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ORIGINAL ARTICLE

Efficacy of 0.2% GTN in Reducing Duration of Wound Healing after Fistulectomy

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ABSTRACT
OBJECTIVE: To analysis the efficacy of 0.2% GTN in patients undergoing fistulectomy for fistula in ano low variety in terms of early wound healing.
METHODOLOGY: A randomized controlled trail was conducted at general surgery department of Liaquat University Hospital Hyderabad from February 2013 to August 2013 among patients with low anal fistula. All participants underwent fistulectomy by a consultant general surgeon. Patients were divided into two groups using lottery methods. Group A treat fistula in ano with 0.2% glyceryl trinitrate ointment and group B treat fistula in ano without 0.2% glyceryl trinitrate ointment and wounds covered with pyodine soaked dressings. All patients were discharged on second postoperative day. Wound healing was assessed weekly for six weeks. Parameters of incomplete wound healing such as discharge, perineal irritation and pain were noted. Presence of granulation tissue at the end of 6 weeks was considered as sign of healing. Data was collected via study proforma.
RESULTS: This study was conducted on 94 patients in Liaquat University Hospital Hyderabad. In GTN group 35(74.46%) were male while in Control group 38(80.85%) were male. In GTN group mostly observed single opening 37(78.72%) cases while in control group 35(74.46%) cases. The healing time in GTN Group was found to be between 21-36 days (mean 26.38 days), while the healing time control group was 32-46 days with a mean of 38.64 days (P. value <0.001). The complications were also found significantly higher in the control group
CONCLUSION: In conclusion our study revealed that postoperative 0.2% GTN after fistulectomy can be used as a primary treatment of low fistula in ano as a shorter period of time for wound to early heal and the less incidence of complications is comparable to that of control group.
Key words: fistula in ano, 0.2% GTN, Effectiveness

INTRODUCTION
Fistula in ano is a common surgical problem. It is a chronic communication, lined with granulation tissue, which runs outwards from the anorectum to an external opening on the skin of the perineum or buttock, and is commonly treated surgically[1]. There are several surgical and non-surgical options for its treatment, such as fistulotomy, fistulectomy, cutting loop seton, seta stich, de-functioning temporary colostomy, fibrin glue injection and fistula plug[2]. Fistulectomy, however, is the most commonly performed surgical procedure for low type fistula in ano. In Fistulectomy entire tract from external opening on perineal skin to internal opening is excised and resulting perineal wound is allowed to heal by secondary intention by daily sitz baths and antiseptic dressings for few weeks. Postoperatively the resulting wounds are associated with prolonged wound healing, perineal discharge, irritation and pain that affect daily routine and delays return to work. Topical application of GTN 0.2% ointment has been reported to reduce anal canal spasm and improves ano dermal blood flow[3,4] and to promote wound healing. GTN, though routinely being used in the treatment of anal fissure and in expediting the healing of wound after haemorrhoidectomy[5,6,7] is not commonly used for enhancing the healing of wounds after fistulectomy. Glyceryl trinitrate has shown promising results in promoting wound healing after fistulectomy. This study has been conducted to determine the efficacy of 0.2% GTN in patients undergoing fistulectomy for fistula in ano low variety in terms of wound healing and it would help in routine use of 0.2% GTN after fistulectomy thereby enabling less postoperative pain, soiling, and early return to work.

MATERIAL AND METHODS
This study was a randomized controlled trial carried out in Department of Surgery at Liaquat University Hospital, Jamshoro from February to August 2013. All diagnosed patients above 18 to 65 years of age with low type fistula in ano regardless of gender were included. Patients having comorbidities like ischemic heart disease etc, and having suspected secondary fistulas eg; TB, chronic disease and carcinoma were excluded. Ethical approval was obtained from Ethical Review Committee (ERC) of LUMHS and written informed consent was taken from each patient. Fistulogram was performed in all patients and patients were kept on elective operation list and underwent fistulectomy by a consultant general surgeon with more than 5 years of experience. Postoperatively, all patients would undergo routine sitz bath and dressing of wound. Patients were divided into two groups using lottery methods. Group A treat fistula in ano with 0.2% glyceryl trinitrate ointment and group B treat fistula in ano without 0.2% glyceryl trinitrate ointment and wounds covered with

pyodine soaked dressings. All patients were discharged on second postoperative day. Wound healing was assessed on weekly for six weeks. Parameters of incomplete wound healing such as discharge, perineal irritation and pain were noted. Presence of granulation tissue at the end of 6 weeks was considered sign of healing. Data was collected via study proforma and analysis was done by using SPSS version 20.

RESULTS

A total of 94 patients were studied their mean age was 31±2.3 years. Males were in majority in both groups as 74.4% in GTN group and 80.8% in control group. In GTN group mostly observed single opening 37 (78.72%) cases while in control group 35(74.46%) cases. Tow opening in 7(14.89%) cases in GTN group and 10 (21.27%) cases in control group. Discharging wound was present in 72.34% patients, while pain around the anal region was in 59.57% cases. Table.1

The healing time in GTN Group was found significantly shorter as compared to C Group (P-0.001). The post-operative complications as anal irritation, infection and bleeding were significantly high in control group as compared to GTN group (p-0.001) as showed in table.2

Table 1: Descriptive statistics of demographic characteristics of both groups n=94

Characteristics		GTN Group (n=47)	C Group (n=47)
Gender	Male	35(74.46%)	38(80.85%)
	Female	12(25.53%)	9(19.14%)
Age groups	18-35 years	20(42.55%)	16(34.04 %)
	36-50 years	19(40.42%)	21(35.33 %)
	51-65 years	8(17.02%)	10(44.68%)
Number of external openings	1	37(78.72%)	35(74.46%)
	2	7(14.89%)	10(21.27%)
	>2	3(6.38%)	2(4.25%)

Table.2 post-operative complications and healing time n=94

Characteristics		GTN Group (n=47)	C Group (n=47)	p-value
Healing time	21 to 30 days	28(59.57%)	11(23.40%)	0.001
	31 to 40 days	19(40.42%)	21(44.68%)	
	41 to 46 days	00	15(31.91%)	
Complications	Anal irritation	3(6.38%)	5(10.63%)	0.001
	Infection	2(4.25%)	3(6.38%)	
	Bleeding	00	1(2.12%)	
	No healing	00	1(2.12%)	

DISCUSSION

Fistula is an abnormal pathway that conveys two epithelized surfaces; if there should arise an occurrence, it associates the region anorectal to the skin.[8] This illness is highly prevalent among men and influenced primarily individuals in the age of 30 to 40 years and most commons symptoms of the inflammatory tumor are pain and purulent drainage. However, in this study male gender was dominant in both groups and overall mean age was 31±2.3 years. Similarly, Oliveira PG et al[9] reported that the patient's median age was 38 years with rage of 12 to 78 years and most of the cases 62.8% were observed with age group of 30 to 40 years. The predominant gender was male (69.0%), in a ratio of 2.2:1. In an old study of Talpur K.A et al[10] have described the average age of presentation 37.2 years, with maximum incidence in 3rd , 4th and 5th decades[10]. In this study discharging wound was common presenting complaint in 72.34% of the patients. Although Memon AI et al[11] reported that 82% patients presented with discharge, swelling with discharge around anal canal was in 76.7% cases, itching was in 40.4% of the patients and bleeding per rectum was in 12.2% cases. In present study, single opening was in majority of the cases in both groups as 78.72% in and 74.4% in control group. However, in the study of Bokhari I et al[12] reported 88(98.87%) cases were multiple opening and one case reported in single opening.

In this study the healing time for patients treated with fistulectomy and 0.2% GTN was significantly shorter than that for patients treated by only fistulectomy (p-0.001), neither morbidity nor mortality developed. On other hand it is reported the average healing time was 12±3 weeks.[13] In a study by Scholefield involving two hundred patients operated for fistulectomy, the healing rate reported were 40.4 and 54.1% for 0.2% and 0.4% in patients treated postoperatively with GTN respectively compared to healing rate of 37.3% in placebo group.[14] In our study no bleeding was reported in 0.2% GTN group patients and in only one case of Control group developed bleeding (0.001). This was due to wider dissection in fistulectomy while no cases were reported to have bleeding following fistulotomy or fistulectomy in the literature of Malik A.I et al.[15]

In this series infection developed in 2(4.25%) cases of GTN group and 3(6.38%) cases of control group with no statistical differences. While no cases of post-operative infection were reported in other studies.[15,161] While in the study of Memon AI et al[11] reported wound infection after fistulectomy 16(9.3%) cases. Anal and perianal sicknesses, particularly fistula-in-ano by their temperament are humiliating to the patient. This sickness not just anxieties the patient through foul-smelling and soiling but also may cause of pain. Despite what might be expected, over energetic usable treatment brings about truly humiliating waste incontinence. Patients regularly whine to troublesome manifestations meddling with day-by-day obligations.

CONCLUSION

Postoperative 0.2% GTN after fistulectomy can be used as a primary treatment of low fistula in ano as a shorter period

of time for wound to early heal and the less incidence of complications is comparable to that of control group.

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