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Research Article

Arsha

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Comparative clinical study to evaluate the effect of Apamarga Kshara Sutra and Agnikarma in Arsha w.s.r. to Interno-external Haemorrhoids

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One of the illnesses that is very unkind to mankind is haemorrhoids. The most widespread and troublesome ailment of the gastrointestinal system since the evolution of its species is haemorrhoids. The management of Haemorrhoids in this era has been of many folds i.e., latest technique has been evolved and still researchers are going in forgetting satisfactory procedures. By studying history, one can learn that illustrious figures like Adishankara and Napoleon suffered from this illness. Adishankara pleaded to God in one of his hymns for relief from this ailment. If he had not had a severe haemorrhoids, it is stated that King Napoleon would have won the Battle of Waterloo. In Ayurvedic treaties i.e., Chakradutta and Bhavprakash, Kshara Sutra is directed to be used in haemorrhoids and fistula. Agnikarma is another safe and effective parasurgical method mentioned in the treatment of Arsha. Since Acharya Sushruta has not described the procedure of Agnikarma in Arsha Roga, Agnikarma procedure was done with the aid of Bipolar diathermy. Keeping in view the above-mentioned procedures, Apamarga Kshara Sutra ligation that has been used conventionally for the treatment of Arsha and Agnikarma (Electric cauterization with Bipolar Diathermy) were selected for the treatment of Interno- external Haemorrhoids in the research work.

Keywords: Arsha, Agnikarma, Mahagada, Apamarga Kshara Sutra, Interno-external Haemorrhoids

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Introduction

Haemorrhoids are dilated, tortuous or varicose veins occurring in relation to the anus and originating in the sub-epithelial plexus formed by radicals of the superior, middle and inferior rectal veins.**[1]** They are often related with the portal and the systemic circulation. Superior haemorrhoidal veins have no valves as they are a part of the portal circulation. So, the veins in anal columns have to support the pressure all the way from where the portal veins enter the liver. The dilatation of the veins commonly occurs due to any straining at stool or chronic constipation etc.

The common arrangement of the haemorrhoids was described by miles in 1919. Three primary Haemorrhoids are found in the lithotomy position indicated by the face of a clock at 3, 7 & 11'O clock position. The superior haemorrhoidal artery is divided into left and right main branches, of which left passes down the rectal wall but the right branch divided into anterior and posterior divisions. Smaller secondary haemorrhoids may develop in between the primary haemorrhoids mostly in the left posterior quadrant. According to Gabriel (1938) in majority of cases progressive bleeding and prolapse are the chief symptoms.

Arsha is defined as an entity in which muscular projection troubles the patient like enemy and causes obstruction of the anus.**[2]** *Sushruta* has enumerated the causes leading to vitiation of *Dosha* including Excessive and Improper dietic indulgence, Posture which create pressure on *Guda* region e.g., sitting on hard objects, riding on vehicle for long duration, suppression of natural urge of micturition and defecation, which suppress the normal digestive power i.e., *Mandagni,* leads to development of *Arshas.***[3]** *Arshas* is basically diagnosed by History, Etiological factors, Prodromal features & symptomatology. After careful systemic examination, the local examination is carried out by special instrument known as *'Arsho Yantra'. Sushruta* has quoted four types of treatments for *Arsha* i.e., *Bhaisajya, Kshara, Agni* and *Shastrakarma.***[4]** In Ayurvedic treaties i.e., *Chakradutta* and *Bhavprakash*, *Kshara Sutra* is directed to be used in haemorrhoids and fistula.**[5]** According to *Dosha* following treatment is given:

1) Vatarsha - Snehana, Swedana, Vamana, Virechana, Asthapana and *Anuvasana Basti*
2) Pittajarsha - Virechana
3) Kaphajarsha - Aharadravya mixed with *Shunthi* and
4) Raktarsha - Shamana
5) Sannipatikarsha - Mixed treatment of all *Dosha*

In ancient literature, the disease *Arsha* is rightly pointed out under the subheading of *"Mahagada"* which means the disease is difficult for management by its nature.**[6]**

Aims and Objectives

The present study was planned under the following aims and objectives : To evaluate and compare the effect of *Apamarga Kshara Sutra* and *Agnikarma* in Interno-external Haemorrhoids.

Materials and Methods

Study Subjects: The study included 30 patients ranging in age from 20-60 years old, irrespective of gender or religious affiliation diagnosed with Interno-external Haemorrhoids and met the inclusion and exclusion criteria.

Study Design: Randomized comparative clinical study

Study setting: Patients were randomly selected from the OPD and IPD of Department of Shalya Tantra, R.G.G.P.G. Ayu. College Paprola, H.P. and registered for the study. All required general and routine examination and investigations were done.

Grouping and Intervention

30 patients were randomly divided into two groups, 15 patients each

A. Group I: Standard group - *Apamarga Kshara Sutra*
B. Group II: Trial group - *Agnikarma* (Electric cauterization with Bipolar Diathermy (Artery sealer).

Diagnostic Criteria

Diagnosis was made on the basis of the Per rectal Examination.

Investigations

All the patients registered under the study were subjected to the following investigations - CBC, ESR, RBS, BT, CT, RFT, LFT, Lipid Profile, Urine culture, Chest X - Ray, ECG and Viral markers.

Inclusion criteria

- Patients willing to undergo trial and ready to give informed and written consent.
- Patients of either sex between the age 20 to 60 years.
- Patients having the complaints of Interno – external haemorrhoids.
- Patient fit for *Kshara Sutra*
- Patient fit for

Exclusion criteria

Patients were further screened through the following exclusion criteria before their inclusion in the study.

- Patients not willing to undergo trial or not ready to give informed and written consent.
- Patients of either sex, age less than 20 and more than 60 years.
- Patients with uncontrolled systemic disorders like - Diabetes mellitus, Tuberculosis, uncontrolled Hypertension, Ischemic Heart disease.
- Patients having severe Anaemia.
- Immuno compromised like HIV and Hepatitis B or Hepatitis C positive patients .
- Patient with any Malignancy.
- Haemorrhagic disorders.
- Patients contraindicated for *Agni Karma* like - *Bala, Vriddha, Pramehi, Garbhini*

Subject withdrawal Criteria:

1. Voluntary withdrawal by the research subject with or without information.
2. Uncooperative patient.

Ethical Clearance

The clinical study was approved by Institutional ethical committee before beginning the trial. Clinical trial was started after approval from Chairman of Ethical committee vide Certificate No. Ayu/IEC/2021/1294. The study had also been registered in Clinical Trial Registry of India vide CTRI Reg. No. CTRI/2022/12/048433.

Interventions

After the diagnosis, patients were randomly categorized into two groups:

A. Group - A (*Apamarga Kshara Sutra* ligation)

Technique of *Apamarga Kshara Sutra* ligation

***Poorva Karma* (Pre-Operative procedures)**

- Patient was kept nil orally for 12 hours before operation.
- Written and informed consent of the patient and attendant were taken .
- Anti-tetanus prophylaxis was given.
- Xylocaine sensitivity test done.
- Antibiotic prophylaxis was given.
- Proctoclysis enema was given in the morning of operation day.
- Premedication after maintaining IV line.

***Pradhana Karma* (Operative Procedure)**

Anaesthesia - Spinal Anaesthesia
Position - Lithotomy position.
Cleaning and draping - Afterwards, the conventional rituals were observed to prepare the operative field by scrubbing, cleansing and painting with antiseptic solutions followed by draping of sterile linens.

Procedure

- Digital rectal examination was performed once again to exclude any specific pathology.
- Digital anal dilatation (stretching of the anal sphincters) was done.
- Revelation of the Triangle of Exposure.
- Holding of pile mass: First of all Right Posterior internal pile was grasped with pile mass holding forceps. The two forceps attached to Right Posterior pile were taken in the palm of Right hand drawn outwards and Right index finger was used to stabilize inner aspect of pile mass.
- An inverted 'V' incision made in perianal skin including the external part of Haemorrhoids and semi-circular groove was made. The incision should reach the mucocutaneous junction but not to be extended into the mucosa. During this procedure index finger was firmly pressed against the scissors and traction maintained to preserve the lower edge of internal sphincter.
- Transfixation of pile mass: *Apamarga Kshara Sutra* loaded on round body curved needle was passed through the base of crushed pedicle and transfixation of both external and internal part of haemorrhoidal mass was done.

- Ligation of pile mass: Pile mass crushing clamp was removed only after ensuring tight ligature at the crushed base of the pile mass.
- Excision: The haemorrhoidal mass was excised about 5 mm. distal to ligature.
- Left lateral and right anterior haemorrhoidal masses were dealt in the same manner. The three transfixed and ligated pile masses were inspected once again at the end of the operation. Haemostasis ensured, transfixed *Apamarga Kshara Sutras* were divided to a short length. One end of anal packing given initially was withdrawn out.
- *Jatyadi Taila Matrabasti* was given.
- Dressing - Gauze soaked in *Jatyadi Taila* was placed inside the canal.
- T-Bandage application was done to hold the dressing in position.

***Paschat Karma* (Post-Operative procedures)**

- Instructions were advised regarding postoperative effect of Spinal Anaesthesia.
- Antibiotics for 5 days.
- Analgesics whenever required according to condition.
- Dressing was removed next morning after that *ushnodaka avaghana* was advised.
- Instillation of *Jatayadi Taila (Matra Vasti)* into the anal canal with the help of No. 8 rubber catheter attached with a 10ml of syringe.
  - *Triphala Guggulu* 2 tablets BD
  - *Triphala* powder 10gm HS/SOS.
- Diet-Light bland diet, leafy vegetables, etc. plenty of water orally. Such a regimen was to be followed for 4 weeks.

Figure 1: Painting

Figure 2: Draping

Figure 3: Anal Dilatation

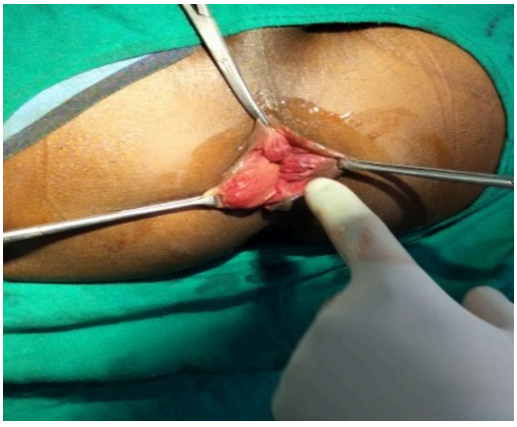


Figure 4: Triangle of exposure

Figure 5: Holding of pile mass

Figure 6: Inverted V shaped incision

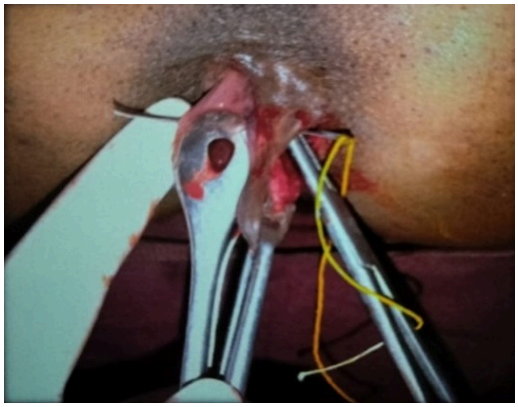


Figure 7: Transfixation of pile mass

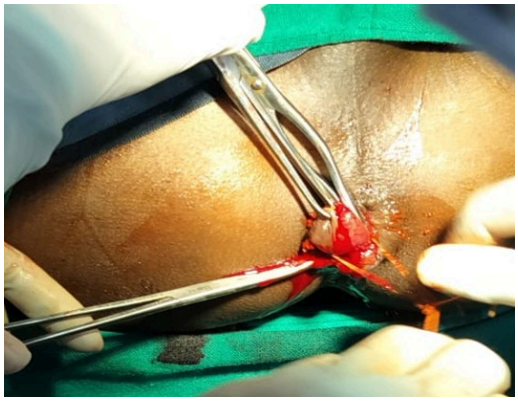


Figure 8: Ligation of pile mass

Figure 9: After ligation

B. Group - B (*Agnikarma* with Bipolar Diathermy (Artery sealer)

***Poorva Karma* (Pre-Operative procedures) -** Same as Group - A

***Pradhana Karma* (Operative procedure)**

- Anaesthesia - Spinal Anesthesia
- Position - Lithotomy position.
- Cleaning and draping - Afterwards, the conventional rituals were observed to prepare the operative field by scrubbing, cleansing and painting with antiseptic solutions followed by draping of sterile linens.

Procedure

- Digital rectal examination was performed once again to exclude any specific pathology.
- Digital anal dilatation (stretching of the anal sphincters) was done.
- Revelation of the Triangle of Exposure
- Holding of pile mass: First of all Right Posterior internal pile was grasped with pile mass holding forceps. The two forceps attached to Right Posterior pile were taken in the palm of Right hand drawn outwards and Right index finger was used to stabilize the inner aspect of the pile mass.
- An inverted 'V' incision made in perianal skin including the external part of Haemorrhoids and semi-circular groove was made. The incision should reach the mucocutaneous junction but not to be extended into the mucosa. During this procedure index finger was firmly pressed against the scissors and traction maintained to preserve the lower edge of internal sphincter. Catgut-2 was passed through the base of crushed pedicle and transfixation of both external and internal part of haemorrhoidal mass was done.
- Bipolar artery sealer was applied on crushed pedicle and tissue is cauterized and partially excised.
- Left lateral and right anterior haemorrhoidal masses were dealt in the same manner. One end of anal packing given initially was withdrawn out.
- *Jatyadi Taila Matrabasti* was given.

- Dressing Gauze soaked in betadine and *Jatyadi Taila* was placed inside the canal.
- T - Bandage application was done to hold the dressing in position.

Paschat Karma **(Post-Operative procedures) -** Same as Group - A

Figure 10: Painting and draping

Figure 11: Anal dilatation

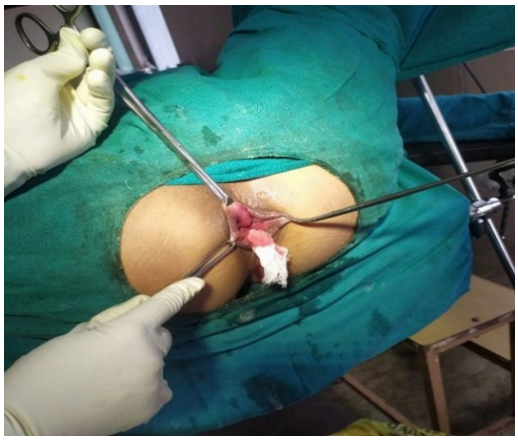


Figure 12: Revealation of Triangle of exposure

Figure 13: Holding of pile mass

Figure 14: Inverted V shaped incision

Figure 15: Cauterization with artery sealer after ligating with catgut - 2

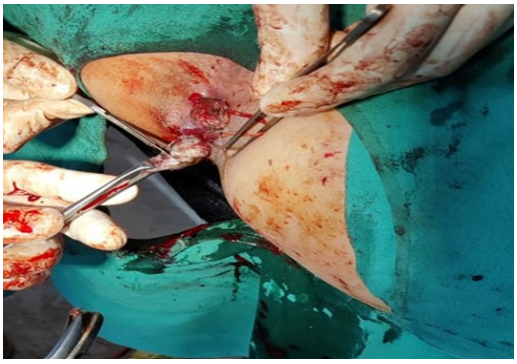


Figure 16: Excision of the cauterized pile mass

Figure 17: Same procedure being performed

Figure 18: After cauterization (Agnikarma)

Duration of trial: 28 days

Follow-up: After one week till 4 weeks.

Assessment Criteria

Clinical Criteria

Grading	Proctorrhagia	Prolapse	Discharge per anum	Heaviness or Discomfort in anal region
0	No bleeding	No prolapse	None	None
1	Mild bleeding (2 to 5 drops / 24 hours)	does not come out of the anus.	Mild (Feeling of wetness)	Mild (only during defecation)
2	Moderate bleeding (6-10 drops / 24 hours)	come out only during defecation and spontaneously reducible after defecation	Moderate (Under clothes need to be changed once a day)	Moderate (In sitting posture)
3	Severe bleeding (> 12 drops/24 hours)	Irreducible, remain prolapsed out	Severe (Under clothes need to be changed twice a day)	Severe (even in standing posture)

B. Post Operative Criteria of Assessment

Results of *Apamarga Kshara Sutra* ligation and *Agnikarma* (Electric Cauterization with Bipolar Diathermy) were assessed according to the following criteria -

1. Post-operative pain - (recorded on days 1st , 3rd, 7th, 10th and 14th after operation according to Visual Analogue Scale and verbal rating scale).

Visual Analogue Scale

An imaginary line of 10 cm will be marked to indicate intensity of pain to assess the pain in patients.

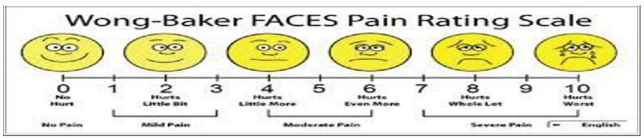


Figure 19: Visual Analogue scale

Gradings according to Visual analogue scale and verbal rating scale –

- Grade 0 - 0 - No pain
- Grade 1 - 1 -3 - Mild pain (Pt. able to tolerate, subsides with rest)
- Grade 2 - 4-6 - Moderate pain (Pain subsides with the use of analgesics)
- Grade 3 - 7-10 - Severe pain (Pain doesn't subsides even after taking analgesics)

1. The above mentioned grading was used for the assessment of pain as follows-

- Pain present after 3 hours of operation – the removal of packing
- Pain during and after passing of first bowel (post -operatively)
- Pain present on successive Post - operative days i.e. on 1st, 3rd, 7th, 10th and 14th

2. Haemorrhage

- Grade 0 - No bleeding
- Grade 1 - Mild bleeding (2 to 5 drops / 24 hours)
- Grade 2 - Moderate bleeding (6-10 drops / 24 hours)
- Grade 3 - Severe bleeding (> 12 drops/24 hours)

3. Time taken for wound healing - The wound healing is calculated on the basis of contraction of wound. Wound contraction is measured in terms of decrease in surface area of wound surface area is calculated by multiplying the length and breadth of the wound. The time required for complete wound healing will be the time required for 100 % decrease in wound surface area.

- Grade 0 - 100% wound healing in 7 days
- Grade 1 - 100% wound healing in 10 days
- Grade 2 - 100% wound healing in 15 days
- Grade 3 - 100% wound healing in 21 days
- Grade 4 - 100% wound healing after 21 days

4. Anal incontinence

- Grade 0 - Absent
- Grade 1 - Present

5. Anal stenosis

- Grade 0 - Absent
- Grade 1 - Present

Criteria for assessing total effect of therapy -

Considering the overall improvement shown by the patients in signs and symptoms, the total effect of the therapy assessed as below:

Grade 0 - Unchanged
Grade 1 - Mildly improved (0-30% relief of the complaints, no healing of the wound)
Grade 2 - Moderate improved (30-50% relief of the complaints, mild healing of the wound)
Grade 3 - Markedly improved (50-80% relief in complains, more than 50% of the wound healing)
Grade 4 - Cured (>80% relief in complaints, complete healing of the wound)

Statistical Analysis

The scoring of criteria of assessment was analysed statistically in terms of mean values of B.T. (Before Treatment), A.T. (After treatment), S.D. (Standard Deviation), and S.E. (Standard Error).

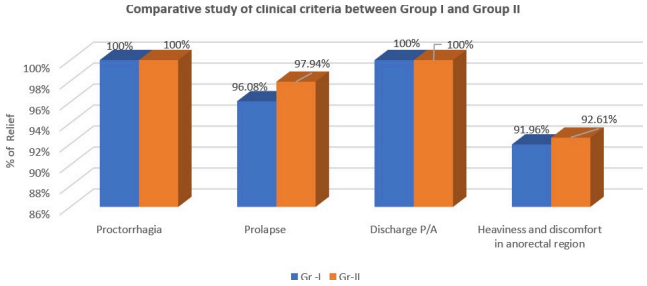
The effect of therapy in the group was assessed by applying students paired 't' test for comparing the before treatment and after treatment scores of assessment criteria. The results obtained were considered highly significant for p 0.05. For intergroup comparison unpaired 't' test was used.

Observations and Result

Table 1: Comparative study of clinical criteria between Group - 1 & Group - 2.

Criterion	% age of relief		% of difference	SD	SE	't'	P Value	Results
	Gr -I	Gr-II						
Proctorrhagia	100 %	100 %	00	0.599	0.227	0.623	>0.05	NS
Prolapse	96.08 %	97.94 %	-1.86	0.862	0.326	0.220	>0.05	NS
Discharge P/A	100 %	100 %	00%	0.730	0.276	-0.778	>0.05	NS
Heaviness and discomfort in anorectal region	91.96 %	92.61 %	-0.65%	0.761	0.288	-0.498	>0.05	NS

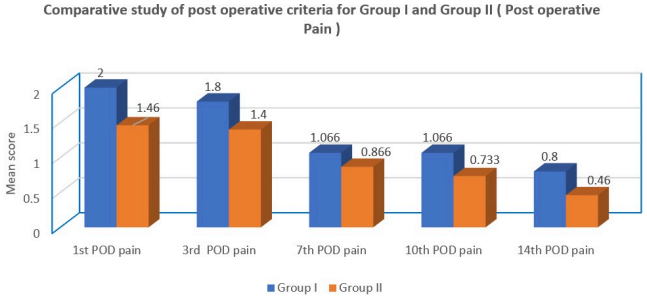
Graph 1: Comparative study of clinical criteria between Group I and Group II



Following conclusion can be drawn from above data-

1. Proctorrhagia - Relief in Proctorrhagia was 100% in both the groups. The intergroup difference was not significant statistically (p>0.05).
2. Prolapse - Relief in prolapse was 96.08% in group I and 97.94% in group II. The intergroup difference was not significant statistically (p>0.05).
3. Discharge per anum - Relief in discharge per anum was 100 % in both the groups. The intergroup difference was not significant statistically (p>0.05).
4. Heaviness and discomfort in anorectal region - Relief in heaviness and discomfort in anorectal region was 91.96% in group I and 92.61% in group II. The intergroup difference was not significant statistically (p>0.05).

Graph 2: Comparative study of post operative criteria for Group I and Group II (Post operative Pain)



Post-operative pain (1st Day) - Mean score of group - I was 2.0, while mean score of group – II was 1.46. This indicates that post operative pain on 1st day in group - I was higher than group II. Statistically post operative pain on 1st day in group- I and group – II were comparable and were found significant (p< 0.05).

Post-operative pain (3rd Day) - Mean score of group - I was 1.8, while mean score of group - II was 1.4. This indicates that post operative pain on 3rd day in group - I was higher than group II. Statistically post operative pain on 3rd day in group - I and group - II were comparable and were found non - significant (p > 0.05).

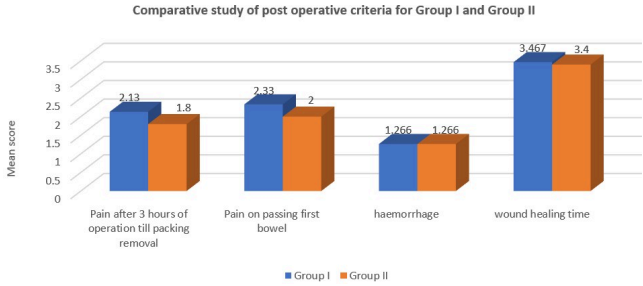
Post-operative pain (7th Day) - Mean score of group - I was 1.066, while mean score of group - II was 0.866. This indicates that post operative pain on 7th day in group - I was higher than group II. Statistically post operative pain on 7th day in group- I and group - II were comparable and were found non - significant (p > 0.05).

Post-operative pain (10th Day) - Mean score of group - I was 1.066, while mean score of group - II was 0.733. This indicates that post operative pain on 10th day in group - I was higher than group II. Statistically post operative pain on 10th day in group - I and group - II were comparable and were found non - significant (p > 0.05).

Post-operative pain (14th Day) - Mean score of group - I was 0.8, while mean score of group - II was 0.46. This indicates that post operative pain on 14th day in group - I was higher than group II. Statistically post operative pain on 14th day in group - I and group - II were comparable and were found non - significant (p > 0.05).

Pain after 3 hours of operation till removal of anal packing - Mean score of group - I was 2.13, while mean score of group - II was 1.8. This indicates that post operative pain after 3 hours of operation till removal of anal packing on 1st day in group - I was higher than group II. Statistically post operative pain on 1st day in group - I and group - II were comparable and were found non - significant (p > 0.05).

Graph 3: Comparative study of post operative criteria for Group I and Group II.



Pain on passing first bowel post- operatively - Mean score of group - I was 2.33, while mean score of group - II was 2.0. This indicates that post operative pain on passing first bowel in group - I was higher than group II. Statistically post operative pain on 1st day in group - I and group - II were comparable and were found non - significant (p > 0.05).

Post - operative Haemorrhage - Mean score of group - I was 1.266, while mean score of group - II was 1.266. This indicates that post operative Haemorrhage in group - I was equal to group II. Statistically post operative Haemorrhage in group - I and group - II were comparable and were found non - significant (p > 0.05).

Wound healing time - Mean score of group - I was 3.467, while mean score of group - II was 3.40. This indicates that time taken for wound in group - I was slightly higher than group II. Statistically time taken for wound healing in group - I and group - II were comparable and were found non - significant (p > 0.05).

Table 2: Comparative Study of Post operative Criteria of Group -I & Group -II

Parameters	Mean		D	SD±	SE±	't'	P Value	Results
	Gr -I	Gr-II						
Pain present after 3 hours of operation - the removal of packing	2.13	1.8	0.333	0.737	0.279	1.285	0.209 (>0.05)	NS
Post operative pain during and after passing first bowel	2.33	2	0.333	0.716	0.271	1.323	0.197 (>0.05)	NS
Post operative pain (1st day)	2	1.46	0.533	0.700	0.255	2.08	0.046 (<0.05)	S
Post operative pain (3rd day)	1.8	1.4	0.4	0.620	0.235	1.833	0.077 (>0.05)	NS
Post operative pain (7th day)	1.066	0.866	0.125	0.577	0.218	0.616	0.542 (>0.05)	NS
Post operative pain (10th day)	1.066	0.733	0.333	0.550	0.208	1.722	0.096 (>0.05)	NS

Parameters	Mean		D	SD±	SE±	't'	P Value	Results
	Gr -I	Gr-II						
Post operative pain (14th day)	0.8	0.46	0.333	0.559	0.211	1.694	0.101 (>0.05)	NS
Post Operative Haemorrhage	1.266	1.266	00	0.874	0.331	0	1.000 (>0.05)	NS
Time taken for wound healing	3.467	3.400	0.0667	0.531	0.201	0.357	0.724 (>0.05)	NS

Discussion

The history of ano-rectal problems and their management is very old. Proctology is the latest developed branch of medical science, which deals with the affections of ano-rectal region, whereas, *Sushruta* "The pioneer of ancient Indian Surgery" has explored the subject very vividly & was first to describe the diseases elaborately occurring in the vicinity of the ano-rectal area, such a good description can be attributed either to their being very common or they were the most troublesome. The disease *Arsha,* perhaps tops the list of all the ailments of ano- rectal area; from which the humanity remained a sufferer since time immemorial

In present study 100% patients complained of proctorrhagia, 100% patients complained of prolapse, 96.67% patients complained of heaviness and discomfort anorectal region, 66.67% patients complained of discharge per anum. Proctorrhagia and prolapse were the chief complaints of patient suffering from Haemorrhoids. Heaviness and discomfort in anorectal region and discharge per aum was due to prolapsed pile masses.

Mechanism of Action *Apamarga Kshara Sutra*

The *Apamarga Kshara Sutra* is a medicated encircling ligature is made up of mixture of *Snuhi* latex, *Apamarga Kshara* and *Haridra* powder coated on surgical barbour linen thread size 20. *Apamarga Kshara Sutra* ligation exerts mechanical pressure along with chemical cauterization leads to strangulation of the haemorrhoidal tissue. Mechanism of action of *Apamarga Kshara Sutra* can be explained as follows -

1. Mechanical strangulation of the pile mass caused by surgical Barbour linen thread size 20 -Surgical barbour's linen thread size 20 was used for the preparation of *Apamarga Kshara Sutra*. It has sufficient tensile strength (5 kg) and thickness and does not produce any local reaction. Pile masses were transfixed at the base using surgical barbour's linen thread.

This thread (being a ligature) caused strangulation of the pile masses resulting into occlusion of supplying blood vessels and subsequently necrosis of the pile mass.

2. Proteolytic action of the latex - *Snuhi* latex is acidic in nature having Ph 5.6. Due to its proteolytic action dissolve the tissue at the base of ligated haemorrhoidal mass, in other words causes debridement. It also acted as chemical irritant. Due to its sticky nature it holds the drugs over thread.

Antimicrobial and wound healing property of *Haridra*

Haridra has antiseptic, antihistaminic action. It also having wound healing property and it provides normal lustre to the skin as mentioned in ayurveda texts. *Haridra* because of its antimicrobial property protects the ligated pile mass from infection.

Probable mode of action of *Apamarga Kshara Sutra*

Transfixation at the base of pile mass
↓
Leads to mechanical strangulation
↓
Proteolytic action on pile mass
↓
Antiseptic and healing effect of Haridra
↓
Excision debridement, incision, scrapping and dissolution effect of *Apamarga Kshara*
↓
Necrosis of the pile mass
↓
Falling of pile mass

Mode of action of Bipolar Diathermy

Surgical diathermy or electrosurgery involve the use of high frequency A.C. electric current in surgery as either a cutting modality or else to cauterize small blood vessels to stop bleeding. This technique induces localized tissue burning and damage, the zone of which is controlled by frequency and power of the device.

The mechanism of action is very clear. After application of Bipolar artery scaler over the pedicle of the haemorrhoidal tissue, it is heated by electric current and induced intracellular oscillation of ionized molecule that result in an elevation of intracellular temperature. When the intracellular temperature reaches 60° C, instantaneous cell death occurs.

If the tissue is heated to 60-99° C, the simultaneous process of tissue desiccation (dehydration) and protein coagulation occur. This results in occlusion of blood vessels and halting of bleeding. When intracellular temperature rapidly reaches 100° C, the intracellular contents undergo a liquid to gas conversion, massive volumetric expansion and resulting explosive vaporization.

Bipolar artery sealer applied over the pedicle of clamped haemorrhoidal tissue

Heating of tissue
↓
Cell death
↓
Desiccation and protein coagulation
↓
Occlusion of blood vessels
↓
Vaporization and excision of pile mass

Conclusion

The disease described as *Arsha* in Ayurveda literature can be correlated with Haemorrhoids as described in modern medical science on the basis of the clinical presentation of both the entities. A clear cut description of anatomy and physiology of Ano-rectal region is found in Ayurveda literature especially in Sushruta Samhita. Sedentary life style is an important cause for the development of haemorrhoids. Maximum patients were field workers and they were not aware about diet. Both the modalities after anatomical dissection dealt with internal as well as external haemorrhoidal component. After both the treatment modalities proctorrhagia and prolapse were almost completely relieved, which are the main symptoms of haemorrhoids. Duration of healing of wound was approximately same in both modalities. *Agni Karma* (Electric cauterization) in haemorrhoids results in less post operative pain as compared to *Apamarga Kshara Sutra* ligation procedure.

Both the treatment modalities are cost effective. None of the patients in both the groups complained of anal stenosis, this can be attributed to proper manual dilatation post operatively. At last we can conclude that both the treatments are equally effective.

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