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DIRECT END-TO-END OR OVERLAPPING DELAYED ANAL SPHINCTER REPAIR FOR ANAL INCONTINENCE: LONG-TERM RESULTS OF A PROSPECTIVE RANDOMISED STUDY.

Hypothesis / aims of study

Anal incontinence is a distressing problem with a reported prevalence in the general population of 2.2% and up to 6.6% at 10 months postpartum (1). The widespread usage of anal endosonography has demonstrated anterior defects of the external anal sphincter as a common cause of anal incontinence. The overlapping external anal sphincter repair procedure has been considered the “gold standard” procedure for anal incontinence secondary to external anal sphincter defects. However, a recent review indicated that the overlapping anal sphincter repair following obstetric trauma was also associated with residual symptoms and new evacuation disorders (2). Alternatives to an overlapping procedure include a direct end-to-end anal sphincter repair procedure. This approach is simpler to perform than an overlapping sphincter repair, requiring less tissue dissection.

The aim of this study was to compare the results of two different surgical techniques, namely, direct end-to-end versus overlapping in delayed repair of a localised anterior external anal sphincter defect in women with anal incontinence.

Study design, materials and methods

Inclusion criteria included symptomatic anal incontinence, isolated anterior external anal sphincter defect, normal pudendal nerve terminal motor latency. During the 5-year period from 1998 to 2001, 36 women were assessed as potential subjects for the study. Thirteen were excluded from the study because of prolonged pudendal nerve terminal motor latency (n=9) or refusal to participate (n=4). The remaining 23 patients were randomised to either a direct end-to-end repair (n=12) or an overlapping sphincter repair (n=11). The median age of the women treated by end-to-end and by overlapping repair was 47 years (range 32-71) and 45 years (range 31-68) respectively. All women completed consent documents for voluntary participation in the study that had been previously approved by the institution review board

Preoperative assessment included a detailed history and examination, endoanal ultrasonography, anorectal manometry and neurophysiological evaluation including pudendal nerve terminal motor latency (PNTML). Anal incontinence was assessed by the Cleveland Clinic continence score (0-20; 0 = perfect continence, 20 = complete incontinence). The median pre-operative continence score (Cleveland Clinic) was 17 in both the direct repair group (range 8-20) and the overlap group (range 7-20).

Technique

All women received full bowel preparation preoperatively and intraoperative prophylactic antibiotic therapy. Surgery was performed with patients in the prone position. A curvilinear perineal incision was made between the introitus and anus. Dissection was continued to adequately mobilize the external anal sphincter cephalad to the anorectal ring. Care was taken to preserve branches of the pudendal nerves by not extending the dissection posterolaterally. Direct or overlapping repair was performed using 2/0 PDS (Ethicon, Inc., Somerville NJ) sutures. With the overlapping repair, greater mobilization of the external anal sphincter was often required to avoid excessive tension on the repair. The perineal skin was closed with interrupted 3/0 Vicryl (Ethicon) sutures.

The women were allowed to have a normal diet the following day. Neither stool softeners nor constipating agents were routinely used.

Results

Both groups were comparable with regard to age, past history of sphincter repair (n=2) and posterior vaginal repair. There was no major intra- or post-operative morbidity. The wound healing rate was identical for both groups.

The median follow-up period was 26 months (range 18-38). At review the median continence score in both groups was 4 compared to a median pre-operative continence score of 17 in both groups. In both surgical groups, there was similar improvement in maximum squeeze pressure and in the functional anal canal length following surgery, but the median resting

pressure remained relatively unchanged. In the group treated by anal sphincter overlap, 1 patient developed a unilaterally prolonged PNTML that persistent 26 months after surgery.

Interpretation of results

In this study, the outcomes in improved continence in the direct end-to-end external anal sphincter repair compared to the overlapping repair were similar at a median of 26-months follow up. The small number of women recruited over a 5-year period underscores the need to conduct future similar studies in multiple centres.

Concluding message

Both the direct end-to-end and overlapping delayed anal sphincter repair procedures for anal incontinence resulted in similar marked improvement in continence scores. The overlapping repair often required more tissue dissection and may be associated with more difficulties in fecal evacuation when compared to the direct end-to-end repair procedure.

Reference

1. Anal endosonography and its role in assessing the incontinent patient. Best Practice & Research Clinical Obstet & Gynaecol 2004; 18: 157-73
2. Long-term results of overlapping anterior anal sphincter repair for obstetric trauma. Lancet 2000; 355: 260-5.