

Modified Hemorrhoidal Artery Ligation Malang Procedure as an Alternative Therapy in Management of Haemorrhoid Grade III

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Abstract:- Background Surgical procedure in symptomatic hemorrhoid, either closed and open hemorrhoidectomy, always associate with long duration of high grade post operative pain, long time of recovery, and various post operative complication. Some new operation technique had been introduced to solve the problem above. The Doppler Guided Hemorrhoid Artery Ligation (DGHAL) technique had decreased the post operative pain successfully. In the developing countries, the limitation in using protoscope Doppler solved by some modification of DGHAL technique, known as Modified Hemorrhoid Artery Ligation (MHAL) that switch the use of hemorrhoid artery Doppler with palpation of artery pulsation in its anatomic location. In 2009, Association of Coloproctology of Great Britain and Ireland had recommended some surgeon to use a Hemorrhoid Artery Ligation technique without Doppler. In Saiful Anwar General Hospital Malang, one of the digestive surgeon, dr. Setyo S, SpB(KBD) had undergone some hemorrhoid surgical procedure using Modified Hemorrhoid Artery Ligation (MHAL) technique with satisfying result since 2008. Objective Observe the post operative pain, length of stay and resting period needed for the patient after undergo a Modified Hemorrhoid Artery Ligation procedure and chance of any complication after six week. Method Twenty patients diagnosed with internal hemorrhoid grade III undergo a surgical procedure with MHAL or Closed Hemorrhoidectomy Ferguson technique. Sample divided in two groups using Quasi experimental design. After procedure, the pain score a day after operation is recorded. The length of stay, resting period needed and complication after six week after operation had also been observed. Result There is a significant different result in post operative pain score ($p=0,001$), length of stay ($p=0,001$) and resting period needed ($p=0,001$) using MHAL technique comparing to the CHF technique. However, there is no significant difference in incidence of complication in six week post operation for both techniques. Conclusion The MHAL technique is better than CHF technique considering post operative pain, length of stay and resting period needed.

Keywords:- Internal hemorrhoid grade III, Modified Hemorrhoid Artery Ligation (MHAL), closed hemorrhoidectomy Ferguson (CHF), post operative pain.

I. INTRODUCTION

Haemorrhoid is one of the most common disease which can be found in the hospital. The exact incidence rate of haemorrhoid is still hard to known appropriately, but from clinical experience, it is known that there are many people, both male and female that undergo haemorrhoid. However, there are many haemorrhoid that occur without any symptomp. As age is increased, the incidence rate of haemorrhoid is also increased. From clinical experience, it is found that at least 50% of adult person 50 years and above is undergo haemorrhoid in different level. Both males and females has same chance to undergo haemorrhoid (Corman, 2005 ; Dudley, 1992).

Post operation pain management of haemorrhoid surgery always become a concern of surgeon, in which different operation technique will lead to different level of pain. Stapled haemorrhoidopexy (SH) and Doppler haemorrhoidal artery ligation (DHAL) are operation technique that can reduce post operation pain and compliaction of haemorrhoid operation (Mikuni, 2002)

From 2008, a surgeon from Saiful Anwar Hospital, malang, has already developed a new haemorrhoidectomy technique that called Modified haemorrhoidal artery ligation (MHAL), an operative procedure that differentiate from haemorrhoidal artery ligation (HAL). This operation technique is based on 3 phase : haemorrhoid artery ligation, mass excision, and plication.

In Indonesia, exclusively in Malang, the availability of tools and expense become a problem for surgeon to chose the most appropriate operation technique to treatmen symptomatic haemorrhoid. Because of this problem, Modified Haemorrhoidal artery ligation (MHAL) is developed as a new operation technique as an alternative to give management for haemorrhoid grade III patient and increase their live quality and decrease patient's post operation pain and hospitalization time. We hope this new operation technique can be used for a consideration to make service standart for haemorrhoidal surgery in Saiful Anwar Hospital, Malang.

II. MATERIAL AND METHOD

This experiment's ethical clearance is already validated by ethical commission of health experiment in Saiful Anwar Hospital, Malang. This experiment has been done from October, 2011 to March, 2012 with total sample is 21 person that undergo grade III haemorrhoid. Before haemorrhoidal operation has been done, all of the patient is already received informed consent about this operation technique, that divided in 2 group with quasi-experimental design method. The exclusion criteria of this experiment is patient with thrombotic haemorrhoid, patient that undergo other anorectal disease such as fistula ani and perianal abscess, patient with pregnancy, patient that undergo steroid treatment, and patient with anticoagulant disease. 11 patient is operated with MHAL and 1 patient is taken out from this experiment because of incomplete observation.

Operation Technique

All of the operation has been done with regional anaesthesia and patient with lithotomy position, and done by the same operator. In Modified hemorrhoidal artery ligation (MHAL) technique, operation is started with ligation of hemorrhoidal artery. There are 3 – 6 ligation projected as anatomical location of haemorrhoidal artery on 5, 7, and 11 o'clock, according to the anal cushion with non absorbable suture (Prolene®) to reduce blood outflow to haemorrhoidalis plexus (corresponding to haemorrhoidal artery ligation technique principle). The depth of the ligation is 1 cm and the suture is not cutted. After ligation has been done, the next step is excision of haemorrhoidal tissue as deep as mucous membrane without harm the muscle layer, followed by suturing with non absorbable (Prolene®), using uncut suture to do ligation. This suture is done without knot that has been done in plication. After that, the next step is plication that can be done with making a hooked suture to proximal region with absorbable suture.

In Close hemorrhoidectomy ferguson (CHF) group, this operation is started with excision of hemorrhoid tissue, dissection, and ligation / coagulation with cauter to minimize bleeding and followed with suturing of mucous membrane after excision with absorbable suture (Vicril®)

After all of the operation has been done, patient is undergo treatment in Saiful Anwar Hospital. Ketorolac® 3 x 30 mg is given to every patient to reduce their pain. 1 day post operation, the pain level is measured with VAS (Visual Analog Scale). Then, analgetic is administered according to VAS level of every patient. For every patient that has VAS level <3, class III analgetic (paracetamol) is administered. For patient with VAS level 4 – 5, class II analgetic (paracetamol + codeine) is administered. Class I analgetic that consist with morphine that administered systematically with paracetamol is given for every patient with VAS score > 5.

Patient that has VAS Score < 5 and does not has any post operation complication such as active bleeding or sepsis sign can stop their hospitalization. Recorded data is include age, sex, hospitalization time, post operation rest

time, and complication that happen in 6 weeks post operation.

III. RESULT

Result of measurement can be seen in table 1. From statistical analytics, it is found that there is a significance difference of VAS Score in day 1 post operation between MHAL group ($4,070 \pm 0,43$) and CHF Group ($5,63 \pm 0,84$) with p-value 0.0001 ($p < 0,05$), in which MHAL group has a lower VAS score than CHF group.

	MHAL	CHF	p-value
Day 1 VAS	4.07 ± 0.37	5.63 ± 0.84	0.0001
Hospitalization duration	2.3 ± 0.48	3.7 ± 0.48	0.0001
Rest duration	5.9 ± 0.73	8.9 ± 1.72	0.0001
Post operation complication	4	3	0.549

Table 1. Comparison of VAS, Hospitalization duration, and rest duration between MHAL and CHF

However, hospitalization duration of MHAL group ($2,3 \pm 0,48$) is shorter than CHF group ($3,7 \pm 0,48$) with p-value 0.0001 ($p < 0,05$).

In spite of that, from statistical analytics of rest time of patient that undergo operation, it is found that there is a significance different between MHAL group (5.9 ± 0.73) and CHF group (8.9 ± 1.72), in which rest time for MHAL group is shorter than CHF group.

Post operation complication that measured in 6 weeks post operation represent that there is no statistically significance different between CHF group and MHAL grup (p Value = 0.587).

IV. DISCUSSION

Surgery of symptomatic haemorrhoid with closed / open haemorrhoidectomy technique always has post operation pain that persist in long time. However, recovery time for this technique is relatively long and cause some post operation complication (Corman, 2005). Among new operation technique, Haemorrhoidal artery ligation (HAL) is preferable than stapled hemorrhoidopexy due to their cost difference.

Post operation pain after haemorrhoidal surgery come from inflammation of rectum and incision wound from perineum skin (Kathryn, 2010). Modified haemorrhoidal artery ligation is haemorrhoidal surgery technique that we have already developed from haemorrhoidal artery ligation, with modify the usage of haemorrhoidal arterial doppler with palpation of arterial beat from its anatomical location. Associatoin of Coloproctology of Great Britain and Ireland in 2009 give some recommendation about haemorrhoidal

artery ligation. They stated that there are many operation that successfully be done by surgeon that undergo haemorrhoidal artery ligation without the usage of arterial doppler. From 2008 in Saiful Anwar Hospital, Malang, many surgeon has already used Modified artery ligation (MHAL) and result in a good outcome.

Modified haemorrhoidal artery ligation (MHAL) procedure is done by make a ligation of superior haemorrhoidal artery to reduce outflow to anal cushions. This procedure will decrease post operation bleeding and recurrence rate. In Modified haemorrhoidal artery ligation, excision of bulge can be done in higher site than excision in conventional haemorrhoidectomy because plication has been done before. Because of this, post operation can be reduced.

From this experimental, it is known that reduction of pain level in day 1 post operation is statistically significant between Modified haemorrhoidal artery ligation (4.070 ± 0.43729) and closed haemorrhoidectomy ferguson (5.630 ± 0.83340), in which MHAL technique result in lower pain level than closed haemorrhoidectomy ferguson. This result is corresponding with other experiment by Festen S in 2009 which compare Transanal haemorrhoidal dearterialization (THD) and stapled haemorrhoidopexy (SH). In that experiment, Transanal haemorrhoidal dearterialization (Mean VAS = 3.1) gives a lower result in VAS score compared to Stapled haemorrhoidopexy (Mean Vas = 5.1). In other experiment by Khafagy W in 2009, Doppler-guided haemorrhoidal artery ligation (DGHAL) is compared with open haemorrhoidectomy. In that experiment, it is known that DGHAL (VAS score = 2.9) has a lower VAS score than open haemorrhoidectomy (VAS Score = 7.99). Khanna R in 2009 also stated in her experiment that ligasure haemorrhoidectomy (LH) result in lower VAS score than Ferguson haemorrhoidectomy, in which mean VAS score of ligasure haemorrhoidectomy is 3.2 ± 0.6 and mean VAS score of Ferguson haemorrhoidectomy is 5.2 ± 1.2 .

Mean hospitalization time of MHAL technique is 3.7000 ± 0.48305 days. This hospitalization is better if it was compared with CHF technique which has mean hospitalization time 2.3000 ± 0.48305 days. In other experiment, Khanna R stated that mean hospitalization time is 1.4 days on LH procedure and 3.2 days on CHF procedure.

However, this experiment also measure rest time after operation has been done. Rest time on patient that undergo MHAL is better than on patient that undergo CHF procedure. Average rest time of MHAL group is 5.9000 ± 0.73786 days and 5.9000 ± 0.73786 days on CHF group. Sayfan, J (2001) stated that in his experiment, average rest time of patient that undergo Sutureless haemorrhoidectomy is 7.4 days.

From this experiment, we know that there is a statistically significant improvement on quality of life of patient that undergo Modified haemorrhoidal artery ligation as a management of their disease. However, we still cant conclude that MHAL procedure is globally better than CHF

because of limited sample size and evaluation time that only persist in 6 weeks.

V. CONCLUSION

From all of the data above, its can be concluded that MHAL technique suggest a better pain level in day 1 post operation compared to CHF. MHAL also suggest a better hospitalization and rest time compared to CHF.

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