhoids should be banded at each session and three weeks atleast should elapse between each treatment.

d)           Indication: Best for II<sup>0</sup> haemorrhoids.

e)           Advantages:       No anaesthesia is required.  
Virtually a painless procedure.

f)           Disadvantage: It does nothing to remove the skin covered component of the haemorrhoids or an associated skin tag, Barron (1964) says that it may shrink or can be removed under LA as a outpatient procedure. Secondary haemorrhage may occur.

***3.11.3 Manual dilatation of the anus & lower rectum  
(Lord's Procedure - MAD)***

A) Principle - Petel Lord (1968, 1969) has suggested that int. haemorrhoids are caused by circular constricting fibrous bands in the wall of the lower rectum or of the anal canal, which interfere in some way with normal defecation, leading to abnormal raising of the intrarectal pressure during the act to consequent venous congestion. He claims that if these bands are broken down under anaesthesia by stretching the anal canal and lower rectum with 4 fingers of both hands inserted as far as they can reach into the bowel and dilating in all directions, the haemorrhoids can be corrected in the great majority of patients with first degree piles.

b) Follow up: 1) We should keep a moistened plastic sponge in to the lower rectum and anus to prevent the development for haematoma in the submucosal and in the perianal region.

c) Complications:

❖ Splitting of anal & perianal skin, Mucosal prolapse, Anal Incontinence.

d) Advantage: 84% success rate,

Shorter hospital stay and rapid return to work.

#### ***4.11.4.Cryosurgery:***

a) Principle: Using cryogenic techniques (cryodestruction) living human tissue - haemorrhoids are freezed. Such tissue, after being frozen solid undergoes a gradual necrosis, due partly to thrombosis of microcirculation and fall often spontaneously.

b) Advantages:

1) Painless 2) No GA required 3) Can be done in OP dept. itself.

c) Equipment:

Essential instrument is the cryoprobe which has an active end 3-4 cm long, capable of being cooled by circulation through it of liquid nitrogen or nitrous oxide gas. Liquid nitrogen can produce a reduction of temperature to  $-180^{\circ}\text{C}$  as compared to  $-70^{\circ}\text{C}$  with nitrous oxide, but liquid nitrogen using probe is very costlier.

d) Anaesthesia:

Inferior haemorrhoidal block (LA) given to prevent anal discomfort and reflex anal spasm.

e) Procedures



- ❖ A bivalve speculum to expose the haemorrhoids. Cryoprobe applied to the surface of hemorrhoidal mass and freezing should continue for 3 min. Freezing (haemorrhoids will turn white) should extend 6-7 mm. After 3 min, wait for 10-12 seconds to free the probe from haemorrhoids by spontaneous removal of first from the active end otherwise the haemorrhoids will tear and cause bleeding.
  - ❖ In another method two probes are used simultaneously to freeze the attachment of haemorrhoids to the anal canal. The object to make the tissue width of 6-7 mm which the freezing process extends from either side might confidently be expected to bridge, thus destroys the haemorrhoids without having to free its entire substance.
- f) After care: usually 2 to 3 haemorrhoids could be dealt at a same time
- ❖ Patients allowed to return home within 20-30 min. Oral analgesics, Laxatives given. External anal pad of wool to absorb discharges.
- g) Results: Haemorrhoids fall off within 2 weeks and resulting would heals completely with 4 weeks.

h) Complications:

- ❖ Bleeding - very rarely, Profuse serous anal discharge, Pain during first few days- to a week, May need further treatment because of recurrent haemorrhoids or skin tags.

***4.11.5 Infra red coagulation:***

This infra red coagulator was developed by Nath et al (1977) for coagulating bleeding patients and was adapted to the elective treatment of haemorrhoids by Neiger (1979).

***a) Source & Instrument:***

14 volt Wolfram Halogen lamp with a gold plated reflector is the source of IR radiation. The rays are focused through a light shaft or fiberoptic cable which terminated in a probe or pistol for directing the irradiation onto the tissues. Tip of the probe is covered with a polymer cap through which the rays can pass but which, because of hydrophobic character of the polymer, does not adhere to the irradiated mucosa.

***Procedure:***

Like injection therapy probe should be kept firmly above the haemorrhoid and below the anorectal ring and current is switched on for the momentary exposure. All 3 haemorrhoids are treated simultaneously.

***Advantage:***

- ❖ Painless, has fewer complications and is more acceptable to the patients.
- ❖ Probably preferable to injections or rubber band ligation for II<sup>0</sup> haemorrhoids.

***4.11.6. Hemorrhoidectomy***

The surgical treatment of haemorrhoids which comprised excision ligation was one of the earliest exercises in operative surgery and was practiced even in ancient Greece and Rome (Park's, 1955). These very same procedures have been passed down through the ages and represent in essence the 5 main types of operation available for the management of haemorrhoids at present day.

***Indications:***

- ❖ III, IV haemorrhoids
- ❖ Failed non-operative treatment of II haemorrhoids
- ❖ Fibrosed haemorrhoids
- ❖ Internal external haemorrhoids with large external portion.

**1) *Ligation & Excision: Open technique***

Known as Milligan Morgan operation.

With the patient anaesthetized and in the lithotomy position, a gentle two finger dilatation of the anal canal is performed.

Dunhill forceps are placed on the perianal skin just outside the mucocutaneous junction, opposite to the primary haemorrhoids positions (left lateral, rt. Anterior and rt. Posterior Gentle traction on the forceps brings the internal haemorrhoids into view. As they are pulled down, a second Dunhill forceps can be applied to the main bulk of each haemorrhoidal mass; further traction exposes the pedicles of the haemorrhoids and produces the so called "triangle of exposure".

Once the triangle of exposure has been achieved the haemorrhoids are ready for removal by dissection and ligation/excision. For a right handed surgeon, it is convenient to start with Lt. lateral haemorrhoids. The operator takes the Lt. lateral pair of haemostats in the palm of his hand and places the extended forefinger in the anal canal to support the internal haemorrhoid. In this way traction is applied to the skin of the anal margin. With scissors, a V-shaped cut is made, each limb of which is placed on either side of the skin holders haemostat. This cut traverses the skin and corrugator cutis ani. Exerting further traction a little blunt dissection exposes the lower border of the internal sphincter. A transfixing ligature is applied to the pedicle at this level.

Each haemorrhoids, having been dealt within this manner is excised 1.25 cm distal to the ligature. The stumps of ligated haemorrhoids are returned to the rectum by tucking a piece of gauze

into the anal canal. Hemostasis secured anal pack kept. T Bandage applied.

2) ***Submucosal haemorrhoidectomy:*** Parks proposed a modification of the ligature operation originally suggested by Petit (1774) and Cooper (1809) which may be termed as submucosal haemorrhoidectomy with high ligation.

3. ***Excision with suture***

a) Excision of individual haemorrhoids with suture over a clamp. This method was introduced by Mitchel of Belfast.

b) Excision of individual haemorrhoids and immediate suture without a clamp (closed techniques haemorrhoidectomy).

This procedure was introduced by Ferguson and has been wider adapted in U.S. In this routine high ligation haemorrhoidectomy done, the raw wound approximated with fine suture material. At the end of surgery only 3 sutured wound will be seen.

4. ***Excision of the entire haemorrhoids bearing area with suture:***

Introduced by Whitehead (1882) of Manchester which provides for excision of the entire haemorrhoids bearing area of the anal canal as a tubule segment, the lower area of its rectal mucosa then being sutured circumferentially to the skin of anal canal.

***Disadvantage:***

- ❖ More blood loss.
- ❖ Removal of sensitive canal and lower rectal mucosa often interfered seriously with the normal mechanism of continence.
- ❖ Incidence of stricture is high.
- ❖ Recurrence can occur.

**5. *Excision with clamp, cautery & lasers***

It is originated with Cusack (1846) of Dublin. It is less painful procedure than others.

Reactionary or secondary haemorrhage is the only disadvantage.

The Nd: YAG laser has abscess as a complication at a higher rate than other techniques. This is likely attributed to the inadvertent puncture of the sphincter by the laser beam if it is held in one place for even more than a second. Necrotic tissue in the intersphincture space may become infected with a resultant of closed space abscess.

***Choice of technique for formal hemorrhoidectomy***

In the high of Goligher's own inv. he made out certain points as follows:

- 1) Preliminary sphincter stretching or sphincterotomy for reducing the post op pain is not advised since the disadvantage of occurrence of minor degrees of temporary incontinence.
- 2) The ordinary ligature & excision (Milligan & Morgan) Operation is the most general serviceable procedure as
  - ❖ It is quick and simple to perform
  - ❖ Requires no special instrument
  - ❖ Can be performed easily by average surgeon and surgical trainee
- 3) All other procedures have no special adv. over this.
- 4) In excision with primary suturing invariable wound break down during the early post op period → large raw area → Fibrosis.

Fibrosis increases chances for stenosis.

#### ***4.12.2 Post Op. management after Milligan Morgan***

- 1) Analgesics and laxatives
- 2) Anal pack is removed 6 hours after surgery. Sitz bath from 1<sup>st</sup> POD.
- 3) Enema, if not passed motion after 4-5 days.

- 4) PR - to see for anal stenosis done after 3 weeks (not in 1 week)
- 5) Reviewed after 2 weeks, 6 weeks, 6 months.

#### ***4.12.3 Post OP complication after haemorrhoidectomy:***

1. Pain - Usually tolerable, may be severe during first motion  
Managed with adequate analgesics and local xylocaine jelly.
2. Retention of urine - managed by reassurance, analgesics, hot bath.
3. Formation of skin tag.
4. Fissure, stricture
5. Reactionary or secondary haemorrhage.
6. Development of abscess / fistula - rare.
7. Recurrence

### **STAPLED ANOPEXY**

#### ***Principle:***

Principle is to carry out excision of a circumferential strip of mucosa above the dentate line and to simultaneously close the defect. This pulls the mucosa and therefore the anal cushions back up into their normal position thus restoring the anatomy of the anal canal. This is



done using a specially designed proctoscope and circular end-to-end anastomosing stapler.

***Procedure:***

A purse string is inserted in the rectal mucosa 4 cm above the dentate line, the stapler is inserted and purse string tightened around the centre rod. The stapler is then fired, simultaneously excising the mucosa and stapling the two cut ends together. Immediately after the procedure the staple line must be inspected for the bleeding points which can be over sewn.

This cause virtually no post operative discomfort if the staples are placed in the correct position and it can be carried out as a day case with reasonable safety.

***4.12.5 Choice of methods best in practice (Goligher)***

- ❖ Formal haemorrhoidectomy is the most effective treatment for all form of internal haemorrhoids (esp. II & III) since it gives excellent long term results.
- ❖ For I & medium sized II haemorrhoids - best is injection therapy with phenol - occasionally rubber band ligation is also a better therapy.

#### ***4.12.6 Management of prolapsed, thrombosed internal haemorrhoid:***

##### ***A - Elective haemorrhoidectomy following conservative line of management:***

Bedrest, sedation, antibiotics, hot baths, soothing compresses, mild laxatives. Either in a week or two, swelling subsides and elective haemorrhoidectomy is carried out.

##### ***B - Emergency surgical procedure:***

###### **A) Haemorrhoidectomy**

Indication: Strangulation, thrombosis, gangrene of haemorrhoids

Risks - Formation of anal stricture

Portal pyaemia in case of infected haemorrhoids.

Advantage- Patient needs not stay longer in hospital. Patients discomforts relieved immediately and underlying haemorrhoids treated permanently.

b) Lord's MAD: Also can be used as a useful alternative treatment to surgery.

c) Limited haemorrhoidectomy: Grosz (1990) suggests simple incision of any thrombosed haemorrhoids, while Leald and Gudgeon produced instant pain relief without further need for surgery if only one haemorrhoid was excised.

They termed this limited haemorrhoidectomy.

#### ***4.13.1 Thrombosed ext. haemorrhoids***

Pathogenesis: Straining at defecation → rupture of one of the ext. haemorrhoids veins → escape of blood into subcutaneous tissue → Clotting → Painful perianal swelling → anal hematoma sometimes clotting occur in the veins of external or subcut. haemorrhoidal plexus.

Symp: Sudden development of painful lump of the anal margin following hard constipated motion.

- ❖ Continuous pain aggravated by defecation.
- ❖ Occasionally bleeds if it ruptures spontaneously.

#### ***Signs:***

Round tender blue swelling at the anal orifice covered with tense stretched skin, through which the bluish colour of the contained clot to be appreciated.

#### ***IV. Subsequent course of haematoma:***

- ❖ Spontaneously regress after a week or ruptures, if infected → abscess / fistula.

#### ***Treatment***

- a) By expectant conservative treatment: Analgesics, sedation, hot baths, laxatives, observe for spontaneous regression.

- b) Operative Treatment: If pain persists or infected, hematoma incised and clots let out under LA. derroofing of hamatoma should be carried out.

#### ***4.13.2 Anal Skin tags:***

Skin tags are hypertropied folds of perianal skin. It may be,

- i) Idiopathic - Probably due to healed anal hematoma. They are soft pliable and are covered by normal skin.

Treatment: excision under LA.

- ii) Secondary: Found in fissure in ano, pruritus ani, they are stiff and aedematous.

Treatment: Excision & treat the cause.

## V. SURGICAL PROCEDURE

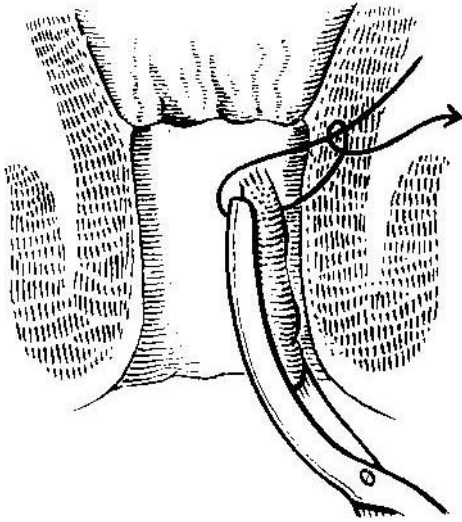
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### **UNDER RUNNING OF HAEMORRHOIDS**

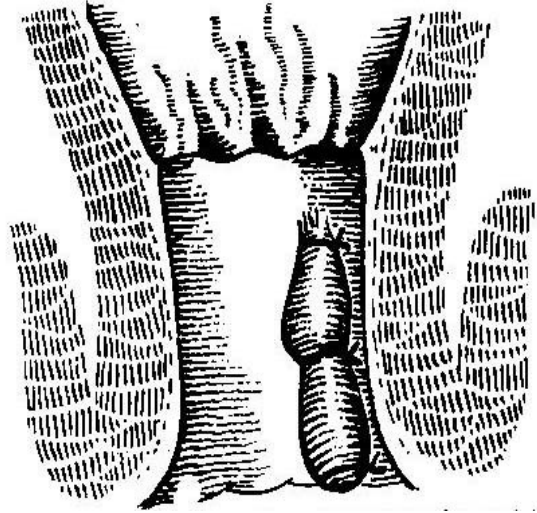
Under spinal anesthesia, lithotomy position, haemorrhoids displayed the so called "triangle to exposure" of Milligan. Ligation of haemorrhoids done by under running (no dissection at all) starting from the pedicle level about 2.5 cm above the dentate line using atraumatic 1-0 chromic catgut and under running done upto the Hilton's line. It is a continuous stitch. Most often we ligate all the three haemorrhoids in this way. We have tried this procedures in combination with "excision procedure" where very big haemorrhoids are excised and coexistent small ones are tackled by under running. Under running is also done in patients who have haemorrhoids along with fissure in ano or fistula in ano.

# UNDER RUNNING OF HAEMORRHOIDS

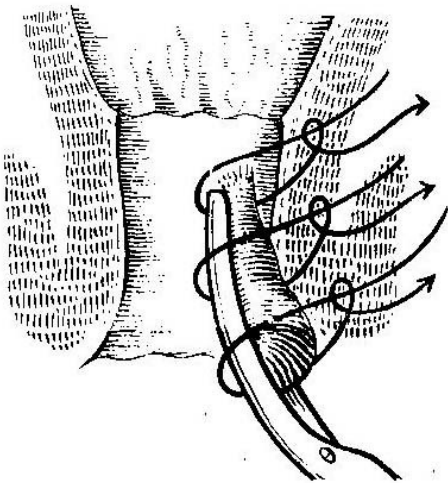
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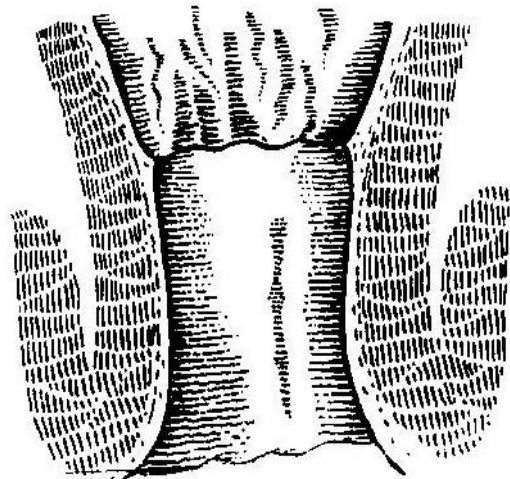
I



III



II



IV

**GRADE II HAEMORRHOIDS**



**UNDER RUNNING OF HAEMORRHOIDS**



## VI. OBSERVATION

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### I. AGE INCIDENCE:

<i>Age</i>	<i>No</i>	<i>%</i>	<i>Haemorrhoidectomy</i>	<i>Under running</i>
10-20	1	1.66	1	–
21-30	10	16.6	6	4
31-40	12	20	6	6
41-50	14	23.3	8	6
51-60	20	33.3	8	12
61-70	3	5	1	2

### II. CLINICAL PRESENTATION

<i>Symptoms</i>	<i>No.</i>	<i>%</i>
Bleeding PR	44	73.3
Prolapse	40	66.6
Discharge	20	33.3
Anal Irritation	16	26.6%

### III. GRADES OF HAEMORRHOIDS

<i>Surgery</i>	<i>Grade of haemorrhoids</i>	
	<i>II</i>	<i>III</i>
Haemorrhoidectomy	16	14
Under running	18	12



#### IV. HAEMOGLOBIN VALUE

<i>Hb (in grams%)</i>	<i>Haemorrhoidectomy</i>	<i>under running</i>
A) >12 gms	9	4
B) 9-12	13	11
C) 6-9	8	10
D) <6 gm	–	5

#### PER OP DIFFICULTIES ENCOUNTERED:

##### 1. BLEEDINGS:

<i>Surgery</i>	<i>blood loss (approx)</i>					
	<i>&lt;25 ml (B<sub>1</sub>)</i>		<i>25-100 ml (B<sub>2</sub>)</i>		<i>&gt;100 ml (B<sub>3</sub>)</i>	
	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>
Haemorrhoidectomy	5	16.6	15	50%	10	33.3
Under running	28	93.33	2	6.66	–	–

##### 2. POST OP. ANALGESICS REQUIRED:

Analgesics are given as and when required basis.

<i>Surgery</i>	<i>no. of doses required</i>		
	<i>1</i>	<i>2</i>	<i>3 &amp; above</i>
Haemorrhoidectomy	–	–	30
Under running	24	5	1

##### 3. POST OP. DEFECATION:

Painful in haemorrhoidectomy group but minimal discomfort in under running group.

Haemorrhoidectomy group had higher incidence of blood loss (B1 i.e. <25ml) during first motion following surgery.

<b>Surgery</b>	<b>Bleeding PR during first motion</b>	
	<b>No</b>	<b>%</b>
Haemorrhoidectomy	12	40
Under running	2	6.66

#### **4. RETENTION OF URINE:**

<b>Surgery</b>	<b>urine retention</b>			
	<b>conservative management</b>		<b>needed catheterisation</b>	
	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>
Haemorrhoidectomy	7	23.33	2	6.66
Under Running	2	6.66	–	–

Conservative management includes reassurance, providing privacy, hot fermentation.

Anal pack kept in all cases who underwent open haemorrhoidectomy. It caused increase post op. pain and urinary retention when compared to patients who underwent under running haemorrhoids.

## VII. RESULTS

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### *In the haemorrhoidectomy group*

- ❖ Significant intraoperative blood loss.
- ❖ Pain for minimum 2 weeks.
- ❖ It took 5 to 6 weeks to heal completely.
- ❖ PR and proctoscopy showed mild anal stenosis in one patient and multiple abrasions in anal mucosa in five cases.
- ❖ No recurrence

### *In the underrunning group:*

- ❖ Almost no blood loss during surgery in most of the cases.
- ❖ Minimal post operative pain and discomfort.
- ❖ It took 4 to 5 weeks to completely disappear.
- ❖ PR & Proctoscopy showed normal pattern of healing.
- ❖ 3 patients had skin tag.

## VIII. SUMMARY & CONCLUSION

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Patients who had under running for II<sup>0</sup> & III<sup>0</sup> haemorrhoids were comfortable and there was no bleeding. Minimal post op pain which was tolerable.

### *Advantages of Under running:*

- ❖ Easier technique: even a beginner can do without much difficulty.
- ❖ No dissection and no raw area.  
No per Op. and post Op. bleed.  
Less post Op. pain  
No urinary retention  
No chance of anal stenosis.
- ❖ Patients can return to work early.
- ❖ Less time consuming technique.
- ❖ No need to keep anal pack and for post op. dressing.
- ❖ Patients were relieved of all symptoms following surgery.
- ❖ Best for patients with low hemoglobin.
- ❖ Can be combined with surgery for fissure.

Therefore this is a good alternative technique in the management of II<sup>o</sup> and III<sup>o</sup> haemorrhoids. It is a better procedure with almost no post op. complication compared to the classical open haemorrhoidectomy.

Under running is a therapeutic option for haemorrhoids better than any other procedures.

Easier to the surgeon and comfortable to the patients.

Best option for high risk patients.

#### **DISADVANTAGES OF UNDER RUNNING:**

1. Stiches taken should not include underlying muscle as it will produce spasm and lead to post operative pain.
2. External haemorrhoids has rich nerve supply, so under running produces pain and discomfort to the patient post operatively.

## MASTER CHART

### I. UNDER RUNNING OF HAEMORRHOIDS GROUP

Sl. No	Name	Age/Sex	IP No.	Bleeding PR	Mass Protruding PR	Anal discharge	Anal irritation	Grade	Hb (in gms %)	Per OP blood loss	Post OP Analgesic no. of doses	Bleeding PR during first motion following surgery	Urinary retention	Recurrence
1.	Pachiappan	35/M	541581	+	+			II	A	B <sub>1</sub>	1			
2.	Laxmanan	40/M	542669	+	+			II	C	B <sub>1</sub>	1			
3.	Padma	51/F	549008	+	+	+		III	B	B <sub>1</sub>	2			
4.	Sarathi	42/M	550950	+	+			II	C	B <sub>1</sub>	1			
5.	Sayrimuthu	60/M	544451	+	+		+	III	C	B <sub>1</sub>	1		+	
6.	Arumugan	55/M	559005	+	+	+		II	C	B <sub>1</sub>	1			
7.	Narasimhan	52/M	547686	-	+	+	+	II	D	B <sub>1</sub>	1	+		
8.	Senthil Kumar	29/M	546030	+	-			III	A	B <sub>2</sub>	1			
9.	Ganesan	35/M	597607	+	+	+		II	B	B <sub>1</sub>	1			
10.	Radhakrishnan	55/M	593472	+	+		+	III	C	B <sub>1</sub>	1			
11.	Mallika	45/F	601146	+		+		II	C	B <sub>1</sub>	2			
12.	Vinoth	29/M	602519		+			III	C	B <sub>2</sub>	3			
13.	Chandrasekar	50/M	605884	+		+	+	II	B	B <sub>1</sub>	1			
14.	Murugan	30/M	606536		+			III	C	B <sub>1</sub>	1			

Sl. No	Name	Age/Sex	IP No.	Bleeding PR	Mass Protruding PR	Anal discharge	Anal irritation	Grade	Hb (in gms %)	Per OP blood loss	Post OP Analgesic no. of doses	Bleeding PR during first motion following surgery	Urinary retention	Recurrence
15.	Prabhakaran	39/M	606801	+	+	+		II	B	B <sub>1</sub>	1			
16.	Suryanarayan	67/M	611687	+				II	C	B <sub>1</sub>	1			
17.	Dayanathan	49/M	619959	+				II	C	B <sub>1</sub>	1			
18.	Amulu	45/F	629002	+	+	+		III	D	B <sub>1</sub>	1		+	
19.	Tamilarasu	45/M	633555	+				II	B	B <sub>1</sub>	1			
20.	Subramani	43/M	637822		+		+	III	C	B <sub>1</sub>	2	+		
21.	Doss	33/M	639068	+		+		II	A	B <sub>1</sub>	1			
22.	Umakartha	40/F	647245		+			III	B	B <sub>1</sub>	1			
23.	Ashok	53/M	649780	+	+			III	D	B <sub>1</sub>	1			
24.	Kajamohideen	40/M	659459	+	+	+	+	III	B	B <sub>1</sub>	2			
25.	Devaraj	51/M	664196	+			+	II	C	B <sub>1</sub>	1			
26.	Rajammal	52/F	664295	+			+	II	B	B <sub>1</sub>	1			
27.	Babu rajendra Prasad	58/M	671951	+	+		+	II	C	B <sub>1</sub>	2			
28.	Arunachalam	58/M	671951	+	+		+	II	D	B <sub>1</sub>	1			
29.	Jayaraman	51/M	675667	+		+		II	B	B <sub>1</sub>	1			
30.	Kamalammal	65/F	681986	+				III	D	B <sub>1</sub>	1			

## II. OPEN HAEMORRHOIDECTOMY GROUP:

Sl. No	Name	Age/Sex	IP No.	Bleeding PR	Mass Protruding PR	Anal discharge	Anal irritation	Grade	Hb (in gms %)	Per OP blood loss	Post OP Analgesic no. of doses	Bleeding PR during first motion following surgery	Urinary retention	Recurrence
1.	Selvaraj	38/M	540351	+	+			II	A	B <sub>1</sub>	3			
2.	Subramani	48/M	550334	+	+			III	B	B <sub>2</sub>	3		+	
3.	Srinivasan	36/M	553943		+	+		IV	A	B <sub>2</sub>	3			
4.	Rajendran	25/M	558188	+	+			II	A	B <sub>3</sub>	4	+	+	
5.	Dharmaraj	49/M	560130		+	+		II	B	B <sub>1</sub>	3			
6.	Murugan	51/M	561247	+		+		III	B	B <sub>3</sub>	3			
7.	Babu	31/M	588872		+			II	A	B <sub>2</sub>	4	+		
8.	Sivanandam	42/M	591828	+				III	A	B <sub>3</sub>	3	+		
9.	Monij	33/M	596671	+	+			II	C	B <sub>1</sub>	4		+ (c)	
10.	Venugopal	46/M	599343		+			II	B	B <sub>2</sub>	5			
11.	Ganesh	29/M	600712		+			III	B	B <sub>2</sub>	3	+		
12.	Gopi	42/M	601823	+	+	+		II	B	B <sub>3</sub>	3			
13.	Manohar	39/M	602315	+				II	A	B <sub>2</sub>	3	+	+	
14.	Rajendran	38/M	604100	+	+	+		III	C	B <sub>3</sub>	4			
15.	Revathy	21/F	605943	+				III	A	B <sub>2</sub>	3	+		
16.	Edwin	28/M	617455		+	+	+	II	A	B <sub>2</sub>	3	+		
17.	Dhansingh	51/M	619913	+				II	B	B <sub>1</sub>	3		+	



Sl. No	Name	Age/Sex	IP No.	Bleeding PR	Mass Protruding PR	Anal discharge	Anal irritation	Grade	Hb (in gms %)	Per OP blood loss	Post OP Analgesic no. of doses	Bleeding PR during first motion following surgery	Urinary retention	Recurrence
18.	Praveen kumar	16/M	622130	+	+			III	B	B <sub>3</sub>	3	+		
19.	Kalyanasundaram	53/M	635581	+			+	II	C	B <sub>3</sub>	4			
20.	Arivalakan	52/M	637727		+	+		III	A	B <sub>2</sub>	3	+	+(c)	
21.	Bhuvaneswari	24/F	643588	+				II	A	B <sub>3</sub>	3			
22.	Chellamuthu	41/M	647801		+		+	III	C	B <sub>2</sub>	3		+	
23.	Ejas	22/M	649852	+	+	+		II	A	B <sub>3</sub>	3	+		
24.	Jeganathan	58/M	654518	+				III	C	B <sub>2</sub>	3			
25.	Mohan	56/M	655737		+	+		III	C	B <sub>2</sub>	4	+		
26.	Doss	55/M	662847	+			+	II	B	B <sub>2</sub>	3			
27.	Ramesh	62/M	665637	+	+	+		III	B	B <sub>2</sub>	3	+	+	
28.	Devaki	51/F	675160		+			II	C	B <sub>1</sub>	3			
29.	Thatchanamoorthy	45/M	673120	+		+		III	B	B <sub>3</sub>	4	+		
30.	Kalaiselvi	42/F	675157	+	+		+	II	B	B <sub>2</sub>	3			

## REFERENCE

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1. Thomson WHF, The nature of haemorrhoids Br. J. Surg 1975; 62: 542-552.
2. Haas PA, Fox TA Jr, Haas GP. The pathogenesis of haemorrhoids, Descending colon, Rectum 1984; 27: 442-450.
3. Bernstein WC - Descending colon, Rectum 1983; 26: 829-834.
4. Fielding, L.P and Goldberg, S. Robbard Smith Operative Surgery, Surgery of the Anus, 2<sup>nd</sup> Edn.
5. Keighly, M.R.B. and Williams, N.S (1999) Surgery of the Anus, Rectum and Colon, 2<sup>nd</sup> Edn.
6. A EL - Meguid Farag - Pile Suture - Dr. J. Surg. Vol. 65 (1987) 293-295.
7. Ambose NS, Morris D, Alexander L Williams J & Keighley MRB (1983). A randomised trial of photocoagulative injection sclerotherapy for the treatment of first and second degree haemorrhoids. Des colon rectum 28: 238-240.

8. Anderson HG (1909). The after results of operative treatment of haemorrhoids. BMJ 2: 1276.
9. Anderson HG & Dukes C (1924). The treatment of haemorrhoids by submucous injection of chemicals (BMJ 2:100).
10. Eisenhammer S (1969) proper principles & practices in the surgical management of haemorrhoids (Des-Colon rectum 12; 288).
11. Clark Ch, Giles G & Gologhest JC (1967) Results of conservative treatment of internal haemorrhoids. BM J 2:12.
12. Gaset JC, Redons W & Rickett JW (1970) The prevalence of haemorrhoids. Proc R Soc Med 63 (78-80).
13. Ferguson JA & Heaton JR (1959): closed haemorrhoidectomy. Des. Colon & rectum 2:176.
14. Eu KW Seow Choen F & Goh HS (1994) Comparison of emergency & elective haemorrhoidectomy. Br. J. Surg 81: 308-310.
15. Goligher JC (1976) Cryosurgery for haemorrhoids. Des colon rectum 19:223.

16. Grace RH & Creed A (1975) Prolapsing thrombosed haemorrhoids: Outcome of conservative management (BMJ 2: 354)
17. Grahamm - Stewart CW (1962) Injection treatment of haemorrhoids: BMJ 1:213.
18. Hancock BD (1981) Lord's procedure for haemorrhoids a prospective and pressure study. Br. J. Surg. 62: 833-836.
19. Heald RJ & Gudgeon Am (1986). Limited Haemorrhoidectomy in the treatment of acute strangulated haemorrhoids. Br. J. Surg 73: 1002.
20. Katchian A (1985) Rubber Bard Ligation. Des Colon Rectum 28: 759.
21. Keighley MRB, Buchman P, Minerrum S, Arabi Y & Alexander Williams J (1979) prospective trials of minor surgical procedures & High fibre diet for haemorrhoids. BM J 2: 967-969.
22. Leicester RJ, Nicholls RJ & Mann CV (1981) Infrared coagulation: A new treatment for haemorrhoids. Des colon Rectum 24: 602.

23. Loder PB, Kamm MA, Nicholls RJ & Philips RKS (1994) Haemorrhoids: Pathology, Pathophysiology & aetiology. Br. J. Surg. 81: 946-954.
24. Lord PH (1983): Maximal anal dilatation in Todd IP \* Fielding (Pleds) Rob & Smith's operative surgery. Colon rectum and anus. 4<sup>th</sup> edition.
25. McRae Hm & Mclead RS (1997) Comparison of haemorrhoids treatments; A meta analysis can J. Surg. 40: 14-17.