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Management of Anal Fissure: Comparison of Two Treatment Methods in PMCH, Dhanbad

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Abstract: *Treatment protocol of Anal Fissure is not well customized. Conservative treatment can be done with many methods like lifestyle modification, laxatives, topical nitrates/calcium channel blockers and botulinum toxin injection. Out of many methods of surgical treatment of AF, Lateral internal sphincterotomy is most popular. In this study comparison between topical calcium channel blocker (2% diltiazem) versus lateral internal sphincterotomy was done. At 2 months follow-up period healing rate in diltiazem group is found to be 83.3% and in LIS group its 100%.*

Key Words: *Anal Fissure (AF), Diltiazem, Lateral Internal Sphincterotomy (LIS), Glyceryl Trinitrate (GTN)*

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I. Introduction:

An anal fissure is a tear in the lining of the distal anal canal that causes considerable anal pain during defaecation.[1] The most common site for primary anal fissure is the posterior midline. It was first described in 1934 by Lockhart-Mummery. [2,3] Anal fissure can be classified into primary and secondary types. Primary fissures may be associated with constipation, diarrhoea, vaginal delivery and physical trauma. Secondary fissures may be seen in patients with previous anal surgeries and/or patients suffering from- inflammatory bowel disease, granulomatous diseases (e.g. tuberculosis, sarcoidosis), or malignancy.[5] Treatment of anal fissure include lifestyle and dietary modification, fibre supplementation, laxatives, sitz bath, topical medicines (e.g. nitrates and calcium channel blockers), botulinum toxin injection and surgical treatment. Lateral internal sphincterotomy is most commonly performed surgery for anal fissure. [1,5,15] While Lateral internal sphincterotomy produces fairly good treatment outcomes in different studies, medical treatment with one agent or the other is not well customized. In this study we have tried to compare treatment outcome of LIS versus medical treatment with 2% Topical Diltiazem gel.

II. Material and Methods:

This prospective study was done in Department of General Surgery, Patliputra Medical College and Hospital, Dhanbad, Jharkhand over a period of 6 months (July 2019 to December 2019).

Inclusion criteria: 60 consecutive patients of anal fissure coming to surgical OPD for treatment who were suffering for more than 2 months and were taking some conservative treatment. Diagnosis of anal fissure was purely clinical.

Exclusion criteria:

1. Age <12 years or >70 years
2. Patients with haemorrhoids, fistula or any anal pathologies other than fissure
3. Patients with history of previous anal surgery

The patients were explained about the disease and treatment options and their written consent was taken for participation in the study. Patients were randomly divided in two groups of 30 participants each. In first group (medical group) patients were treated by oral laxative and warm sitz bath followed by application of 2% diltiazem gel over anus twice a day. In the second group (surgical group) patients were treated by Lateral internal sphincterotomy followed by warm sitz bath and laxative from 2nd postoperative day onwards. All the patients were followed up at weekly interval for 1 month then at 2 weeks interval for next one month. Success of treatment was judged based on a) healing of fissure as observed clinically and b) improvement of symptoms (painful defaecation and bleeding p/r). Details of each patient, details of treatment received by them and events

of follow-up period were recorded in preformed data collection sheet. Statistical analysis was done by Medcalc software.

III. Results:

Sex	Surgical group	Medical group	Total
Male	15	18	33 (55%)
Female	12	15	27 (45%)
P-value			0.4424

Table 1: prevalence of anal fissure in both genders

In this study it was seen that anal fissure was more common in male (65%) compared to females (35%).

Age groups	Number of patients
20-30 years	24 (40%)
30-40 years	19 (31.6%)
40-50 years	13 (21.6%)
>50 years	4 (6.6%)
Total	60

Table 2: Age distribution of study population

According to this study anal fissure is more common in young adults. 40% patients were in 20-30 years age group, 31.6% patients were in 30-40 years age group, 21.6% patients were in 40-50 years age group and only 6.6% cases were >50 years old.

Presenting complain	Number of patients
Pain	43
Pain + Bleeding	17
Total	60

Table: Presenting complain of study population

In this study while painful defaecation was present in all the cases, 17 (28.3%) cases also had complains of bleeding per rectum.

Symptomatic relief and Healing	Surgical group	Medical group	p-value
At 1weeks	19	23	0.2652
At 2weeks	23	24	0.7514
At 3weeks	23	24	0.7514
At 4weeks	26	25	0.7230
At 6weeks	30	25	0.0204
At 8weeks	30	25	0.0204

Table: Symptomatic relief in patients at different time interval in both treatment groups

In both treatment groups the response to treatment was assessed by healing of anal tear (as observed clinically) and symptomatic improvement (as stated by the patients). At 1st, 2nd and 3rd week more patients in medical group showed clinical improvement compared to surgical group but the difference was not statistically significant. At 4th week 26 patients in surgical group showed clinical improvement compared to 25 patients of medical group. Here also difference was not statistically significant. After 4 weeks of treatment 5 patients from medical group who didn't show improvement, requested for surgical treatment and lateral internal sphincterotomy was done in those patients. At 6th and 8th week follow-up all 30 patients were cured of the disease in surgical group while 25 (83.3%) patients were cured in medical group. The difference in treatment response was statistically significant

IV. Discussion:

In study done by Mapel et al the incidence of anal fissure was higher in females compared to males but the difference was not significant.[6] In our study incidence of AF is more in male compared to female and the difference is statistically non-significant.

Medical treatment starts with dietary modification, fibre supplementation. Laxatives may be required in many cases. Topical nitrates help in healing by internal sphincter relaxation and increasing local vascularity. Glyceryl Trinitrate (GTN) however has largely been by replaced by topical calcium channel blockers because of the adverse effects associated with GTN.[8] Chemical sphincterotomy by Botulinum toxin injection has shown variable results in different studies. Side effects from BT injections include temporary incontinence to flatus, increased urinary residual volume, perianal hematomas, heart block, skin and allergic reactions and changes in

heart rate and blood pressure. [9,10,11] Lateral internal sphincterotomy (LIS)is surgical procedure of choice for AF. [7]

In study done by Giridhar CM et al comparing efficacy of topical diltiazem vs LIS they found that Fissure was completely healed in 88.46% of patients in Diltiazem group and in 100% in LIS Group.[12] Similar result was derived in our study also where Diltiazem group showed healing rate of 83.3% and LIS group had 100% healing rate.

V. Conclusion:

Topical 2% diltiazem gel with sitz bath and laxative can provide good results in treatment of anal fissure. Lateral internal sphincterotomy is still the best treatment option specially in cases not responding to conservative treatment.

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