

## Other options in the treatment of fecal incontinence



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### ABSTRACT

Fecal incontinence (FI) is a debilitating condition. Luckily, there are several new treatment options recently introduced or being introduced in the near future. Conservative or “non-operative” management of FI is the first step in management of a patient suffering from FI. Retrograde colonic irrigation is one alternative and is especially valuable in patients suffering from concomitant constipation. Anal plugs are disposable devices that control continence by blocking the passage of stool and may be helpful in selected groups of patients. Sacral nerve stimulation is widely used in the treatment of patients with FI and surgical repair of internal and external proctodia in patients with fecal incontinence has recently gained more interest. At the same time, dynamic graciloplasty and artificial bowel sphincter are rarely used any longer in the management of these patients. There are several treatments that are yet not FDA approved for treatment of patients with FI. The Magnetic anal reinforcement system is a novel device designed to augment the native anal sphincter. This treatment option has demonstrated good results in limited sized series of patients. The post-anal sling procedure, Topas™, has a concept similar to the TVT procedure for urinary stress incontinence. The sling is implanted dorsal to the anal canal with the aim to augment the puborectalis muscle and to restore a normal anorectal angle and a better anal sphincter function. An FDA regulated trial is presently conducted in the US. Regenerative medicine, stem cell therapy, may be the ultimate option to treat FI by regenerating impaired anal muscle. There are currently no validated techniques using this approach but there is an active research ongoing.

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### Introduction

Fecal incontinence (FI) probably more appropriately named as accidental bowel leakage, is nowadays a condition recognized as frequent and severely debilitating for those who are affected.<sup>1</sup> Over the last 20 years along with the increased request in the patient population to live longer and in better condition a greater awareness of FI impact on quality of life has emerged leading to higher interest from the medical community linked with steady progress in diagnostic methods. Meanwhile, a series of novel technologies have appeared to manage FI. Considered in the past as a hopeless consequence of aging FI is now a treatable disorder even if still challenging for the practitioners involved in the field.<sup>2</sup>

Management of FI is a field of very active research both experimentally and clinically. The purpose of this review is to review those of the recent advances that have appeared in parallel to the now recognized and for some approved nerve stimulation/modulation procedures presented in another chapter of this monograph (Table 1).

In majority, these new options have some common characteristics: they frequently come from innovations and experiments from sister specialties, urology for instance; their development come along with significant efforts from companies that invest heavily to put them on the market; they are not yet universally approved and have to be regarded as experimental in many ways as evidence is still missing in terms of feasibility, cost-effectiveness, durability, and reproducibility.

### Innovations in conservative management of fecal incontinence

Conservative or “non-operative” management of FI is the first step in management of a patient suffering from FI.<sup>3</sup> It is worth a trial before any more aggressive approaches, namely surgical procedures is suggested. Some innovations have appeared in this field.

### Retrograde colonic irrigation

Retrograde colonic irrigation is one amongst the several recommendations that can be given when first counseling a patient

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**Table 1**  
Innovative procedures for the treatment of fecal incontinence.

Conservative management	New reinforcement devices	Cell therapy	Stoma
Renew Insert™	Magnetic anal device (Fenix™)		Antegrade colonic enemas through a percolonoscopic percutaneous cecostomy
Retrograde colonic irrigation (Peristeen™)	Post anal sling (TransObturator PostAnal System–TOPAS™)		

suffering from FI especially when there is an associated constipation. It has the goal to empty the bowel and then avoid leaks for the time the bowel refill. To be successful, retrograde irrigation has to be complete and made on a regular schedule, every other day at the same hour for instance. For long, this option have not been successful due to lack of effective devices. Dedicated systems like the Peristeen® Anal Irrigation System allow today to get effective and easy-to-do trans-anal irrigation with declared success in children and neurologic incontinence.<sup>4</sup> Instillation of tap water is effectively made into the colon through a rectal catheter, thanks to an inflatable balloon avoiding immediate leaks of the enema through a hypotonic anal canal. Inserted into the rectum it promotes a full evacuation of the contents of the colon in about 30–45 min in total. Initially tested in the management of spinal cord injury patients indications have expanded to other FI populations. Careful patient selection along with supervised training and sustained follow-up optimize outcomes with retrograde colonic irrigation.

### Containment products—Anal plugs

Anal plugs are disposable devices that control continence by blocking the passage of stool as a result of self-expansion when soaked with mucosal secretion.<sup>5</sup> Although they are not tolerated by all patients, they may be helpful in preventing FI in selected groups, such as patients with neurological impairment (spina bifida) who have less anal sensation. Performance of different types of anal plugs for containment of fecal incontinence has been recently reassessed and not much progress in the use of these devices (Peristeen® anal plug) is reported.<sup>6</sup> Meanwhile a new proposal has been made in the area with a different design and material of plug: the Renew Insert™ (Renew Medical). Assessed in an International Continence Society (ICS) position statement based on a summary evidence synthesis by ICS member Julia Herbert (Consultant Physiotherapist, UK) the Renew Insert™ is a silicone anal insert, designed for self-insertion to seal the rectum from the inside to help prevent FI. The insert is provided with an applicator that assists the user to correctly position the device in the anal canal. Publication of a multicenter pivotal study of the Renew Insert™ in patients with moderate-to-severe bowel incontinence is pending with encouraging results in terms of safety, tolerability, reduction of incontinence episodes, and overall satisfaction among the majority of Insert™ users.<sup>7</sup>

### Innovations in internal rectal prolapse-related fecal incontinence

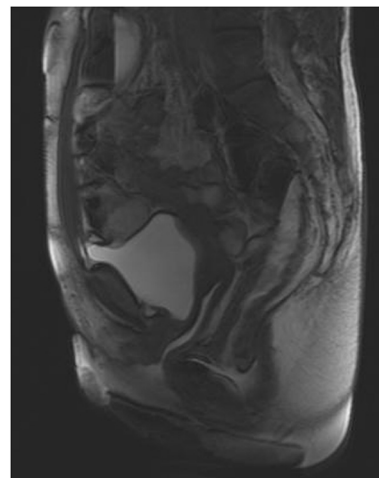
The recommendation of a rectopexy in the management of FI is recent, not so much when occurring as a stigmata of overt rectal prolapse but when fecal leakage is associated to a difficult-to-identify internal rectal prolapse (Fig. 1). Although the topic is still a matter of debate, several studies suggest in the last few years

that a rectopexy restoring a normal anatomy in the pelvis improves or corrects FI symptoms in patients in whom a high-grade internal prolapse is observed on dynamic defecography imaging, a must-do examination in the current work-up of FI (Fig. 1).<sup>8</sup> A significant improvement of fecal continence has been reported in 50–100% of patients after prolapse repair.<sup>9</sup> These results have been achieved following the currently most performed procedure in Europe, the laparoscopic ventral mesh rectopexy (LVMR) that has supplanted the other techniques (see Chapter 8 of this monograph).

### Innovations in anal sphincter replacement and reinforcement

*Dynamic graciloplasty and artificial bowel sphincter: where are we with these treatments?*

In the 1990s, two main innovative procedures of anal sphincter replacement have been steadily developed: the dynamic or electro-stimulated graciloplasty and the artificial bowel sphincter (ABS). They were sophisticated techniques derived from the Thiersch wire implantation or Pickrell gracilis muscle transposition previously designed one century and 50 years ago. Dynamic graciloplasty is no more available in the US and with virtually no published reports over the last 5 years, dynamic graciloplasty appears to have been replaced by other less aggressive options. The silicone-made, pressure-regulated ABS is still on the market in the US and its role in treating severe end-stage FI has been confirmed in reports from different groups.<sup>10</sup> The ABS provides good restoration of continence for solid and liquid stool in patients who retain the device, with all studies reporting good restoration of continence and a positive impact on quality of life. However, studies have confirmed the high risk of failure after implantation from both local infection/erosion and mechanical failure. The primary concern with ABS implantation is infection, with rates ranging from 20% to 45%. Mechanical failure is a well-recognized complication after ABS implantation. The most common cause is a micro-perforation at the folds of the cuff membrane, which leads to a loss of fluid and pressurization of the system. Cuff perforation that reflects intrinsic “wear and tear” of the device components over time contributes to a number of revision procedures, especially detrimental when patients have a satisfactory functional ABS results. Revision rate with the ABS is directly proportional to the length of follow-up.<sup>11</sup>



**Fig. 1.** High-grade internal rectal prolapse on MRI defecography identified in a patient suffering from severe fecal incontinence.

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