GLEM/LOK report on proctology practice in Belgium. Results, comments and recommendations

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Abstract

The article summarizes the response of 88 Belgian gastroenterologists to a questionnaire on proctology practice, established by the common evaluation groups (GLEM/LOK) of medical practice.

The results of the inquiry concerning hemorrhoids, anal fissure, abscess and fistula, and faecal incontinence are discussed separately. Each chapter is completed by specific therapeutic and/or diagnostic recommendations. These are based on the official statements of the American Gastroenterological Association and on our own clinical practice. There are still no official guidelines on proctology in Belgium and neighbouring countries.

The diagnostic and therapeutic quality of the approach of our proctologic patients should improve by appropriate proctologic education and training in selected centres. (Acta gastroenterol. belg., **2006**, 69, **25-30**).

About ten years ago, official Belgian rules for accreditation for physicians included the creation of local groups of physicians in every speciality with the aim of common evaluation of medical practice (GLEM in French : groupes locaux d'évaluation médicale – LOK in Flemish : locale kwaliteitsgroepen – peer review).

In 2000, Belgian gastroenterologists decided to propose to the GLEM/LOK groups two questionnaires annually about commonly decided topics. In practice, the questionnaire is sent to each member of each group. Individual answers are returned to the leader of the group, who summarizes the opinions of the participating members. In a meeting of the group, these results are confronted with the advice of an expert on the topic. This final discussion should then allow a summary of the opinions of Belgian gastroenterologists.

A questionnaire on proctology was established by 4 chosen experts and then sent to each group in 2002. The results were summarized during the Belgian Week of Gastroenterology in Brugge, 2004.

The summary of the answers was presented (JCD) and then discussed by an expert (MVO).

The questionnaire included 36 questions on the following topics : hemorrhoids – anal fissure – anal abscess and fistula – pruritus – faecal incontinence – pain – straining.

The topics pruritus and pain were not discussed. The answers are summarised in tables 1-2-3-4-6-7-8-10. The different topics are discussed in separate chapters, each followed by some recommendations. These are based on the statements of the American Gastroenterological Association (1-2-3) and also on our own clinical practice. As far as we know, there are still no official guidelines on proctology in Belgium, neither in France, Germany, the Netherlands, or UK.

88 answers from the questionnaires were obtained from the GLEMs. In the concerned tables, "sometimes" means < 30% - "often" 30-80% and "always" > 80%.

The estimated incidence of various proctologic diseases is mentioned in table 1, with the highest frequency for hemorrhoids (seen by each GI physician at least once a week) and the lowest for abscess or incontinence, seen at most once a month.

1. Hemorrhoids-treatment

Tables 2 to 4 concern hemorrhoids (the most common disease) and indicate – in brief – that drugs are used in half of the patients, rubber banding is the most common instrumental treatment with bleeding and prolapse as main indications, and surgery is used mainly for grade 3-4 hemorrhoids or after failure of instrumental treatments.

1.1. *Medical treatment*

Topical therapies : reduce symptoms, by exerting a local anaesthetic or anti- inflammatory effect. They have less effect on bleeding. Although they are frequently used and can exert a temporary symptomatic relief, their efficacy has not been formally approved by controlled clinical trials. Most preparations contain different products and are available over-the-counter. One double-blind placebo controlled trial showed a significant reduction in hemorrhoidal symptoms whit 5-ASA suppositories (4). Topical therapy has few side effects, but long term use of topical steroids can provoke chronic perianal dermatitis and skin atrophy. Local anaesthetic creams can induce hypersensitivity and pruritus ani.

Oral therapies : in our GLEM/LOK report systemic treatment was used as frequently as topical therapy, in 55% of the patients with hemorrhoids (Table 2).

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Table 1. — **Incidence patient visits**

Hemorrhoids	1-5	per week	52%
Fissure	1-5	per month	74%
Pruritus	1-5	per month	64%
Pain	1-5	per month	59%
Abscess	< 1	per month	80%
Incontinence	< 1	per month	85%

Table 2. — **Hemorrhoids – treatment**

Drugs	local : often 57%		systemic : often 55%	
Instrumental treatment indications	blood loss	90%	pain	24%
	prolapse	88%	pruritus	18%

Several trials assessed the usefulness of oral micronized purified flavonoid fraction in symptomatic improvement of hemorrhoids. The results where inconsistent. Ho *et al.* (5) reported that the combination of flavonoids and fibres led to faster relief of hemorrhoidal bleeding than either fibres and rubber ligation or fibres alone. Fibres : There was no question concerning the use of fibres in the treatment of hemorrhoids. One double blind placebo controlled trial showed that psyllium reduced hemorrhoidal bleeding and painful defecation (6). Other studies showed less impressive results.

Recommendations

– topical and oral therapy can be started in acute exacerbations of hemorrhoids and should soon be completed by the more performing instrumental techniques (cfr. below)
– fibres are always recommended in the treatment of hemorrhoids as they soften the stools and help to avoid straining, prolapse and bleeding of hemorrhoids.

1.2. *Instrumental therapies*

These treatments should be adapted to the specific degrees of the internal hemorrhoids.

We distinguish :

grade 1 : not prolapsing at straining
grade 2 : prolapsing only at straining but spontaneously reduced
grade 3 : spontaneously prolapsing (also without straining), manually reducible spontaneously prolapsing, not reducible

The purpose of the instrumental techniques is to achieve a non-surgical fixation of the hemorrhoidal cushions to the underlying submucosal layers. They function as ablative by thrombosis, sclerosis or necrosis of the internal hemorrhoids.

1.2.1. Sclerotherapy

In our GLEM/LOK groups sclerotherapy was sometimes applied in 39% and often in only 16% of the cases (Table 3).

Table 3. — **Hemorrhoids – instrumental treatment**

Methods	sometimes	often
Sclerosing injections	39%	16%
Photocoagulations	24%	7%
Rubber banding	24%	75%
Ultroid	0%	2%
Prophylaxy antibiotics	never : 87%	

This very old treatment consists of submucosal injections of 5% phenol in oil, 5% quinine and urea, hypertonic (23.4%) salt solutions or polidocanol 0.5, 1 or 2% at the proximal base of the hemorrhoids.

The treatment is minimally invasive and easy to perform. It is still popular in Belgium and France, but more or less abandoned in UK and USA. The success rate varies in the literature, going up to a maximum of 89% improvement (7). Pain, urinary retention, infections and abscesses have been reported post treatment. Recurrences were at least 30%, 4 years after an initially successful treatment (8).

Recommendations

– sclerotherapy can be successfully used in first or second degree hemorrhoids, especially when bleeding
– the treatment should always be applied above the dentate line to avoid pain and other complications. Ventral injections can provoke prostatitis and should be avoided.

1.2.2. Infrared photocoagulation

We were surprised by the lack of popularity of this method in the GLEM/LOK report.

Infrared coagulation was used sometimes by 24% and often by less than 10% of the participating gastroenterologists.

Infrared coagulation is delivered directly to the internal hemorroidal tissue by a tungsten halogen lamp via a polymer probe tip. The hemorrhoids can be treated circumferentially in one session, by energy pulses of 0.5-2 seconds. Hemorroidal bleeding and symptoms were successfully controlled in 67-96% of patients with first or second degree of hemorrhoids (8).

Recommendations

– this treatment is the safest instrumental treatment of hemorrhoids and can be recommended in most first or second degree hemorrhoids
– the capsule covering the probe has to be sterilized correctly after use
– complications as pain and bleeding are very uncommon.

1.2.3. Rubber banding

As expected this treatment was very often (75%) applicated by our participating gastroenterologists.

Here the internal hemorrhoids are tightly encircled with a rubber band, together with the redundant mucosa

Table 4. — **Hemorrhoids – surgery**

Indications	grade 3-4	93%
	instrum. failure	78%
	drug failure	19%
	grade 1-2	1%
Reluctance for surgery	pain	52%
	incontinence	41%
After treatment of	constipation	34%
examination by	manometry	17%
Stapled hemorrhoidectomy	(Longo)	
	sometimes	35%
	often	15%

and connective tissue in the vicinity. The encirclement must be at least 2 cm above the dentate line, as for sclerosing injections. A too distal placement of the band provides immediate heavy pain. The most elegant technique consists of suctioning one or several hemorrhoids in a capsule, and then applicating the band round the neck of them. Success rate varies around 80% (9), with recurrences of 10-20%. These can be treated by repeat ligatures. Less than 10% ultimately require hemorrhoidectomy. Pain is the most common complication, occurring in 5-60% of the patients, but usually disappears after 1-10 days.

Abscess, urinary retention, prolapse and trombosis of adjacent hemorrhoids and severe bleeding from a scar ulcer occur in less than 5%. Nearly all complications can be treated conservatively, a surgical sewing of a spurting arteriole in the scar ulcer is very rarely indicated. Necrotising pelvic sepsis is a very rare but potentially fatal complication, presenting with a typical clinical triad of severe pain, high fever and urinary retention. The risk is increased in immuno-compromised patients. The treatment consists of immediate IV broad spectrum antibiotics, eventually with a surgical debridement.

Recommendations

– rubber banding should be considered as first choice for grade 3 and extensive grade 2 hemorrhoids
– the risk of complications can be controlled by a correct technique (applicating the band above the dentate line) and by a thorough follow-up by the treating physician.

It is difficult to compare the different instrumental treatment techniques between each other and with surgical hemorrhoidectomy. The randomised controlled trials in the literature are very scarce. A meta-analysis by Johanson and Rimm (10) examined 5 trials, involving 862 patients with first or second degree hemorrhoids, treated by infrared coagulation, sclerotherapy or rubber band ligation. Banding was more effective than infrared coagulation or sclerotherapy, but with a significantly higher incidence of pain. So the authors propose infrared coagulation as the first choice non-operative treatment in first or second degree hemorrhoids. An other meta-analysis by Mac Rae (11) compared the 3 instrumental techniques, hemorrhoidectomy and manual dilatation for first, second en third degree hemorrhoids. Rubber band ligation was the most effective, but also the most painful of the instrumental treatments. Still the authors concluded that banding should be the first choice non-surgical treatment for first, second and third degree hemorrhoids.

1.3. *Surgery*

As expected, the main indications for hemorrhoidectomy in our GLEM/LOK report (Table 4) were failure of instrumental treatment (in 78% of the operated patients) and large hemorrhoids grade 3 and 4 (in 93%). Postoperative pain remained indeed the most important reason of reluctance for surgery, in 52% of patients. Surgical hemorrhoidectomy is the most effective treatment for third and especially fourth degree hemorrhoids. Recurrence after a correctly performed hemorrhoidectomy is very uncommon, in 5% only. However non-operative techniques are preferred in first instance, because surgery is often painful and carries the risks of other complications. These are urinary retention in 2-36%, bleeding in 0.03-6%, stenosis in 0-6%, infection in 0.5-3.5% and incontinence in 2-12% (12).

In Europe the Milligan-Morgan hemorrhoidectomy is the most performed surgical technique. The internal and external components of each hemorrhoid are excised and the skin is left open in a 3-leaf clover pattern. Healing occurs after 6-8 weeks. In 1998 Longo introduced the “stapled hemorrhoidectomy”, removing a ring of redundant rectal mucosa above the anal canal. The arterial inflow that traverses the excised segment is interrupted, leading to sclerosis of the underlying hemorrhoids. The enlarged external hemorrhoids however are not removed. The technique is less painful, as showed by 8 randomised controlled trials (12), with a shorter convalescence time. Recurrences are perhaps more frequent, we wait for more long-term data. Serious complications as rectal perforation, retroperitoneal and pelvic sepsis have been occasionally reported. The St. Mark’s group of London (13) found a higher complication rate and residual symptoms in stapled hemorrhoidectomy, compared to the Milligan-Morgan technique.

Recommendations

– a surgical hemorrhoidectomy should be proposed for grade 4 and intractable grade 2-3 hemorrhoids, in case of failure of non-surgical treatment
– at this moment we still prefer the Milligan-Morgan technique for large internal hemorrhoids with important external components
– a correctly performed stapled hemorrhoidectomy is a therapeutic option in strictly internal hemorrhoids.
– according to the literature (14) and to our own experience, we propose a treatment scheme (Table 5).

Table 5. — **Instrumental treatment hemorrhoids. Recommendations**

Grade 1	Grade 2	Grade 3	Grade 4
Infrared Sclerosing	Infrared (bleeding) Banding (prolapse)	Banding	Hemorrhoidectomy (Banding)

Table 6. — **Fissure – medical treatment (%)**

		Never	Sometimes	Often	Always
Oinment	anaesthetic nitrates	37 9	37 24	16 45	10 22
Injections	anaesthetic botulinum toxin	38 95	47 5	15 0	0 0

2. Anal fissure – treatment

2.1. *Topical therapy – nitroglycerin ointment*

In the GLEM/LOK report, anaesthetic ointments were frequently used in only 26% of patients, but nitroglycerin ointment was frequently used in 67% of the patients with anal fissure (Table 6).

Since the first publication in 1999 (15) several papers demonstrated the healing rates of anal fissure by topical organic nitrate preparations in up to 80%. These ointments release nitric oxide, a degradation product of organic nitrates. Nitric oxide is an inhibitory neurotransmittor in the internal anal sphincter. Since anal fissure is considered as an ischemic ulcer with a concomitant hypertonia of the anal sphincter, NO will exert a relaxing effect on the sphincter, increase anodermal blood flow and promote healing of the fissure.

However, a recent systematic review (16) of all medical therapies for anal fissure showed an only slightly significant difference in favour of nitroglycerin ointment compared to placebo, with healing rates of only 25-50%. Moreover, headache is an embarrasing side effect of nitroglycerin. Topical calcium channel blockers appear to be as effective as nitroglycerin, but have less side effects (17). Long-term studies are needed since the risk of late recurrence is real in these topical therapies.

2.2. *Botulinum toxin*

In the GLEM/LOK report, 95% of the consulted gastroenterologists never used botulinum toxin injections in the medical treatment of anal fissure.

Botulin toxin causes denervation of the internal anal sphincter. The toxin acts rapidly and prevents a release of acetylcholine by presynaptic nerve terminals. A lowering in pressure tone of the anal sphincter is seen clinically and manometrically for 3-4 months (15). The optimal location of the injections, in the internal or external sphincter, and laterally or ventrally is still discussed.

Second line injections improve symptoms in approximately 75% of patients after failure of nitroglycerin ointments (18), with avoidance of sphincterotomy. Perhaps higher healing rates may be obtained with botulin toxin as first line therapy.

2.3. Internal lateral sphincterotomy

There was no question in the GLEM/LOK report about the surgical treatment of chronic anal fissure.

Internal lateral sphincterotomy is the most efficient treatment of chronic anal fissure, with healing rates of 95-99% (17) and recurrence rates of less than 10% in most studies. The sphincterotomy should be sufficient since incomplete sections have a higher recurrence rate. But the completer the sphincterotomy, the higher the risk of permanent (minor) sphincter impairment. This occurs in 5-30% of the operated patients.

Recommendations

- general measures as softening the stools and avoiding straining are still the first line treatment, able to heal a number of *acute* anal fissures
- most *chronic* anal fissures however need a more appropriate treatment, pharmacologic or surgical
- we propose following therapeutic scheme :
  - topical nitroglycerin ointment 0.2% treatment is used t.i.d. for 4 to 6 weeks, as first line
  - failures are treated with botulin toxin 20 TU intrasphincterally, with eventually a second injection after 6 weeks
  - when medical therapies failed, resistant fissures are best treated with an internal lateral sphincterotomy (19).

In our GLEM/LOK report (Table 7) anoscopy was correctly mentioned as the first line examination in 59% of the cases in the diagnostic work-up of anal abscess and fistula. MRI was used in 45% of the cases. Endoscopic ultrasonography (EUS) was used in a very low percentage (18%). Fistulography was still used in 35% and CT-scan in 34% of patients with anal abscess and/or fistula.

We will only discuss the diagnostic work-up since treatment of anal abscess and fistula is mainly surgical, or has at least to be combined with surgery as in Crohn's disease.

Abscesses are usually easy to diagnose, excepted when high located or without external fistulas openings. The detection and exact localisation of the accompanying perianal fistula(s) is first made by visual inspection, palpation and eventual passage of a probe into the (external) fistulous opening. When performed by an experienced proctologist, 80% of the fistulous tracts can be correctly classified in this way. For the remaining

Table 7. — **Abscess / fistula work-up**

Anoscopy	59%	CT-scan	34%
MRI	45%	EUS	18%
Fistulography	35%		

Table 8. — **Incontinence**

Diagnosis	manometry	47%	always
	EUS	30%	sometimes
	EMG	29%	sometimes
	defecography	27%	sometimes
Treatment	loperamide	31%	sometimes
	physiotherapy	38%	often
	biofeedback	31%	often

Table 9. — **Continence grading scale (Wexner)**

Type of incontinence	Frequency				
	Never	Rarely	Sometimes	Usually	Always
Solid	0	1	2	3	4
Liquid	0	1	2	3	4
Gas	0	1	2	3	4
Wears pad	0	1	2	3	4
Lifestyle alteration	0	1	2	3	4

Jorge and Wexner, Dis Colon Rectum, 1993 (with kind permission of the authors).

20%, anorectal EUS or pelvic MRI with phased-array or endoanal coils have a high diagnostic accuracy (3). Especially in Crohn's disease, the combination of digital examination under anaesthesia with EUS or MRI changes surgical management in 10-15% of cases (3). Older imaging modalities as fistulography and CT of the anorectum have a too low diagnostic accuracy to be clinically useful (3) and should be abandoned for MRI and EUS.

Recommendations

- in the diagnostic work-up of anal abscesses and fistulas, the first examination should always be a thorough proctologic examination with anoscopy, eventually under (general) anaesthesia
- an EUS examination of the anorectum by an experienced ultrasonographer, with eventual enhancement by H_2O_2 injection in the external fistulous opening, is proposed in second line especially in low and horseshoe fistulas
- MRI of the anorectum is the most performing technique (when available) and is proposed especially in high and complex fistulas, were it provides a correct preoperative mapping.

3. Faecal incontinence

3.1. *Diagnosis*

In our responding gastro-enterologists (Table 8), anorectal manometry was the most performed technique, but only 47% of our colleagues used it always in this indication. EUS was used sometimes by 30%, what seems us surprisingly low. Probably this is due to a lack of familiarity and availability of both techniques. Especially anorectal manometry should be more available in well equipped medical centres in Belgium.

Faecal incontinence is a common and underestimated healthcare problem, occurring in the UK in 5-6% of people over 40 years old (20). In home residents, faecal incontinence is the second cause of admission.

In the diagnostic work-up, clinical history and examination play a central role. Several "grading scales" have been proposed, but the Wexner scale (21) seems us logical and easy to handle. On this scale, perfect continence means 0 points and complete incontinence 20 points (Table 9).

The clinical diagnosis is refined by anorectal manometry, EUS and EMG.

Recommendations

- we propose to use the Wexner scale in all patients referred for faecal incontinence, as a diagnostic hallmark about severity of incontinence and an excellent parameter of therapeutic evaluation
- after a thorough proctologic examination, anorectal manometry should be proposed as first line diagnostic technique, adding important data about the motoric and sensory capacity of the anorectum
- EUS is of utmost importance in the evaluation of sphincter defects after obstetric, surgical or other traumatic injuries
- EMG and pudendal nerve latency are interesting in the evaluation of neurogenic incontinence.

3.2. *Therapy*

Physiotherapy was used in only 38% and biofeedback in only 31% of the patients with faecal incontinence by the participating gastro-enterologists. Perhaps ignorance and lack of availability of these treatments are in cause. The reluctance of patients to discuss their faecal incontinence and their unjustified pessimism about therapeutic modalities also play an important role.

Treatment always starts with standard care, comprising advice about diet, stool habits and medication as loperamide. A second step consists of anal exercises at home, further completed by biofeedback of the pelvic floor and the anal sphincter.

This training is performed under guidance of a skilled physiotherapist with an adapted equipment and manometric or myographic devices. In this way, patients are trained to improve the muscle strength and coordination of the anal sphincter and the pelvic floor and also their rectal sensitivity to distention.

Biofeedback has become more and more popular the last decade. Most studies published report an improvement in 70% and a cure of symptoms in a little less than 50% of patients with faecal incontinence. But most of the studies were not randomised and placebo-controlled.

A large randomised controlled trial of biofeedback for faecal incontinence showed no statistically significant superiority of biofeedback versus conservative therapy with diet, techniques to improve the evacuation and a titration dose of antidiarrheal medication (22). However the success percentage of biofeedback (54%)

Table 10. — **Education – Practice**

• My training has been **un**satisfactory	55%
• Training should include	
every day practice	93%
surgery	13%
• I practice surgical proctology	13%
• Multidisciplinary perineology centers are	
interesting	81%
necessary	19%

in this study seems us rather low and the success of standard care (53%) rather high.

Moreover patients experienced greater subjective satisfaction with treatment, than the improvement in objective parameters would indicate. This suggests that an improvement in coping mechanisms played an important role in the therapy, confusing the therapeutic results in the different groups.

Recommendations

– for all our incontinent patients, we recommend standard care with advices on diet, medication, stool habits and coping behaviour
– in the motivated patients, able to cooperate and with a sufficient reserve of sensory and motoric sphincter capacity, biofeedback should always be tried
– when these conservative measures fail, a surgical correction (sphincteroplasty, artificial sphincter or graciloplasty) is to be taken in consideration.

4. Medical education

Fifty five % of the responding gastroenterologists considered the training in proctology as unsatisfactory (Table 10). Most asked for training in everyday proctology, not in surgical techniques. Eighty one % were interested in multidisciplinary perineology centres.

Proctologic pathology is indeed closely related to pelvic floor diseases, with urologic and gynaecologic repercussions.

Conclusions

Proctologic education and training should improve in Belgium. A close cooperation of the gastro-enterologist or proctologist with the urologist and the gynaecologist is mandatory. A multidisciplinary “Low Pelvis Clinic” is operational since several years in our University Hospital in Antwerp. It opens new and very encouraging perspectives in the diagnosis and therapy of our proctologic patients. They represent an important (but sometimes neglected) part of our daily gastroenterologic practice.

Bibliography

1. American Gastroenterological Association medical position statement : diagnosis and treatments of hemorrhoids. *Gastroenterol.*, 2004, **126** : 1461-1462.
2. American Gastroenterological Association medical position statement : diagnosis and care of patients with anal fissure. *Gastroenterol.*, 2003, **124** : 233-234.
3. American Gastroenterological Association medical position statement : perianal Crohn’s disease. *Gastroenterol.*, 2003, **125** : 1503-1507.
4. GIONCHETTI P., CAMPIERI M., BELLOZZI A., BRIGNOLA C., MIGHOLI M., BARBARA L. 5-ASA suppositories in hemorrhoidal disease. *Dis. Colon Rectum*, 2001, **44** : 1489-1495.
5. HO Y., TAN M., SEOW-CHOEN F. Micronized purified flavonidic fraction compared favorably with rubber band ligation and fiber alone in the management of bleeding hemorrhoids : randomised controlled trial. *Dis. Colon Rectum*, 2000, **43** : 66-69.
6. MOESGAARD F., NIELSEN M., HANSEN J., KNUDSEN J. High-fiber diet reduces bleeding and pain in patients with hemorrhoids : a double-blind trial of Vi-Siblin. *Dis. Colon Rectum*, 1982, **25** : 454-456.
7. KHOURY G., LAKE S., LEWIS M., LEWIS A. A randomised trial to compare single with multiple phenol injection treatment for haemorrhoids. *Br. J. Surg.*, 1985, **72** : 741-742.
8. WALKER A., LEICESTER R., NICHOLLS R., MANN C. A prospective study of infrared coagulation, injection and rubber band ligation in the treatment of haemorrhoids. *Int. J. Colorectal Dis.*, 1990, **5** : 113-116.
9. WROBLESKI D., CORMAN M., VELDENHEIMER M., COLLER J. Long-term evaluation of rubber ring ligation in hemorrhoidal disease. *Dis. Colon Rectum*, 1980, **23** : 478-482.
10. JOHANSON J., RIMM A. Optimal nonsurgical treatment of hemorrhoids : a comparative analysis of infrared coagulation, rubber band ligation and injection sclerotherapy. *Am. J. Gastroenterol.*, 1992, **87** : 1600-1606.
11. MACRAE H., TEMPLE L., MC LEOD R. A meta-analysis of hemorrhoidal treatments. *Semin. CR Surg.*, 2002, **13** : 77-83.
12. American Gastroenterological Association technical review on the diagnosis and treatment of hemorrhoids. *Gastroenterol.*, 2004, **126** : 1463-1473.
13. CHEETHAM M., COHEN C., KAMM M., PHILLIPS M. A randomised, controlled trial of diathermy hemorrhoidectomy vs. stapled hemorrhoidectomy in an intended day-care setting with longer-term follow-up. *Dis. Colon Rectum*, 2003, **46** : 491-497.
14. JOHANSON J. Evidence-based approach to the treatment of hemorrhoidal disease. *Evidence-based Gastroenterol.*, 2002, **3** : 26-31.
15. BRISINDA G., MARIA G., BENTIVOGLIO A., CASSETTA E., GUI D., ALBANESE A. A comparison of injections of Botulinum toxin and topical nitroglycerin ointment for the treatment of chronic anal fissure. *N. Engl. J. Med.*, 1991, **341** : 65-69.
16. NELSON R. A systematic review of medical therapy for anal fissure. *Dis. Colon Rectum*, 2004, **47** : 422-431.
17. American Gastroenterological Association technical review on the diagnosis and care of patients with anal fissure. *Gastroenterol.*, 2003, **124** : 235-245.
18. LINDSEY I., JONES O., CUNNINGHAM C., GEORGE B., MORTENSEN M. Botulinum toxin as second-line therapy for chronic anal fissure failing 0.2% glyceryl trinitrate. *Dis. Colon Rectum*, 2003, **46** : 361-366.
19. The standards practice task force. The American Society of Colon and Rectal Surgeons. Practice parameters for the management of anal fissures (revised). *Dis. Colon Rectum*, 2004, **47** : 2003-2007.
20. PERRY S., SHAW C., Mc GROTHER C., FLYNN R., ASSASSA R., DALLOSSO H., WILLIAMS K., BRITTAIN K., AZAM U., CLARKE M., JAGGER C., MAYNE C., CASTLEDEN C. The prevalence of faecal incontinence in adults aged 40 years or more living in the community. *Gut*, 2002, **50** : 480-484.
21. JORGE J., WEXNER S. Etiology and management of fecal incontinence. *Dis. Colon Rectum*, 1993, **36** : 77-97.
22. NORTON C., CHELVANAYAGAM S., WILSON-BARNETT J., REDFERN S., KAMM M. Randomized controlled trial of biofeedback for fecal incontinence. *Gastroenterol.*, 2003, **125** : 1320-1329.