

Combined Thiersch's Procedure and Subanodermal Coagulation for Complete Rectal Prolapse in the Elderly

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Key Words

Rectal prolapse · Thiersch's procedure ·
Radiofrequency coagulation · Fecal incontinence

Abstract

Background: The author describes a modification of Thiersch's procedure in patients with complete rectal prolapse by inducing fibrosis at the anal verge through circumferential subanodermal coagulation using a radiofrequency device. **Materials and Methods:** An Ellman radiofrequency generator was used for coagulation. The postoperative events were recorded. The patients were followed over a period of 2 years to assess late outcome. **Results:** Postoperative complications were observed in 2 patients. One of these developed suppuration in the tract of the encircling wire that needed removal, while the other had a recurrence due to loosening of the wire. At a 2-year follow-up, 3 patients developed recurrence while 1 had a persistent complaint of fecal incontinence. **Conclusion:** This study shows that a combined procedure of radiofrequency coagulation followed by Thiersch's circumanal wiring is quick and easy to perform with no formidable morbidity in elderly patients who are otherwise considered at high risk for definitive surgical procedures.

Introduction

The surgical treatment of complete rectal prolapse has been a subject of great debate. The age-old procedure of encirclement of the anal orifice still holds good for the old, frail or infirm who otherwise are high-risk patients. Thiersch's [1] procedure was not very popular until 1951, when its use was reviewed by Gabriel [2] to generate a renewed interest towards this approach. The basis of this procedure was to introduce a circumanal wiring which would mechanically support and contain the prolapse and hopefully provoke a tissue reaction in its surroundings to produce a ring of fibrosis which would in turn re-enforce the atonic sphincter.

Modifications to Thiersch's procedure were proposed to reduce the attendant complications. Zangi [3] tried narrowing the anal canal by inducing fibrosis through circular incisions in the perianal region, which were left to granulate. He could achieve a firm ring of fibrous tissue constricting the anal orifice and achieved gratifying results in 23 patients with only one single recurrence.

We combined the principles of the above two procedures to innovate a novel approach in elderly patients who were considered unsuitable to undergo a definitive procedure for complete rectal prolapse. Instead of giving circular incisions in the perianal region as suggested by

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Fig. 1. Complete rectal prolapse.



Fig. 2. Circumferential radiofrequency coagulation of the anoderm.

Table 1. Patient demographics (n = 38)

| | |
|--|------------|
| Mean age, years (range) | 74 (65–91) |
| Sex | 26 males |
| Preoperative symptoms (number of patients) | |
| Prolapse | 38 |
| Discharge | 35 |
| Incontinence | 19 |
| Pain (VAS 2–5) | 11 |
| Bleeding per rectum | 8 |
| Pruritus | 6 |
| History of previous procedure for prolapse (n = 6) | |
| Abdominal | 1 |
| Delorme's | 2 |
| Thiersch's | 3 |

Zangi, we created a circumferential zone of coagulation at the anal verge with a radiofrequency device in an attempt to induce fibrosis of the subanodermal area. The coagulation was followed by a circumanal encirclement using a synthetic material.

This study describes the procedure and a retrospective evaluation of patients treated by employing this new technique.

A radiofrequency generator Ellman dual frequency 4 MHz (Ellman International, Oceanside, N.Y., USA) was used for coagulation.

Materials and Methods

This study was carried out on 38 patients reporting with complete rectal prolapse. The patient demographics are presented in table 1. All these patients were having complex medical problems and thus were not found fit to undergo either abdominal surgery or any extensive perineal procedure for rectal prolapse. The procedure was carried out under local anesthesia in 33 patients, while the remaining 5 patients were operated under caudal block.

Informed consent was obtained after due explanation of the procedure. The study was approved by the national ethics committee.

Preoperative Preparation

A fleet enema was given on the day of surgery. An intravenous dose of 1 g of ceftriaxone sodium was administered just before the procedure.

Operative Procedure

Holding the skin of the anal verge with straight artery forceps at the 3, 7 and 11 o'clock position, the subanodermal area was exposed. The ball electrode of the radiofrequency device designed to achieve coagulation was evenly rotated over the complete circumference of the exposed anoderm, until a zone of coagulation was produced. Appearance of a dusky white area (blanching) was indicative of adequate tissue coagulation. Precaution was taken to ensure that the coagulated area remains confined to the anoderm and was not extended to the anal mucosa. This maneuver was followed by Thiersch's operation as described by others (fig. 1–3).

Postoperative Care

Patients were discharged only after they had passed stool and a gentle digital examination ruled out any fecal impaction. Antibiot-



Fig. 3. Circumanal wiring.

ics and analgesics were prescribed for 10 days. Patients were asked to take 20 ml of lactulose solution (Duphalac) twice in a day. They were asked to report back in case they do not pass at least one stool per day.

The first follow-up was made after 1 month of the procedure to assess patient's complaints regarding pain using a visual analogue scale (0 = no pain and 10 = worst pain the patient ever experienced). The operated area was examined to assess wound healing, rectal digitation to assess the caliber of anal verge if too tight or too loose, any prolapse at rest or on straining, and evidence of infection in the form of discharge, induration or tenderness at the anal verge.

The patients were subsequently followed after 24 months of the procedure to assess recurrence, continence score (2 = normal under all circumstances and no soiling, 1 = occasional escape of feces or flatus, 0 = no control) and any staining of underclothes (2 = always clean, 1 = occasional staining, 0 = always stained). Patient's satisfaction score (good, fair or poor) was also assessed.

Results

Four male patients had urine retention in the postoperative period. They were catheterized once and got immediate relief. No indwelling catheter was needed.

One patient returned on the 13th postoperative day with severe pain and pussy discharge from the site of the wounds. The complete tract of wire encirclement was filled with pus. The patient was hospitalized and treated with antibiotics and supportive therapy after removing the wire. Another patient came back with complaints of partial prolapse of the rectum needing digital

Table 2. Observations at 2-year follow-up

| | |
|---------------------------------------|-----------|
| Continence score ^a | 2 (28) |
| | 1 (4) |
| | 0 (3) |
| Staining of underclothes ^b | 2 (25) |
| | 1 (9) |
| | 0 (1) |
| Satisfaction score | good (20) |
| | fair (11) |
| | poor (4) |

Number of patients shown in parentheses.

^a 2 = Normal under all circumstances and no soiling; 1 = occasional escape of feces or flatus; 0 = no control.

^b 2 = Always clean; 1 = occasional staining; 0 = always stained.

repositioning. The wire was found loosened and removed. A new wire was introduced in both these patients after 6 weeks. They did not report with similar complaints again.

At 1 month follow-up, 4 patients complained of pain at the site of operation (VAS 1–2), two had intermittent passage of mucus per rectum and one was complaining of inability to hold the stool. On digital rectal examination, a distinct zone of fibrosis and contraction was felt just inside the anal verge. There was minimum or no tenderness at the operated site. The wounds at the site of wire insertion were healed, though the knot was palpable. The wire ring was not felt. The patients were asked to continue using lactulose solution in the dose prescribed before.

24 Months' Follow-Up

Three patients were lost to follow-up during this period. Two of them reportedly died due to some other ailment while the third could not be traced. In those reported at follow-up, the incision site was found well consolidated and the knot was no longer felt. None of the patients complained of any pain. Three patients developed recurrence of prolapse. The patients were offered a repeat procedure. While 2 patients consented for it, the third refused. The problem of fecal incontinence remained unresolved in 1 patient. The observations regarding continence score, soiling and satisfaction grading are given in table 2.

Discussion

Most of the surgical procedures proposed for treatment of complete rectal prolapse are fraught with considerable morbidity in elderly and poor-risk patients. The goal for surgery for rectal prolapse should aim at correcting the prolapse, avoiding fecal incontinence and constipation, and while doing so to achieve little or no mortality or morbidity [4].

While Thiersch's operation for rectal prolapse has largely been abandoned, it still can be a viable alternative in patients who are not fit to undergo a standard operation for rectal prolapse [5].

As compared to various other extensive procedures for complete prolapse of the rectum in high-risk elderly patients, radiofrequency coagulation followed by Thiersch's operation has exhibited some distinct advantages [6]. It obviates the risks associated with an abdominal or extensive perianal surgical procedure [7]. It involves a minimal degree of surgical trauma and thereby minimizes complications associated with it. It can be easily performed under local anesthesia to avoid anesthesia-related risks. The procedure can be repeated in cases of recurrence due to loosening or breaking of the wire [8].

Radiofrequency coagulation helps in inducing fibrosis at the anal verge, which leads to the creation of a stronger zone of narrowing across the anoderm [9, 10], which helps

contain the prolapse, and thus doubly ensures the occlusion of the anal opening. While ablating the targeted tissue, the controlled radiofrequency waves cause minimum damage to the surrounding structures like the anal sphincters [11]. This in turn helps in preserving sphincter function, so vital in restraining a rectal prolapse.

It is, however, admitted that this procedure merely holds the prolapse within the anal canal and is not a curative maneuver. Nevertheless, it can be used successfully if performed properly [12]. The procedure is simple and swift to perform, with no significant morbidity. It can be carried under local anesthesia by a surgeon not having an elaborate enough infrastructure to carry out complex procedures for rectal prolapse [13]. No special wound care or prolonged hospitalization is needed. The patient can resume his routine activities soon after the operation. Patient satisfaction is high and the long-term results are satisfactory [14].

Conclusion

The operation for rectal prolapse must be tailored to the physiological needs of the patient. The present study shows that radiofrequency coagulation followed by Thiersch's operation has a place in the treatment of complete rectal prolapse in elderly and poor-risk patients.

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