

A Modified Thiersch Operation for Complete Rectal Prolapse Using a Teflon Prosthesis

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SUCCESSFUL treatment of complete rectal prolapse continues to be a difficult problem. None of the various perineal repairs or amputative and abdominal procedures have been entirely satisfactory. Because of the high rate of recurrence after extensive operations, a number of reports have appeared which favor the simpler and usually effective Thiersch operation, when it can be employed.

Lenormant³ described the original Thiersch operation, employing a silver wire about the anal sphincter, which was widely used in the French and German clinics during the early decades of this century. In 1937, Gabriel² rekindled interest in this simple, but useful, operation and stressed its value in certain situations. Burke and Jackman,¹ and Scarborough,⁴ have since emphasized its usefulness. Very recently, Schwartz and Marin⁵ have recommended the use of a polyethylene cord the ends of which are welded after its insertion about the sphincter. They found the plastic material to be much superior to wire.

In place of a silver wire, we suggest employing an encircling crimped Teflon tube to re-inforce the anal sphincters and to close the gaping anal outlet (Fig. 1). This operation is indicated in the elderly patient who is often uncooperative, in poor-risk patients, and in patients with a severed or atonic sphincter. If the sphincter cannot be rehabilitated after an amputation or resection, the Thiersch operation can be

used as an ancillary procedure to correct a markedly relaxed anal canal and to aid in preventing recurrence. This procedure has been favored by others.^{1, 5}

The most common complications associated with use of the silver wire are premature breakage of the silver wire or ulceration through the anal or perianal skin. These complications do not occur when crimped Teflon tubing is used. Teflon is practically inert in the body and, unlike Nylon, it does not lose its tensile strength when exposed to tissue fluids. In addition, Teflon used in this operation is of such caliber that it does not cut through the skin like thin gauge wire. The patient finds the plastic tubing more comfortable, with more *give* than the inelastic wire.

An ideal material should possess reasonable elasticity in addition to providing adequate support. In a search for such material a number of synthetic rubber-like preparations* were implanted by us in the abdominal wall of dogs to determine the reaction of the tissues and the effects of exposure to body fluids. None of these were effective. As far as we know, there is no inert material that possesses any true elasticity.

Technic

The bowel is prepared as for colonic surgery, with a low-residue diet, cathartics, and colonic irrigations. Sulfathalidine® is administered, with or without neomycin. Caudal or general anesthesia may be employed and the patient is usually placed in the lithotomy position. The operative area is prepared as for all rectal operations.

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* Supplied through the courtesy of the Lee Rubber Company, Conshohocken, Pennsylvania.

To avoid undue constriction, the obturator of a Martin anoscope is inserted into the anal canal at the beginning of the procedure. The obturator is fixed in position by pulling taut around it an 0 lumen pursestring suture placed through the perianal skin. This establishes a lumen of satisfactory diameter and prevents perianal contamination. Two midline incisions, 2.0 cm. long, are made anterior and posterior to the canal 2.0 or 3.0 cm. from the anal verge. In the female it is preferable for the anterior incision to be on the distal posterior portion of the vaginal wall. This lessens the possibility of infection and decreases discomfort. These incisions are then carried down to the fibromuscular plane and short fascial loops are constructed by blunt dissection (Fig. 2). These loops are similar to those used in the gracilis muscle transplant. They anchor the Teflon deeply in the tissues adjacent to the anal sphincters and prevent it from working its way superficially under the perianal skin as frequently occurs with wire. The anterior and posterior wounds are then connected by subcutaneous tunnels made with a curved hemostat parallel to the sphincter. If the Teflon tube is to be sutured posteriorly, the curved hemostat is re-inserted through the anterior wound, down along the left perianal subcutaneous wound. A 10-inch length of crimped Teflon

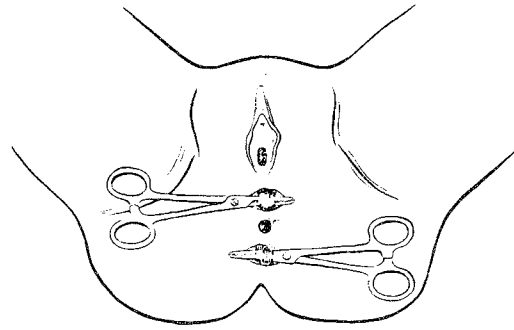


FIG. 2. Constriction of short fascial loops to support the Teflon tubing.

arterial graft, $\frac{3}{8}$ -inch in diameter, previously immersed in 1.0 per cent neomycin solution (neomycin sulfate Gm. 0.25 in 250 cc. of saline), is then grasped in the protruding jaws of the hemostat (Fig. 3). As the latter is withdrawn, the Teflon tube follows it through the subcutaneous tunnel and part of it is brought out through the anterior wound. The hemostat is once again withdrawn and the Teflon follows it under the fascial loop around the canal and out through the posterior incision. The two ends of the Teflon tube protruding through the wound are then drawn snugly about the canal (Fig. 4). The obturator within the canal prevents over-constriction of the lumen and makes unnecessary the insertion of a finger. When

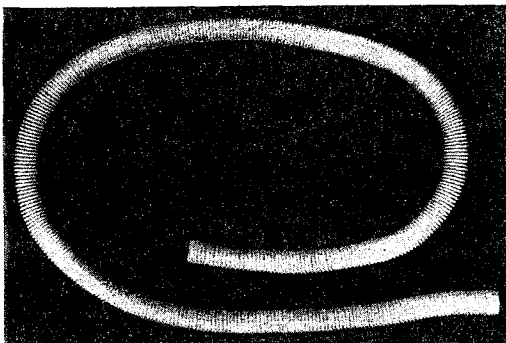


FIG. 1. The crimped Teflon tubing— $\frac{1}{4}$ inch diameter.

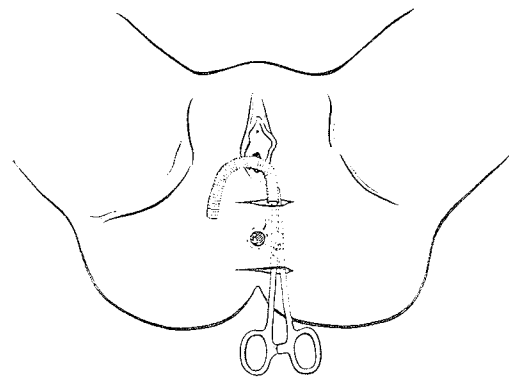


FIG. 3. Tubing is drawn through subcutaneous tunnel.

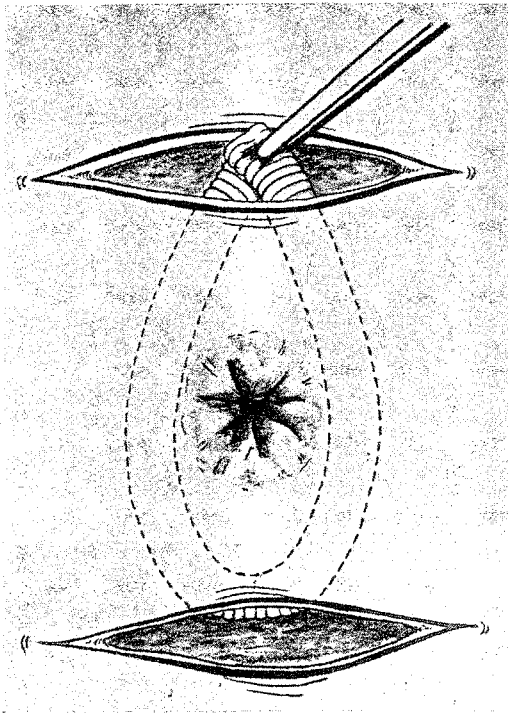


FIG. 4. Ends of Teflon tubing drawn snugly about canal and grasped in clamp ready to be sutured.

the Teflon is under proper tension, the overlapping portions of the tube are immobilized by grasping them in a hemostat and then fixing them with four mattress sutures of 0 linen. These sutures are tied after all have been placed, the immobilizing hemostat removed, and the excessive Teflon ends cut away (Fig. 5). The wounds and subcutaneous tunnels are irrigated with 1.0 per cent neomycin solution, the incisions are loosely approximated with several subcutaneous 3-0 chromic catgut sutures, and the skin is sealed with collodion. The perianal pursestring suture is then removed, the obturator is withdrawn from the anal canal, and a dry dressing is applied.

Postoperative care consists of warm witch hazel perineal compresses, unrestricted diet, and a stool softener, such as Colace,[®] 300 mg. daily. If there is no

spontaneous passage of a stool by the fourth day, the patient is given a suitable laxative. A saline enema may be necessary the following day if the laxative has not been effective. The patient is usually discharged from the hospital within one week following surgery. Care at home is limited to the wound and regulation of bowel function with special attention to avoidance of fecal impactions.

Discussion

In a group of 12 elderly patients with complete prolapse of the rectum, this modified Thiersch operation was employed when more extensive surgery was considered inadvisable or had failed previously. These patients were all women, ranging in age from 68 to 85 years (three were beyond 80). Five of the group had undergone an average of five anal or abdominal procedures, or both, before our operation with a Teflon tube encircling the anal canal. In almost all cases symptomatic relief was provided.

In some instances it had been hoped that even this limited operation might be avoided if the anal sphincter could be rehabilitated by voluntary exercises or galvanic stimulation. Determination of the degree of sphincter competence, and whether or not this method of rehabilitation could be expected, was augmented by direct uni-

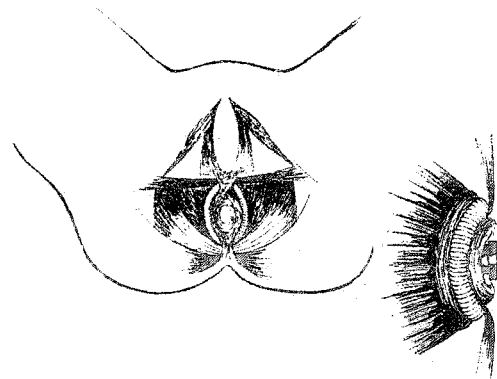


FIG. 5. Tubing lying about sphincter and retained in position by musculo-fascial bridges.

polar electromyographic samplings of the muscle.⁶ When pathologic fibrillation and polyphasic voltages were consistently present, it was concluded that no significant improvement in muscle function could be expected and the insertion of a Teflon prosthesis was advised.

In 11 of the 12 patients very satisfactory symptomatic relief was obtained. With control of the prolapse, these patients were able to sit or walk without discomfort and to resume their usual activities. The twelfth patient developed such persistent discharge from an anal sinus that the Teflon eventually had to be removed. A slight posterior anal sinus occurred in another patient; this was not considered objectionable and she was unwilling to continue without the Teflon. In two patients the canal had been tightened excessively and some ulceration of the posterior wall resulted. These tubes were removed and successfully replaced three to five months later. None of the Teflon implants have broken and none have caused significant infections. These results were in marked contrast to our experience with nylon tapes which had been employed previously.

Summary

Insertion of a crimped Teflon arterial graft around the rectal outlet is described as a modified Thiersch operation for relief of complete rectal prolapse. The procedure is not formidable and is of particular value in elderly poor-risk patients or in certain patients with a badly damaged and totally incompetent anal sphincter. The advantages of the Teflon tube are discussed.

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