Ali Hussein Abid Swailem /J. Pharm. Sci. & Res. Vol. 11(1), 2019, 182-184

ISSN:0975-1459
Journal of Pharmaceutical Sciences and Research
www.jpsr.pharmainfo.in

Evaluation of different methods of anal fissure treatment

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Abstract

The anal fissure is a very common disease characterized by anal pain provoked during and after defecation. This pain interferes with daily activities of patients and it is associated with bleeding , constipation and mucosal discharge. The exact cause is unknown but main physiological change is exaggurated internal sphincter (tone) pressure and the main pathological change is focal ischemia. In this study we tried to compare between three methods of treatment of chronic anal fissures:-

A-Topical minoxidil B-Botulinium toxin type A injection C-Surgery (lateral internal sphincterectomy) Prospectively we selected 180 patients being treated for chronic anal fissures divided into 3 categories according to the type of treatment each category contain 60 patients distributed into 32patints were males and 28 patients were females. The categories were named as Category A in which 60 patients were treated by topical minoxidil Category B in which 60 patients were treated by Butulinium toxin type A injections on each sides of anal fissure. Category C in which 60 patients were treated surgically by (lateral internal sphincterectomy) in a period between from (1-1-2013 to 31-12-2017) the results were correlated with the statistical program SPSS using Chi-square test. Main clinical features of patients were anorectal pain and fresh bleeding per rectum. The pain remission and tissue cure was monitored for 6 weeks. The results were as follows:-In A 45 patients(75%) had pain remission while 15 patients(25%) were not response by pain remission and 42 patients(70%)had fissure cure but 18 patients(30%) had incomplete fissure cure. In B 51 patients (85%) had pain remission while 9 patients (15%) were not respond and 12 patients (80%) had incomplete fissure cure. In C All patients (100%) had pain remission and 3 patients (95%) had incomplete fissure cure. The side effects of the drugs (headache and incontinence) and rate of recurrence were examined at 3rd 6th 9th and 12th months. Very good results in medical treatment but surgical method was of the best results

Key words:-Chronic anal fissure-Minoxidil–Botulinium toxin A injection- Surgery

INTRODUCTION

Anal fissure is an elongated ulcer in the anus distal to the dentate line in chronic cases guarded by sentinel pile (1). It is mostly located at posterior surface of anus (1, 2).Some fissures locate in anterior aspect of anal region and mainly due to birth injuries. Rarely seen in lateral surface of anus in which suspicion of venereal origin is arrised (3) The main sites of anal fissures were 70% posterior 15% anterior seen in females after vaginal deliveries 10% combined 5% at lateral aspect and seen in inflammatory diseases including venereal diseases and rarely malignancies(4). Anal fissures may resulted from passage of hard stool or severe diarrhoea (in children). The main symptoms are

1-Anorectal pain provoked by defecation
2-Bleeding per rectum in a form of blood streak or frank mild bleeding.
3-Incomplete evacuation of bowel contents.
4- anal mucosal discharge associated with itching.
5-in severe cases abdominal distension
6-Vicious cycle between constipation and fissure.
7-Urinary problems. 8-Skin tags in chronic state due to local infections. Of Treatment of fissures is mainly involve reduction of sphincter pressure by chemical or surgical methods .In recent researches medical treatment has been effective .In this paper we compare the efficacy of 3 methods of treatment.

Aetiology:-

The exact cause is unknown .but there are many expected causing factors

1-Anal fissures most often happened when large or hard feces in chronic constipations.
2- Frequent diarrhea can tear the skin around anus.
3-Childbirth strainings.
4-Ischemia of anorectal region.
5-Tight anal sphincter muscles.
6-Other rare causes;-Inflammatory bowel diseases—tuberculosis—anal cancer—syphilis—herpes.

Population at risk: Infancy—elderly people—reproductive women by childbirth strainings—chronic constipators.-

Diagnosis:-

1-Detailed history and thoroughout physical examination including per/rectum digital examination.
2-Anoscopy
3-Sometimes we obligated to do anorectal examination under anesthesia due to sharp pain.

Treatment :-

1-Incresed fluids intake.
2- keeping stool soft .
3-Taking a sitz bath .
4- Increased amount of high rouphage diet i.e rich fibres diet like bran , fruits and vegetables.
5-Application of topical agents like ;-Lidocaine , astringent and cortison compounds.
6-If there is no improvement more potent agents like:-GTN--Deltiazem—Nefidipine and Minoxidil.
7-Botox injections if there is no contraindication.
8- If the patient was fit and accepted then surgery is the choice.

Preventive measures:-

1- Gentle cleaning of the anal region by non-irritant soap and warm water.
2- Avoiding the spices in food and drinking of plenty of fluids
3- Keeping the anal region dry (good hygiene).
4-Treatment of diarrhea as soon as possible especially in children.
5-Diapers and under wears of infant and children should be changed frequently.

MATERIALS AND METHODS

this study was carried out on 180 patients complain of anal fissures referring to Imam Al-Hussein teaching hospital /surgical unit for the period from 1-1-2013—31-12-2017 Inclusion criteria complaining of symptoms of fissure for at least 6 weeks. Fibrosis or extension of fissure to sphincter muscle fibers Fissure guarded by sentinel pile Exclusion criteria Patients with simultaneous Pregnants Ages Below 12 and above 80 year—Liver failure inflammatory bowel diseases ——uncooperative patients. Patients were divided into 3 categories:- Category A-patients being treated by topical minoxidilCategory B-patients being treated by botulinium toxin injections Category C-patients being treated surgically by lateral internal sphincterectomy. Category A treated for 6weeks using topical agent (0.5% minoxidil 2xper day). Category B treated by injection of butulinium toxin type A in the internal sphincter muscle. The doses of botulinium toxin type A which were used As multiple injections maximum dose 20 units (0.5 ml).These injections were performed by expert specialist surgeon strictly in the internal sphincter muscle. Category C treated by surgical operations lateral internal sphincterectomy which were done by specialist surgeon under general or regional anesthesia. All Patients were followed at 2nd-4th and 6th weeks

after beginning of treatment to assess response by pain remission and fissure cure(re- epithelization).Patients were also followed for possible complications and side effects of medical or surgical treatment at 3,6,9,12months after. Acquired data were analyzed Chi-square test and fischer exact test using SPSS version 18. P-value -<0.05 were significant.

RESULTS

In a period of 5 years 2012---2017 A total of 180 patients were followed in 3 different categories Table 1.

This study compared between 2 items of successful treatment :- pain remission and fissure cure in two categories(A and C or B and C) the P-value which recorded was less than 0.001.After beginning the therapies for each category patients were closely monitored at first ,second ,fourth and sixth weeks for evaluating the results .In term of pain remission in categories A and B were not resulted 15 and 9 patients at end of sixth weeks follow up. The pain relieved in all patients in category C whom treated surgically at end of 6th weeks follow up.

Category A 25% i.e 15 patients
Category B 15% i.e 9 patients
Category C 5% i.e 3 patients
Had incomplete fissure cure at end of 6th weeks follow up period. As seen in Tables 2, 3.

Table 1. (A) Demographic data

	Minoxidil	Botulinium toxin	Surgery		
Male	32	32	32		
Female	28	28	28		
Total	60	60	30		

Table 1 (B) age

Treatment	N	youngest	oldest	SD	P value
Minoxidil	60	12	80	11.121	0.976
Botulinium injection	60	25	64	10.662	
Surgery	60	20	76	10.244	
total	180	12	80	10.944	

Table 2.Results of pain remission

Total patients	1ST Week	2ND Week	4th Week	6th Week
Category A	24(40%)	30(50%)	42(70%)	45(75%)
Category B	30(50%)	42(70%)	48(80%)	51(85%)
Category C	48(80%)	57(95%)	60(100%)	60(100%)
P-Value A with B	0.886	0.48	0.43	0.21
P-Value A with C	<0.001	<0.001	<0.001	<0.001
P-Value B with C	<0.001	<0.001	<0.001	0,003

Table 3.Results of fissure cure.

Table 2.Results of pain remission				
Total patients	1ST Week	2ND Week	4th Week	6th Week
Category A	0	0		42(70%)
Category B	0	0		48(80%)
Category C	0	30(50%)		57(95%)
P-Value A with B	0		<0.001	<0.001
P-Value A with C	0	<0.001	<0.001	<0.001
P-Value B with C	0	<0.001	<0.001	<0.001

By this study we compared between pain resolution and fissure cure in 2categories (A ,B i,e medical treatments) and (C i.e surgical treatment) the P-value was less than 0.001 by Chi-square and Fischer exact tests. Patients were examined at first, second, fourth and sixth weeks for evaluation of variables.

Table 4. Adverse effects and complications

	A	B	C
Headache	18 (30%)	6(10%)	0
Incontinence (transient)	0	3 (5%)	3 (5%)
Recurrence	12 (20%)	3 (5%)	0

Adverse effects and complications :-In category A :-18 patients suffered from headaches .These headaches were recorded to be severe in 3 patients while in category B: 6 patients felt of mild to moderate headache but the category C there is no significant complaint of headache. Temporary gas incontinence were seen in 3 patients of category B. In category C 3 Patients reported gas incontinence early after surgery which relieved till 6th week follow-up examination. No incontinence was noticed in category A. Recurrence after one year of therapy was as following:-12 patients in category A. 3 patients in category B and category C had no recurrence as seen in table (4).

DISCUSSION

Medical treatments of anal fissure have been advanced quickly at last 15 years. Due to simplicity and availability of sevral types of good drugs in addition to that some patients are unfit for anal surgery especially elderly with ischemia and muscular atrophy when sphincter injury may cause incontinence .There are many topical drugs used in anal fissure treatment like GTN-Nefidipine – Nitric Oxide derivative—Deltiazem and Minoxidil .Advances in usage of botulinium toxin type A injections but this technique needs expert surgon to perform due to possible serious side effect .The dose of botulinium toxin should be controlled and adjusted according to the age—body weight and medical conditions .The botulinium toxin injection must be intramuscular(internal sphincter muscle) strictly so one of these medical therapies being the first option(3,5,8,10). The results of medical treatments in this study were similar to that of past studies (9, 12) in terms of pain resolution and cure of fissure. But by this study we proved that surgical method for fissure is the best –resulted treatment if patient was fit and desire to surgery(6,7,11).

This study proved that minoxidil topical treatment gave a good results by 6th week's treatment and this was similar previous research (12). Completing the period of treatment is essential (5.7).

Pain remission was a difference between the two types treatment i.e surgical and medical treatment .The surgical treatment category C result is 100% pain remission while Minoxidil therapy for pain resmission was fruitful at the end of sixth week (A=75%) .Botulinium toxin injections were very good in term of pain remission (B= 85%) without recorded risk of this treatment. There was no significant complications in usage of butulinium toxin injections as we proved in our study .So we advised to start with medical anal fissures treatments in patients who do not have desire to surgical therapy it can be used as a primary option in patients treatment and this was similar to those of other studies (10-12).

Cure of fissure:-In this study cure was seen earliar in category C than A .The rate of succees of treatment by item of cure was as following :- category (70% in category A,80% in category B while category C 95%).The results of category B and those of category C was clearly difference (P<0.05).The response of botulinium toxin injections in our study was better from previous studies (12).Results of minoxidil category A were similar to other studies (5).In our study surgical treatment enhanced wound cure .This result is similar to those of other studies (10,11). This study proved that side effects were similar to other studies (5,9).Topical minoxidil had no significant side effects .In category A the only side effect was headache in 30%of patients .Gas and liquid incontinence were seen in 3 patients =5%

category C in the first week of the study but it ended without any intervention after 1 month .It was similar to the results of McCallion et al., study (7). In category C there was no case reported recurrence after one year of follow up .In categ.A the rate of recurrence was 12patients 20%% which was higher than 5% of Seliri et al.,(11).In group B recurrence rate 3 patients 5% compared to 13% in Aurago and 0% in Jonas study(9,10).It seems that inspite of nice results medical treatments surgery is more effective if patient was fit .

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