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Nigam's modification of thiersch procedure for rectal prolapse

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Abstract
Nigam's Modification of Thiersch Procedure (NMTP) is a minimal invasive, simple, easy and safe procedure for rectal prolapse in persons with high-risk and when other procedures are not applicable. Recurrence is not seen if the patient selection is done carefully and procedure is done according to guidelines. Post-operative complications are not major and can be dealt with simple ways. It is a day care surgical procedure. It can be repeated if recurrence occurs. NMTP is a useful procedure where other procedures are denied and the patient might-remain untreatable. Thiersch procedure is an operation for rectal prolapse. Nigam's modification of Thiersch procedure (NMTP) is an improved version of the original Thiersch procedure. Ten patients of rectal prolapse were operated by NMTP, Nov 11 to Nov 21. A description of operative technique and patient demographics are presented.

Keywords: thiersch procedure rectal prolapse

Introduction

Rectal prolapse occurs when the rectal walls have prolapsed to a degree where they protrude out of the anus and are visible outside the body [1]. Rectal prolapse is most commonly seen in elderly women but it can occur at any age in either sex. It is a very rarely life-threatening, but the symptoms can be debilitating if left untreated [2]. Nigam's modification of Thiersch procedure is a simple, minimal invasive and easy to operate procedure for rectal prolapse. Post-operative complications after NMTP are not major and can be dealt with simple ways. Recurrence is not seen if the patient selection is done carefully. It is a day care surgical procedure. It can be repeated if recurrence occurs. NMTP is a useful procedure where other procedures are denied and the patient might-remain untreatable.

Thiersch procedure is a minimally invasive procedure that involves placing suture encircling the anal canal under the skin. It is used in rectal prolapse and fecal incontinence. It was first described by the German Surgeon, Karl Thiersch in 1891. William B Gabriel surgeon, said in his scientific research paper at the joint-meeting of the American proctologic society and the section of proctology of the royal society of medicine, Philadelphia, Pennsylvania, May 9 to 14, 1964, that "This procedure has a definite and perhaps unique sphere of usefulness in certain well-defined cases which might otherwise be untreatable".

Rectal prolapse was first recognized in 1500 BC. Rectal prolapse is classified into two types: complete or full thickness prolapse and incomplete or partial thickness prolapse.

The purpose of Thiersch operation or anal encirclement is to avoid rectal prolapse to happen by reducing anal verge without reducing the size of middle and upper portions of anal canal and rectum. Theirch's used a silver wire as encircling suture[3] which is not used now. Presently, because of ulcers and other complications instead of wires, sutures and nylon, Dacron, silastic, Teflon and silicon rubber materials are used [4]. We use number 1 prolene suture. Thiersch procedure is performed frequently in patients with old age or high risks with rectal prolapse. It is a simple procedure using a suture or prosthesis that narrows the anus [5].

Materials and Methods

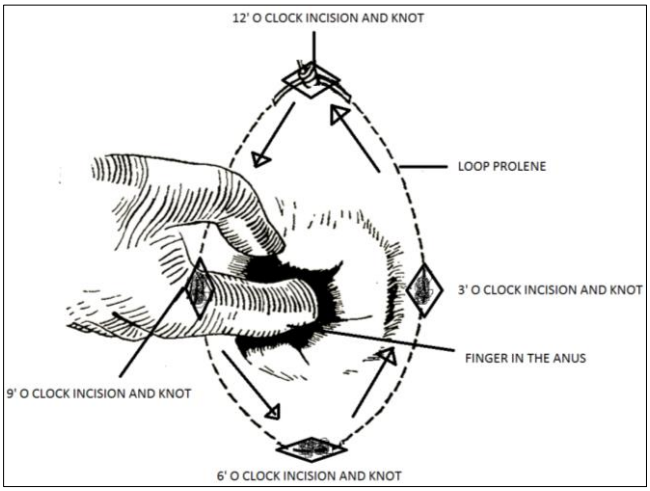

Fig 1: Diagrammatic depiction of teigariTs modification of Thiersch procedure (NMTP)

Ten patients were operated by Nigam's modification of Thiersch Procedure (NMTP) between Nov2011 to Nov 2021 in various hospitals of Gurgaon, Haryana, India. Informed consent was taken from all patients. Routine investigations were performed including lower GIT endoscopy, i.e. sigmoidoscopy or colonoscopy in all patients. All patients underwent preoperative

preparation with phosphate enema and saline bowel wash. In our series 2 patients were females and 8 were males. Two patients were under 60 years of age and 8 patients were over 60 years of age. All patients were given a 3 days course of amoxiallin and metronidazole from the day of operation. We used prolene number 1 loop suture in all cases. We made four, 5 mm incisions at anal verge on skin at 12, 3, 6 and 9 o'clock positions. The needle with loop prolene was first passed from 12 o'clock position to 9 o'clock position and a knot applied then needle passed from 9 o'clock position to 6 o'clock position again a knot applied then needle was passed from 6 o'clock to 3 o'clock incision and a knot applied and lastly needle was passed from 3 o'clock position to 12 o'clock incision then index finger was passed per rectally. Then the suture at 12 o'clock position was tightened around the base of index finger and knot was made and the suture was cut. The encircling suture was subcutaneous but approximately 0.5 cm deep from surface. There was no need in this procedure to close 5 mm small four wounds as they healed with dressing application with povidone-iodine solution soaked gauze. All patients were operated under spinal or local anaesthesia.

Results

Ten patients of rectal prolapse, 2 females and 8 males underwent Nigam's modification of Thiersch procedure (NMTP) between Nov 2011 and Nov 2021. Patients were between 57 years to 92 years age, mean age was 74.5 years. Two female patients were multigravidas. One had 2 children, elder was full term normal delivery baby and second was caesarean baby. The other women had three children, two were full term normal delivery babies and one was caesarean baby. Clinical features were diarrhea, constipation, anal bleeding, mucus discharge with stool, and pain. All patients had various degree of rectal prolapse (Table 1).

Table 1: Distribution of cases according to clinical features.

Clinical features	Number	Percentage
Mucus discharge per	7	70%
anus	4	40%
Diarrhea	4	40%
Constipation	3	30%
Bleeding per rectum	5	50%
Painful defecation		

(n=10)

All 7 patients with mucus discharge were advised to use adult diaper till operation. Post-operative complications were minor i.e. mild pain at anus, minor wound infection and cellulitis at the operation site. Two (20%) patients developed post-operative retention of urine which was relieved by temporary catheterization. All patients were discharged after 24 hrs. Hospital stay. Pain was treated with tab paracetamol 500 mg when required. No patient developed major complications after operation such as massive bleeding, faecal impaction leading to intestinal obstruction or rectal wall perforation (Table 2). No patient required removal of encircling suture due to inability to pass stool. Eight patients required mild laxative for 1 week (80%) post operatively to facilitate defecation. No recurrence (0%) was noticed.

Table 2: Post-operative complications after NMTP

Complications	Number	Percentage (%)
Pain	3	30%
Bleeding	0	0%
Urine retention	2	20%
Faecal impaction	0	0%
Wound infection	2	20%
Rectal wall perforation	0	0%

(n=10)

Discussion

Thiersch procedure is a time tested procedure for rectal prolapse in high risk patients where other modalities of treatment are not possible without risk. Rectal prolapse can cause fecal incontinence which a very annoying condition for the patient. Initial partial rectal prolapse can be sometimes treated with stool softeners and other medication but usually requires surgery. Anal manometry for estimating the strength of the anal sphincter muscles is only sometimes required and similarly anal electromyography (EMG) to determine the nerve damage as the reason for weakness of anal sphincter and also to determine the coordination between the muscles of rectum, anal canal and the anal sphincter. Delaying the treatment of rectal prolapse can lead to complications, some serious also such as bleeding from rectum, rectal wall ulcers, strangulation of rectum and gangrene and necrosis of rectum. In our series of NMTP we did not observe any gangrene or necrosis of rectal wall.

The principle of Thiersch procedure is to create a mechanical barrier to contain the prolapse and provoke an inflammatory response on the perirectal tissues to generate a rather than a toneless sphincter [6]. In NMTP inflammatory response and development of fibrosis happen early as compared to the original Thiersch procedure due to application of four knots in NMTP. Knots stimulate perirectal tissue leading to quick and adequate fibrosis.

Poole GV published his modified Thiersch operation for rectal prolapse in American Journal. He performed 15 cases during 20 years. Prolapse was corrected in 13 of 15 patients. He mentioned that although the Thiersch procedure is not applicable for all patients with rectal prolapse, it can be used successfully when performed properly. [7] We have same opinion for NMTP that if performed sincerely and properly you can get 100% success without any major complications as we achieved.

Recurrence of rectal Prolapse after operation is less with abdominal procedure as compared to perineal operations. We had no recurrence in our study.

NMTP has some advantages over original Thiersch procedure, these are

- NMTP is a simple and easy operation without much complications.
- NMTP is an economical procedure.
- NMTP produces early and more prompt fibrosis due to application of four knots.
- There is no need to close small incisions.
- Learning curve of NMTP is short.
- NMTP can be done in any hospital even in a small a nursing home.

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Conflicts of interest
There are no conflicts of interest

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