Original Research Article

To evaluate the outcome of cyanoacrylate glue in the treatment of anal fistulas

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Abstract

Background: Fistula in ano is a difficult problem that surgeons have struggled with since the time of Hippocrates. Traditional surgical techniques such as fistulectomy, fistulotomy and flaps were for a long time the only option for treatment. These procedures were associated with complications like excessive bleeding, faecal incontinence, recurrence, infections etc. But now, newer procedures and surgical techniques have been proposed for the treatment of anal fistulas. The Development of glue has raised renewed interest in sphincter-sparing techniques. The employment of cyanoacrylate glue is one of the newer promising techniques.

Materials & methods:

- From October 2020 to October 2021, patients with fistula-in-ano who were admitted to different surgical units at Alluri Sitarama Raju Academy of Medical Sciences were the subject of the study. In accordance with the proforma, information was gathered.30 patients in total who met the requirements were enrolled in the trial..
- Routine laboratory tests were performed on all individuals. The patient was posted for the procedure under spinal anaesthesia after fulfilling the requirements. The fistulous tract was cleansed with curet and saline solution.

Results:

- With the main injection, 22 individuals were cured, and all fistulous track discharge was stopped.
- One more injection was needed for two patients, and one patient needed fistulectomy.
- One patient needed a colostomy and a fistulectomy to repair complicated fistulas that had developed.

Conclusion: Patients with low anal fistulas and simple fistulas may be given cyanoacrylate adhesive as an alternative to fistulectomy. However, in order to further demonstrate their efficacy, larger series need to be examined.

Key Words: Cynoacrylate glue, anal fistula

Introduction

Fistula in ano is a common problem although there are wide differences in estimates of incidence in the general population. In four European nations, this varied from 1•04 to 2•32 new patients per 100 000 people.. In 2005, over 6000 surgical operatives were performed for anal fistula in the UK.

References to fistula-in-ano date to antiquity. The fascination fistula-in-ano has been written in books and papers. In about 430 BCE, Hippocrates referred to surgical therapy for fistulas, and he was the first person to use a seton (from Latin seta "bristle").

The fistulotomy procedure and seton usage were described in Treatises on Fistula in Ano; Haemorrhoids, and Clysters by English surgeon John Arderne (1307-1390) in 1376. According to historical accounts, Louis XIV received treatment for an anal fistula in the 18th century. Salmon founded St. Mark's Hospital in London, which treats fistula-in-ano and other rectal disorders.

Prominent doctors/surgeons like Goodsall and Miles, Milligan and Morgan, Thompson, and Lockhart-Mummery made significant advances to the treatment of anal fistula in the late 19th and early 20th centuries. These medical professionals provided aetiology ideas and classification schemes for fistula-in-ano. Little has evolved in the understanding of the illness process since this early development .The classification scheme that is now widely used was improved by Parks in 1976. Over the past few decades, many authors have presented new techniques and case series to minimize recurrence rates and incontinence complications, but despite more than two millennia of experience, fistula-in-ano remains a perplexing surgical disease

Aims & objectives

To assess the results of anal fistula therapy with cyanoacrylate adhesive.

Methodology

- The study was conducted for 12 months ,i.e., from October 2020 to October 2021. The study was conducted in the Department of General Surgery of Alluri Sitarama Raju Academy of Medical Sciences located at Eluru, West Godavari (District), Andhra Pradesh.
- Information was obtained according to the proforma. 30 patients in total who met the requirements were enrolled in the trial.

Inclusion criteria

1) Age >18 years of either sex.
2) Patients proved to have a fistula in ano by sonofistulogram.
3) Patients willing to give informed written consent.

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Exclusion criteria

1) Fistula due to Crohn`s disease.
2) Recto vaginal fistula.
3) Patients who refuse to give consent

Procedure

- Patients were informed about the procedure, and informed consent was taken. Preoperatively,
- patients were thoroughly examined, and digital rectal examination (DRE) along with proctoscopy was done in each patient.
- The external entrance and internal opening were both noted. The patient was positioned in a lithotomy posture in the operating room, and the peri-anal area was first cleaned and covered. Following DRE, proctoscopy was performed.
- The track was extensively cleaned with ordinary saline after carefully identifying the interior and external holes. Curetted and debrided the extra granulation tissue that was present along the fistulous tract.
- Under spinal anaesthesia, the internal opening was closed with Vicryl 3-0 suture and An 8-F infant feeding tube was inserted through the external opening and advanced until its tip could be seen at the internal opening.
- The glue was slowly injected through the feeding tube by squeezing the glue through a nozzle. The catheter was slowly withdrawn while the glue was still injected until the catheter tip with bubbles appeared at the external opening.
- The thumb was placed over the exterior orifice and pressure was applied for thirty seconds. Within 30 seconds, the glue began to polymerize, causing a small amount of heat discomfort in the patients. The patient received oral antibiotics and analgesics following the operation. After surgery, patients underwent reexaminations every two weeks for the first two months, and then once every three months for the duration of the research. A second glue treatment was administered if, after the initial 4-week period of treatment, the fistula had not healed. The likelihood of infection and recurrence was used to determine the procedure's success after therapy.

Results

Table1: Age distribution

Age	Frequency	Percent
21-30	9	30.0
31-40	10	33.3
41-50	4	13.3
51-60	6	20.0
>60	1	3.3
Total	30	100.0

Age distribution of patients

The mean age of the subjects was 38.57+/- 11 years. The Minimum age was 22years and the maximum age was 62years. The majority of subjects were in the age group of 31-40 years.

Table2: Sex distribution

	Frequency	Percent
Male	23	76.7
Female	7	23.3
Total	30	100

Sex distribution

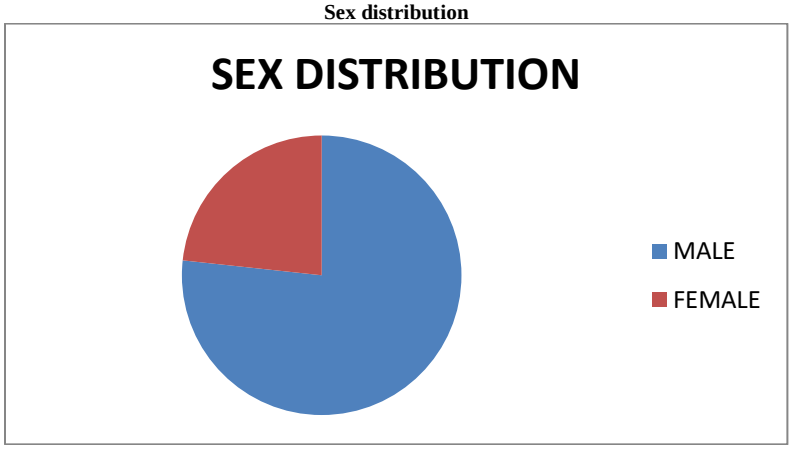

Fig. 1: Sex Distribution

Table 3: Post-procedure complications

Complications	Frequency	Percent
Nil	22	73.3
Yes	8	26.6
Total	30	100.0

The majority of the participants (73.3%) did not experience any post-procedure issues like infection, recurrence, or incontinence. Post-procedure difficulties were seen in 26.6% of the subjects.

Table 4: Recurrence

Recurrence	Frequency	Percent
No	26	86.6
Yes	4	13.3
Total	30	100.0

The post-procedure complication in the form of recurrence of the fistula occurred in 13.3% of the study group. 4 patients showed recurrence of fistula in ano after 1 sitting of cyanoacrylate glue injection. 2 patients with fistula completely healed with the second sitting of glue injection, while 1 patient required fistulectomy. However, one patient developed a complex fistula and had to be treated with Colostomy and Fistulectomy.

Table 5: Incontinence

Incontinence	Frequency	Percent
No	30	100
Yes	0	0

Incidence of incontinence

There was no evidence of incontinence occurring after glue injection, with its incidence being 0%.

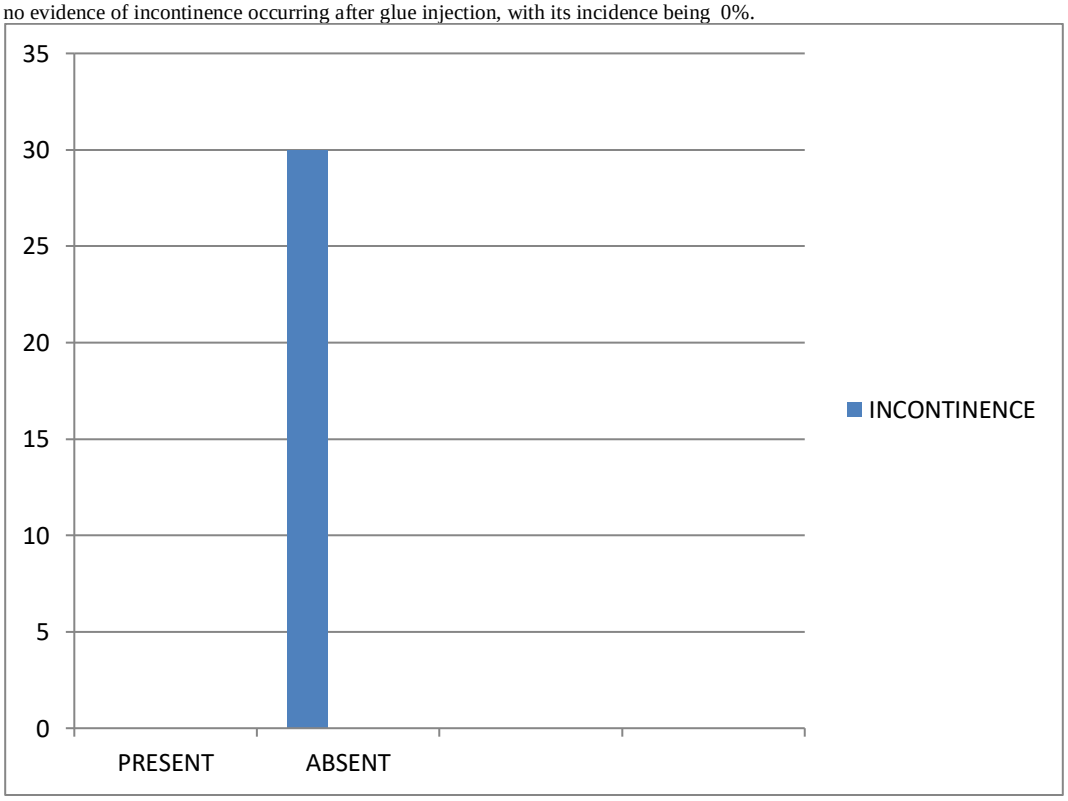

Fig.2: Representation of incidence of incontinence

Discussion

Thirty patients with an anal fistula received cyanoacrylate glue injections as part of our study to assess the effectiveness of the treatment.

23 patients were male and 7 were female.

- 8 Patients developed post procedure complications in the form of infection and recurrence.
- 4 Patients developed complication in the form of infection and had to be treated with IV antibiotics.
- Four patients had their ano fistula return. With a second glue injection session, two patients totally recovered; for one patient, a fistulectomy was necessary. One patient underwent a colostomy and fistulectomy after developing complicated fistulas.
- In a study by Jain et al,
- 20 patients were administered cyanoacrylate glue to treat fistula in ano. 15 male and 5 female patients were enrolled.
- 17 patients completely healed with primary injection with stoppage of any discharge from the fistulous tract.
- Two patients required a second sitting of glue injection and there was no evidence of any discharge thereafter. However one patient who had 2 external openings continued to discharge even after 2 sittings of cyanoacrylate glue administration and hence fistulectomy had to be done.
- There was no evidence of intolerance to glue/ hemorrgae/ perianal abscess/ incontinence in the patients. They concluded by saying that cyanoacrylate glue administration was safe, easy, non invasive and effective with less post procedure hospital stay.

In a study by Paulo et al,

- In order to research the use of cyanoacrylate glue in the treatment of anal fistulas, 21 patients with cryptoglandular fistula in the ano were enrolled, of which 14 were men and 7 were women.
- 7 were simple fistula and 14 were complex fistula.
- 5/7 simple fistula healed with primary glue injection in the first sitting with stoppage of any discharge thereafter.
- 2 needed second and third sitting of glue administration. 10/14 complex fistula healed with primary glue injection. In the rest of the 4 patients, one patient showed intolerance to the glue and required intervention to remove the glue. One patient required second sitting of glue administration, and one patient required a third sitting. There was loss to follow-up of one patient
- The cumulative healing percentage with one sitting of glue administration was 71.4% and overall healing with more than one sitting was 90%.
- They came to the conclusion that using cyanoacrylate adhesive to treat a fistula in an o was a promising therapy with little chance of recurrence and few problems following the procedure.

Conclusion

- In our study, 30 individuals were included, of whom 23 were men and 7 were women.
- Out of 30 patients, 22 got cured with the primary sitting of cyanoacrylate glue injection.
- The success rate following cyanoacrylate glue injection with primary sitting was 73.3%.
- However two patients got cured with a second sitting of glue injection.
- After the second cyanoacrylate glue injection session, the overall cumulative healing rate was 80%.
- postoperative complications occurred in 8 patients (26.6%) in the form of infection 13.3% and recurrence 13.3%.
- According to our study, Cyanoacrylate glue can be given to patients with low anal fistula and simple fistula as a substitute for fistulectomy. 35% of the high anal fistulas had difficulties
- However larger series need to be evaluated to prove their efficacy further.

Conflict of Interest: Nil Source of support: Nil

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