MINI REVIEW

The emerging role of internal rectal prolapse in the aetiology of faecal incontinence

Faut-il opérer le prolapsus rectal interne en cas d’incontinence anale?

R. Collinson, C. Harmston, C. Cunningham, I. Lindsey*

Pelvic Floor Service, Dept of Colorectal Surgery, Churchill Hospital, Oxford, UK

Introduction

Although internal or occult rectal prolapse (IRP) manifests primarily as OD, many patients admit to FI on closer questioning. Through more liberal use of defaecating proctography, many cases of FI are attributable to IRP, both in those with mixed FI and OD, and those presenting with pure FI. This article outlines the emerging role of IRP in patients with FI.

The traditional approach to faecal incontinence

The surgical management of FI has traditionally been centered on the role of the anal sphincters, as sphincter repair was usually the only surgical remedy available. This was made more feasible with the advent of anal ultrasound which allowed a better characterisation of anterior obstetric sphincter defects amenable to repair. Prior to this sphincter assessment relied on clinical assessment with or without needle electromyographic mapping, and ultrasound therefore represented a major diagnostic advance.

Despite this aid to patient selection, the long term results of sphincter repair have proved to be at best modest [1—4]. At 5-year follow-up, about 50% of patients maintain a benefit, and very few patients are perfectly continent. This suggests either a longer-term failure of the procedure, or the presence or development of other aetiological factors, or both. In the meantime, sacral neuromodulation has emerged as a key new technique in the management of FI. Its exact mode of action is unclear, but it is likely that a number of mechanisms are involved, predominantly neural in basis. This also points to the multifactorial nature of FI and suggests that a previously sphincter-centric approach to FI was over simplistic. In fact, two recent series of sacral neuromodulation from experienced centers have reported success independent of the presence of an anterior external sphincter defect [5].

The traditional view of internal rectal prolapse

Many believe IRP to be a normal variant, with a high incidence in asymptomatic individuals, not a pathological entity to be addressed surgically. The normal volunteer study of Shorvan et al. is widely quoted as a basis for this hypothesis. In this study of 47 subjects, all of whom denied gastroin-
testinal symptoms, underwent proctography. All 22 female volunteers were nulliparous. IRP, defined as a circumferential infolding of the rectum of > 3 mm, was demonstrated in 50% of men and women. The majority of these were rectoanal intussusceptions. Seventeen of the women had rectoceles, 16 less than 1 cm [6].

Two other large proctographic series of symptomatic patients demonstrate a different pattern of IRP. Mellgren et al., in an analysis of 2816 proctograms (OD 67% and FI 21%), found an incidence of IRP of 31%, of which 96% extended down to the anal canal [7]. Agachan et al., in a series of 744 patients undergoing proctography (OD 60% and FI 17%), recognized only rectoanal intussusceptions. Using this definition, 43% had an IRP, 30% associated with a rectocele or enterocele and 13% an isolated IRP [8]. These large series therefore suggest a higher grade of IRP in patients with symptoms.

The poor results of traditional posterior rectopexy for IRP have also reinforced the concept of IRP as a normal variant [9,10]. Both a Cochrane review and randomized, controlled data have shown that posterior mobilization in ERP leads to an autonomic rectal denervation and a hindgut neuropathy, with worse or new-onset OD in about 50% of patients [11]. Perhaps unsurprisingly posterior rectopexy, producing a similar lesion and poor results in IRP [12], often worsening the OD that was the very indication for surgery, became discredited. These surgical results, together with the concerns raised simultaneously by proctographic studies, lead to an abandonment of a surgical solution for symptomatic IRP. The condition became medicalised and management almost exclusively conservative, usually biofeedback/pelvic floor retraining.

Rectopexy for faecal incontinence

Despite ambivalence about the significance of IRP, several published series have already demonstrated improvement in FI after rectopexy. Lazorthes et al., in a series of 51 patients referred for proctography with idiopathic FI, found 14 (27%) patients with IRP, all female. These patients were treated with either posterior or anterior-posterior (Orr-Logue) rectopexy. Significant improvement in FI was seen with six patients achieving full continence at six months follow up. There was no significant change in any anorectal physiological parameters (mean resting pressure, maximum squeeze pressure or maximum tolerated volume). Six patients underwent proctography postoperatively, all showing anatomic correction of the IRP. There was no deterioration of constipation in any patient and three patients reported improvement [13].

Similar findings were reported by Schultz et al. in 42 patients with both ERP and IRP with FI who were treated with posterior rectopexy without lateral ligament division. Again significant improvement in FI in the 12 patients with IRP was noted. At a median follow up of 5.4 years, the benefit in FI was maintained. The overall incidence of constipation was unchanged postoperatively, although some patients improved and some deteriorated, and the authors urged caution in the use of this technique in constipated patients [14].

Although these studies report on the use of the discredited posterior rectopexy, the improvement in FI supports the role of IRP in the multifactorial aetiology of FI.

A reappraisal of the significance of internal rectal prolapse

More recently, there has been a radiological reevaluation of IRP demonstrated in asymptomatic normal volunteers. Dvorkin et al. demonstrated that IRP is morphologically more advanced in symptomatic compared to asymptomatic individuals, with a significantly more full-thickness and deeper rather than more shallow and mucosal IRP [15]. These findings are supported by Pomerri et al. who showed that the rectal folding thickness and the ratio between intussusception diameter and the intussuscptum lumen diameter were significantly greater in the symptomatic rather than asymptomatic volunteers [16].

Anterior rectopexy: a new nerve-sparing approach

In 1999, Silvis et al. described rectovaginopexy in 27 patients with both FI and OD in the presence of anatomic abnormalities at defaecography (rectocele, IRP, enterocele). The approach was anterior, the operative aim to avoid damaging rectal branches of the pelvic autonomic hypogastric plexus by avoiding dorsolateral rectal mobilization [17]. The functional results were excellent.

This anterior or ventral nerve-sparing approach has been popularized by D’Hoore et al. [18], mainly for ERP. Following similar good results in ERP, our results using this technique for high-grade IRP in a carefully selected and audited cohort of 30 patients were encouragingly similar to those achieved with ERP. Although the primary diagnosis and indication for surgery in this cohort was OD, 24 patients (80%) complained of FI. At median of 4 months after laparoscopic anterior rectopexy, 22 patients (92%) had a significant improvement in FI [19]. Similar results have been produced by the Bristol group in their series of 80 patients undergoing laparoscopic ventral rectopexy, posterior colporrhaphy and vaginal sacrocolpopexy (ERP 55%, IRP 45%), with improvement in 39 of 43 patients (91%) with FI, although the outcomes in the different groups is not quoted [20].

The role of proctography in patients with IRP

Not infrequently, patients undergoing standard workup for often quite severe FI demonstrate normal or near-normal sphincter pressures on anorectal manometry, with intact sphincters on anal ultrasound. Previously these patients were labeled as idiopathic FI. We strongly recommend selective defaecating proctography in these patients, and a case can be made for routine proctography as part of standard FI workup.

Our data in Oxford showed that about two-thirds of patients undergoing selective proctography for otherwise unexplained FI had high grade IRP [21]. A recently published abstract by Dench et al. has also shown that in a retrospective analysis of routine proctography in FI, proctographic anatomical abnormalities were demonstrated in 70% [22].
The mechanism of FI in IRP

The exact mechanism of FI in IRP is unclear. One possibility is that an IRP that enters the anal canal mechanically begins to stretch the internal anal sphincter. It has been demonstrated that internal sphincter pressures are diminished in ERP, and improve if the prolapse is corrected. Our own data (unpublished) shows a progressive and significant decrease in internal anal sphincter pressures with increasing grade of IRP. FI through this mechanism would be expected to be passive-type FI.

An alternative possibility is that the prolapse itself, in descending to the anorectal junction, causes inappropriate firing of the rectoanal inhibitory reflex, leading to temporary reversal of the usual pressure gradient between the rectum and anus. This would be expected to give rise to urge FI. This mechanism has been shown to be a contributing factor in ERP [23], with rectopexy leading to a recovery of this abnormal rectoanal inhibitory reflex response, and may well be a contributing factor to FI associated with IRP.

A third possible mechanism is simple postdefaecatory leakage from incomplete rectal emptying. The nature of FI in IRP is currently the focus of ongoing research. In practice, in our experience, the pattern of FI admitted to by patients with IRP is heterogeneous, patients complaining of any of these three types of FI, and often a combination of two or even all three types. This suggests that the mechanism of FI in IRP is itself multifactorial.

Conclusion

FI is a multifactorial problem, unlikely to be solved by therapies solely directed at external anal sphincter defects. Our and others results in anterior rectopexy strongly suggest that IRP is not a normal variant but represents a significant and others results in anterior rectopexy strongly suggest that IRP is heterogeneous, patients complaining of any of these three types of FI, and often a combination of two or even all three types. This suggests that the mechanism of FI in IRP is itself multifactorial.

Conflict of interest statement

No conflict of interest.

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