International Surgery Journal
Rakshit K et al. Int Surg J. 2026 Jul;13(7):1257-1261
https://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20262006

Case Report

Emergency management of incarcerated rectal prolapse: combined Altemeier and Thiersch procedures in a surgical emergency

Kamalesh Rakshit*, Ipsita Mondal, Praveen Tripathi

Department of General Surgery, Gouri Devi Institute of Medical Sciences and Hospital, Rajbandh, Durgapur, West Bengal, India

Received: 28 April 2026
Accepted: 09 June 2026

***Correspondence:**
Dr. Kamalesh Rakshit,
E-mail: kamaleshraxit@gmail.com

ABSTRACT

Incarcerated complete rectal prolapse is an uncommon but potentially life-threatening colorectal emergency because delayed treatment may lead to vascular compromise, bowel gangrene, and perforation. Surgical management depends on the patient's physiological status, bowel viability, and anal sphincter function. A 59-year-old man presented with abdominal pain, recurrent vomiting, abdominal distension, constipation, and a protruding rectal mass. He had type 2 diabetes mellitus and hypertension and appeared cachectic. Examination revealed gross abdominal distension, absent bowel sounds, and bilious aspirate following Ryle's tube insertion. Per rectal examination demonstrated a 15 cm irreducible prolapsed rectum that was edematous, congested, and non-reducible. Concentric mucosal folds confirmed incarcerated procidentia with impending ischemia. Emergency perineal proctosigmoidectomy (Altemeier procedure) under regional anesthesia was performed, followed by hand-sewn coloanal anastomosis. Because of marked anal sphincter laxity, a Thiersch repair using polypropylene encirclement suture was added. The postoperative course was uneventful, with early return of bowel function and no evidence of anastomotic leak, wound complication, or early recurrence. The patient was discharged on postoperative day 3. In emergency incarcerated rectal prolapse, a combined perineal approach using Altemeier resection with Thiersch reinforcement can provide safe and effective treatment, particularly in patients with redundant bowel and significant anal sphincter weakness.

Keywords: Rectal prolapse, Incarcerated procidentia, Altemeier procedure, Thiersch repair, Perineal proctosigmoidectomy, Emergency colorectal surgery

INTRODUCTION

Complete rectal prolapse is defined as circumferential full-thickness protrusion of the rectal wall through the anal canal resulting from failure of pelvic floor support and anal sphincter competence.[1] It represents the final stage of progressive pelvic floor dysfunction involving attenuation of the levator ani musculature, deepening of the pouch of Douglas, loss of rectal fixation, and impairment of the anal sphincter complex. Although the condition is more commonly encountered in elderly women, it may also occur in men, particularly in association with chronic constipation, malnutrition, neurological dysfunction, or long-standing increased intra-abdominal pressure.[1]

Patients with rectal prolapse commonly present electively with reducible prolapse, mucus discharge, bleeding, constipation, fecal incontinence, or incomplete evacuation. In contrast, incarceration of complete rectal prolapse is uncommon and represents a surgical emergency because venous outflow obstruction may rapidly progress to mural edema, arterial compromise, bowel ischemia, gangrene, and perforation if treatment is delayed.[2] When edema becomes severe, reduction may become impossible, and the prolapsed segment may progress to strangulation.

Emergency management requires rapid clinical assessment of bowel viability, hemodynamic reserve, associated intestinal obstruction, and anal sphincter function. In emergency settings, operative intervention should not be delayed once vascular compromise is suspected. Although abdominal procedures such as rectopexy provide lower recurrence rates in elective practice, perineal procedures are frequently favored in acute situations because they avoid laparotomy, reduce operative stress, permit regional anesthesia, and allow direct treatment of the prolapsed bowel.[3]

Among perineal techniques, perineal rectosigmoidectomy (Altemeier procedure) remains particularly useful when the prolapsed segment is incarcerated or ischemic because it allows full-thickness resection of compromised rectosigmoid bowel with immediate restoration of intestinal continuity.[4] Additional procedures directed at the anal outlet may be considered when severe sphincter laxity contributes substantially to prolapse pathophysiology. The Thiersch procedure, consisting of circumferential anal encirclement, may provide supplementary mechanical support in selected patients.

We report a case of incarcerated complete rectal prolapse with bowel obstruction successfully managed by emergency Altemeier procedure combined with Thiersch anal encirclement, highlighting the practical role of combined perineal surgery in emergency colorectal practice.

CASE REPORT

A 59-year-old man presented to the emergency department with dragging abdominal pain, recurrent vomiting, and a protruding mass per rectum. He also reported progressive abdominal distension and inability to pass stool. His medical history was significant for type 2 diabetes mellitus and hypertension.

He appeared cachectic but remained functionally independent. He had experienced intermittent self-reducible rectal prolapse for several months without prior surgical consultation.

There was no history of previous abdominal surgery, chronic neurological illness, chronic pulmonary disease, or connective tissue disorder. The patient denied prior episodes of fecal incontinence but admitted to intermittent constipation over several years, often requiring straining during defecation. There was no significant history of rectal bleeding, melena, or weight loss suggestive of malignancy.

Abdominal examination demonstrated marked distension with absent bowel sounds. There was generalized tympany without guarding or rebound tenderness. Following insertion of a Ryle's tube, bilious fluid was aspirated, suggesting intestinal obstruction. Urinary catheterization showed adequate urine output.

Per rectal examination revealed an approximately 15 cm full-thickness rectal prolapse protruding beyond the anal verge. The prolapsed segment was markedly edematous, congested, and irreducible. Circumferential concentric mucosal folds confirmed complete rectal procidentia, differentiating it from prolapsed hemorrhoids or mucosal prolapse. Dusky discoloration and venous congestion suggested impending ischemia. There was no obvious mucosal ulceration, frank necrosis, or perforation at presentation.

Laboratory investigations showed mild dehydration with hemoconcentration but no significant electrolyte derangement. Hemoglobin was within acceptable range. Leukocyte count was mildly elevated, consistent with inflammatory stress. Renal function and blood glucose were optimized preoperatively. Given the obvious emergency clinical findings, advanced imaging was deferred to avoid delay in definitive treatment.

Gentle manual reduction, including the use of hygroscopic measures, failed to achieve reduction. Because the prolapsed bowel remained tense and irreducible with progressive vascular congestion, a diagnosis of incarcerated complete rectal prolapse with bowel obstruction was established, and emergency surgery was planned after informed consent, including discussion of possible stoma formation.

Broad-spectrum intravenous antibiotics were initiated preoperatively. Adequate intravenous hydration and electrolyte correction were administered. Thromboprophylaxis was also provided according to institutional protocol.

The procedure was performed under regional anesthesia with the patient in lithotomy position. After antiseptic preparation and draping, the prolapsed rectum was exposed using stay sutures for traction. A circumferential full-thickness incision was made approximately 1.5 cm proximal to the dentate line. Sequential dissection was carried through the rectal wall until the peritoneal reflection was entered anteriorly and posteriorly.

The redundant sigmoid colon was progressively delivered through the perineal field. Mesenteric vessels were individually clamped, ligated, and divided in sequence to mobilize the prolapsed rectosigmoid segment while preserving adequate vascular supply to the proximal bowel. The congested redundant bowel was resected until healthy proximal bowel with satisfactory perfusion, pulsatile mesenteric vessels, and viable mucosal coloration was identified.

A hand-sewn coloanal anastomosis was fashioned using interrupted absorbable sutures in a tension-free manner.[4] Anastomotic integrity was assessed visually and digitally. The anastomosis appeared well perfused and without undue tension.

Marked sphincter laxity with a patulous anus was noted intraoperatively. Therefore, a Thiersch anal encirclement procedure was added by creating a circumferential subcutaneous tunnel around the anal verge and passing a 1-0 polypropylene suture, tied over the surgeon's index finger to preserve adequate lumen caliber. Hemostasis was secured, and no fecal diversion was required because bowel viability was satisfactory and the anastomosis appeared secure.

The excised specimen demonstrated markedly edematous redundant rectosigmoid bowel without transmural necrosis.

Figure 1: Patient in emergency with mass coming out per rectum.

Figure 2: Strangulated bowel.

Figure 3: Full length of rectosigmoid bowel before resection.

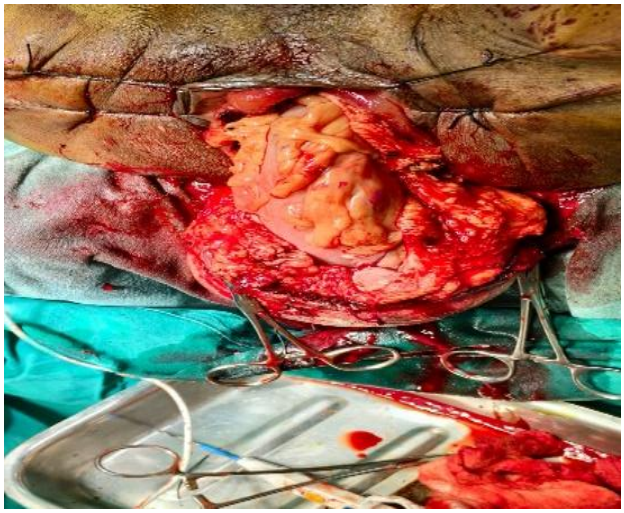

Figure 4: Mesenteric resection.

Figure 5: Coloanal anastomosis.

Figure 6: Post op.

RESULTS

Postoperative recovery was uneventful. The patient was monitored in the surgical ward with regular assessment of abdominal findings, bowel function, urine output, and perineal wound status. Intravenous antibiotics, fluids, and analgesics were administered during the immediate postoperative period. Blood glucose levels were monitored closely because of underlying diabetes mellitus.

Oral feeding was initiated gradually from postoperative day 1 after confirmation of bowel activity and absence of nausea or abdominal distension. Early mobilization was encouraged to reduce thromboembolic risk and improve pulmonary recovery. Laxatives were prescribed to avoid straining, resulting in bowel movement on postoperative day 2.

Serial examination showed no abdominal tenderness, progressive distension, or signs suggestive of anastomotic leak. The perineal wound remained clean and dry. No postoperative complications, including anastomotic leak, pelvic sepsis, urinary retention, wound infection, or early bowel obstruction, were observed.

The patient was discharged on postoperative day 3 in satisfactory condition with dietary advice, stool softeners, and instructions to avoid excessive straining.

At early follow-up, bowel passage remained satisfactory, and no evidence of recurrent prolapse was detected. The anal encirclement remained patent, with preserved ability to evacuate stool without obstructive symptoms. No perineal discomfort or suture-related complication was noted during early postoperative review.

DISCUSSION

Incarcerated complete rectal prolapse is uncommon but represents one of the most urgent presentations in colorectal surgery because delay in intervention may result in irreversible ischemic injury.[2] Progressive venous congestion increases bowel wall edema, which further impairs reduction and predisposes to arterial insufficiency. Once strangulation occurs, bowel necrosis and perforation may rapidly develop, increasing mortality risk.

Initial management may include temporary reduction measures such as sedation, osmotic agents, and manual reduction; however, these methods are often unsuccessful when significant edema or ischemia is already established. In the present case, failure of conservative reduction and associated bowel obstruction mandated immediate surgery.

The choice of operation in emergency prolapse remains individualized. Elective abdominal rectopexy generally offers lower recurrence rates but requires greater physiological reserve and often general anesthesia.[3] In emergency settings, particularly where bowel compromise is suspected, perineal approaches provide several practical advantages: direct visualization of prolapsed bowel, avoidance of laparotomy, lower operative stress, and suitability for regional anesthesia.

The Altemeier procedure remains especially valuable because it allows direct resection of compromised rectosigmoid bowel and immediate restoration of continuity.[4] Unlike Delorme mucosal sleeve resection, which is best suited for shorter prolapse without ischemia, Altemeier resection addresses redundant proximal sigmoid colon and therefore treats the structural component more definitively.

Another important advantage is avoidance of extensive pelvic dissection, reducing autonomic nerve injury and postoperative urinary dysfunction.[5] This is particularly relevant in elderly or comorbid patients.

Published literature reports acceptable anastomotic leak rates following perineal rectosigmoidectomy, generally below 10%, with relatively short hospital stay and favorable postoperative recovery.[6] In the present patient, early oral intake, early bowel function, and short hospitalization reflected these advantages.

Recurrence remains the principal limitation of isolated perineal rectosigmoidectomy, especially when anal sphincter weakness is marked.[6] Intraoperative identification of profound sphincter laxity in this case strongly supported adjunctive outlet reinforcement.

The Thiersch procedure, though historically older, retains selective utility in patients with patulous anus or severe outlet incompetence. By narrowing the anal canal mechanically, it provides additional support against early reprolapse. Modern synthetic materials such as polypropylene offer durability, though care must be taken

to avoid excessive constriction that may lead to obstructed defecation or erosion.

The combined perineal strategy therefore addressed both major pathophysiological components: resection of redundant prolapsing bowel and reinforcement of anal outlet weakness.

This dual correction may be particularly useful in emergency settings where recurrence risk is amplified by severe sphincter incompetence.

The PROSPER trial demonstrated that patient physiology often outweighs procedural category in determining outcomes after prolapse surgery.[7] Although abdominal procedures may show lower recurrence trends, no universal superiority was established, reinforcing individualized operative planning.

Our case adds practical evidence that combined Altemeier resection with Thiersch reinforcement can be safely performed in emergency incarcerated prolapse even in medically compromised patients. The rapid recovery observed supports its value as an effective emergency strategy where redundant bowel and marked anal outlet weakness coexist.

CONCLUSION

In conclusion, emergency perineal rectosigmoidectomy combined with anal encirclement offers a rational and effective treatment option for incarcerated complete rectal prolapse complicated by bowel obstruction and sphincter laxity. This combined approach may broaden emergency surgical options and reduce early recurrence in carefully selected patients.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Madiba TE, Baig MK, Wexner SD. Surgical management of rectal prolapse. Arch Surg. 2005;140(1):63-73.
2. Bordeianou L, Paquette I, Johnson E, Holubar SD, Gaertner W, Feingold DL, et al. Clinical practice guidelines for the treatment of rectal prolapse. Dis Colon Rectum. 2017;60(11):1121-31.
3. Varma MG, Rogers SJ, Schrock TR. Management of rectal prolapse in adults. Am J Surg. 1998;176(2):122-6.
4. Altemeier WA, Culbertson WR, Schowengerdt C, Hunt J. Nineteen years' experience with the one-stage perineal repair of rectal prolapse. Ann Surg. 1971;173(6):993-1006.
5. Tou S, Brown SR, Malik AI, Nelson RL. Surgery for complete rectal prolapse in adults. Cochrane Database Syst Rev. 2015;(11):CD001758.
6. Glasgow SC, Birnbaum EH, Kodner IJ, Fleshman JW, Dietz DW, Mutch MG, et al. Recurrence and quality of life following perineal proctosigmoidectomy for rectal prolapse. Dis Colon Rectum. 2005;48(7):1446-52.
7. Senapati A, Gray RG, Middleton LJ, Harding J, Hills RK, Armitage NC, et al. PROSPER: a randomized comparison of surgical treatments for rectal prolapse. Lancet. 2013;381(9860):88-96.

Cite this article as: Rakshit K, Mondal I, Tripathi P. Emergency management of incarcerated rectal prolapse: combined Altemeier and Thiersch procedures in a surgical emergency. Int Surg J 2026;13:1257-61.