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Lateral Subcutaneous Sphincterotomy for Anal Fissure – A New Technique

by M J Notaras FRCS FRCSed
 (University College Hospital, London)

Posterior internal sphincterotomy is probably the most popular surgical technique used in the outpatient treatment of chronic anal fissure. This procedure often leaves a large posterior anal wound which may take up to seven weeks to heal. In some cases it may result in a posterior mid-line gutter or 'key-hole' deformity at the site of the sphincterotomy due to epithelialization of the gap created by separation of the edge of the divided sphincter muscles (Goligher 1961, Hardy 1967). Distressing complaints such as incontinence of flatus and faecal soiling of underclothes have been reported in some patients (Bennett & Goligher 1962, Magee & Thompson 1966).

Faecal soiling may be due to faeces being retained in the gutter deformity. To avoid this the author has devised a technique whereby the internal sphincter is divided under the skin in the lateral position in a manner similar to performing a tenotomy. This leaves the divided internal sphincter bridged by skin and a tiny perianal skin wound on the anal verge.

Technique: The patient is placed in the left lateral position with a sandbag under the left hip. A field block of the inferior haemorrhoidal nerves is performed using lignocaine 1% with adrenaline 1/200,000 and injecting 7 ml into each ischioanal space. A bi-valve speculum (Eisenhammer) is introduced into the anal canal and opened. The lower border of the internal sphincter is then demonstrated by pushing blunt forceps into the intersphincteric groove in an upward direction. This also helps to gauge the thickness of the internal sphincter. A narrow-bladed scalpel such as a cataract knife is then introduced through the perianal skin on the lateral side and pushed subcutaneously upwards between the internal sphincter and the skin lining the anal canal. When the point of the blade is at the dentate line the internal

sphincter is divided by cutting outwards. After the knife has been extracted, a defect can be felt under the skin between the retracted edges of the internal sphincter. If a large sentinel pile is present it is excised with sharp-pointed scissors, leaving a small superficial wound below the fissure.

The wound is covered with a dressing for twenty-four hours and the patient encouraged to open his bowels as soon as it becomes necessary.

Results: As anticipated, the 'key-hole' deformity was eliminated in all 66 patients treated. The relief from pain was immediate and the fissures healed within three weeks. The incidence of faecal soiling was 6%, compared to 30% and 41% following posterior internal sphincterotomy in the studies by Bennett & Goligher (1962) and Magee & Thompson (1966) respectively.

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The Value of Mercury Perchloride and Other Agents in Reducing Tumour Recurrence in Colon Anastomosis

by John E Hale FRCS
 (Surgical Unit, Westminster Hospital, London)

Following restorative resection of colonic carcinoma, local tumour recurrence in or near the suture line has been reported in approximately 10% of cases (Goligher 1951). Circumstantial evidence supports the concept that free malignant cells are implanted in the damaged mucosa of the anastomosis during operation. Since the introduction by Naunton Morgan and Lloyd-Davies of their method of exclusion and irrigation of the distal rectal stump with a 1/500 solution of mercury perchloride, anastomotic recurrence has been reduced to about 2% (Keynes 1961). Various factors including simple mechanical irrigation may account for these improved results and no experimental work has been performed to show whether these are directly due to mercury perchloride. This is nephrotoxic, and it is possible that other agents, such as a 1% cetrimide solution, might be equally effective and less toxic.

In experiments on the anaesthetized Wistar rat a 1 ml suspension of 100,000 viable Walker 256

tumour cells was injected into an isolated segment of large bowel. The incidence of local recurrence in anastomoses irrigated for one minute with either a 1/500 solution of mercury perchloride or normal saline in control animals, was studied. In addition, an attempt was made to assess nephrotoxicity of the mercury solution. This was done by testing for proteinuria, renal histology and estimations of the mean renal cell excretion rate. Using special urine-staining techniques, it is possible to identify renal tubular cells. These have a characteristic appearance, and an increased excretion rate has been claimed to be a sensitive index of renal tubular damage (Harvald & Clausen 1960).

Results

The experiment was performed on 78 animals (41 perchloride, 37 control), and of these 33 died (22 perchloride, 11 control) in less than one week, and were therefore excluded from further study. Survivors either died or were killed at weekly intervals for post-mortem study. Nineteen of the 26 controls and one of the 19 treated animals had macroscopic recurrence at the anastomosis. The majority of control animals died from intestinal obstruction due to recurrent tumour in the suture line.

Mercury compounds are extremely nephrotoxic, and although estimations of proteinuria and renal histology were inconclusive, the greatly increased mean renal cell excretion rate of rats in which the mercury perchloride solution was used indicated some degree of tubular damage. The excretion rate of renal tubular cells in normal and control animals was approximately 5,000/ml per hour. There was a hundredfold increased excretion rate in animals treated with mercury perchloride.

The value of a 1% solution of cetrimide was similarly investigated in 32 animals, 22 of which survived for one week or more; in no case was there a suture line recurrence.

Conclusions

These experiments support the clinical finding that a mercury perchloride solution reduces anastomotic recurrence. This effect would seem to be due to more than mechanical irrigation. Moderate renal tubular damage was indicated in the mercury-treated animals by the raised urinary cell excretion rate of renal tubular cells. A 1% cetrimide solution was equally effective in reducing anastomotic recurrence, and preliminary studies do not show that cetrimide is nephrotoxic.

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Irrigation via Self-retaining Rectal Tube in Prevention of Suture-line Recurrent Carcinoma

by Anthony P Clery MS FRCSI

(*Richmond (St Laurence's) Hospital, Dublin*)

After anterior resection for carcinoma of the upper rectum or sigmoid colon, viable tumour cells implant at the suture-line and result in a recurrence in more than 10% of cases (Herter & Slanetz 1968). This complication can be prevented by using the irrigation technique described by Morgan (1955). This entails operating with the patient in the synchronous combined position. When the tumour has been mobilized the bowel is cross-clamped below the mass and an assistant inserts a proctoscope through the anus and washes out the isolated rectal lumen with a 1/500 solution of perchloride of mercury.

In spite of its proven efficacy the majority of surgeons do not use this adjuvant manoeuvre. We are also aware that, even amongst those who do irrigate, many have settled for technical modifications which may compromise efficiency. One modification entails swabbing out the opened rectal stump from within the pelvis: this may result in contamination of the surgical field with desquamated cells. Others have attempted irrigation through a rectal or Foley's catheter inserted through the anus prior to commencing the operation; with this the irrigating fluid leaks through the anus and makes the procedure messy and probably unreliable.

In considering why some should need to compromise we concluded that many surgeons find the technical help necessary to pass the proctoscope and wash out the rectal stump not always available. Alternatively, they do not like the synchronous combined position. Accordingly, we developed a method which obviates these difficulties without compromising the principles of the standard method.

Method: A special rectal tube was designed. Its lumen is 9 mm in diameter and two individually inflatable balloons are incorporated in tandem at one end. The details of construction have been published elsewhere (Clery 1967).

After the patient has been anaesthetized the tube is inserted through the anus so that the distal balloon lies in the rectal ampulla. This is now distended with about 60 ml of air and the tube withdrawn until the balloon is arrested at the anorectal ring. The second balloon, which is now just outside the anal verge, is inflated with the same volume. Thus, the two balloons fix the tube in place and effectively seal the anus. An irrigating funnel is connected with a suitable length of rubber tubing.