# Bridging the gap: pelvic floor physical therapy in the treatment of chronic anal fissure

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# CHAPTER 2

# Management of chronic anal fissure, results of a national survey among gastrointestinal surgeons in the Netherlands

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# Abstract

## Background

Chronic anal fissure (CAF) is a common, bothersome condition frequently accompanied by pelvic floor complaints. Despite current guidelines, optimal management is challenging. The aim of this study is to evaluate current management of CAF among gastrointestinal surgeons in the Netherlands.

## Methods

Dutch gastrointestinal surgeons and residents were sent a survey invitation by email, which was available online between June 2021 and September 2021. The questionnaire consisted of 21 questions concerning work experience, physical examination, diagnostic- and surgical techniques and follow-up.

## Results

Overall, 106 (33%) respondents completed the survey. Most respondents (59%) had at least 10 years of experience in treating CAF. Only 23% always addressed pelvic floor complaints. Fifty-one percent performed digital rectal examination and 22% always, or almost always, examined the pelvic floor muscles. Most respondents started treatment with fibers and/or laxatives and ointment (96%). Diltiazem was in 90% the preferred ointment. Twenty-two percent referred patients for pelvic floor physical therapy. Botulinum toxin was in 54% performed under general- or spinal anesthesia or sedation. The surgical procedure of choice was fissurectomy (71%) followed by lateral internal sphincterotomy (27%). Fissurectomy was in 51% always combined with botulinum toxin. Fifty-seven percent of the respondents preferred a physical follow-up appointment.

## Conclusion

Guideline recommendations are largely followed in the Netherlands, starting with conservative measures followed by surgical procedures. Surgeons do not consistently assess pelvic floor complaints, nor do they routinely examen the pelvic floor muscles. Awareness of pelvic floor dysfunctions is important to refer patients for pelvic floor physical therapy.

# Introduction

Chronic anal fissure (CAF) is defined as a longitudinal ulcer in the squamous epithelium with persisting symptoms for longer than four to six weeks or recurrent fissures.[1,2] Patients usually experience anal pain, during and immediately after defecation, which may last several hours and therefore has a substantial impact on daily activities and quality of life.[3,4]

Despite current Dutch and international guidelines optimal management of CAF is quite challenging, mainly because of its recurrent nature, therapy compliance and the variety of non-operative and operative treatments.[5,6]

Treatment of CAF has undergone an alteration in the last two decades from invasive to non-invasive, reserving surgical interventions for lesions refractory to conservative therapy.[7] Initial conservative management are comprised of lifestyle advice, fibre intake and/or use of laxatives and ointments. The use of ointments is aimed at reducing elevated internal sphincter tone and consequently increase the anodermal vascular blood flow, for which nitro-glycerine as well as calcium channel blockers may be prescribed. Botulinum toxin can be considered as an alternative or as a next step when standard conservative therapy fails.[5,6] In addition, various surgical procedures are possible such as fissurectomy, advancement flap repair and lateral internal sphincterotomy (LIS). Currently, LIS is considered the golden standard[6,8] with healing rates of 90-100% but with a potential risk of incontinence.[1,9-12]

Although most anal fissures probably heal spontaneously or with conservative measures, a percentage tend to recur or persist. A proportion of these patients have a history of constipation and obstructed defecation due to an unrecognized pelvic floor dysfunction. Consequently, these patients have complaints of excessive straining, incomplete evacuation, and hard stools together with infrequent stooling which might be due to, for instance, dyssynergia.[13,14] Dyssynergia can primarily lead to anorectal pain but can also evolve secondary to disorders causing anorectal pain.[15]

Pelvic floor dysfunctions are associated with urological, bowel, gynecological and sexual complaints, and chronic pelvic pain[16,17] and can be treated with pelvic floor physical therapy. It is unknown if surgeons treating these patients are sufficiently aware of this condition in patients with CAF. Although Dutch and international guidelines are largely based on high-quality evidence, recommendations are ambiguous. As a result, there is variation in clinical practice. The aim of this study is to evaluate current practice in the management of CAF among gastrointestinal surgeons in the Netherlands.

# Materials and Methods

## Design of the survey and participants

This survey study was performed and reported according to the Checklist for Reporting Results of Internet E-Surveys (CHERRIES).[18] As this study did not apply the Medical Research Involving Human Subjects Act (WMO), approval by the ethics committee was not required.

The survey was written in Dutch, consisted of 21 questions, and was created using a web-based program called Survio.[19] The closed-survey (i.e., only accessible through invitation) was sent by email to all members of the Dutch Working Group Coloproctology as well as to gastrointestinal surgeons, fellows, and residents of each hospital in the Netherlands. We used the email database of our previous survey among Dutch gastrointestinal surgeons concerning the management of anal fistulas.[20] Known invalid domains were removed and the list was checked globally by contact information that was retrieved from the Dutch Association of Surgery. The survey was accompanied by an invitation email explaining the objectives of the study and length of time of the survey (<10 min). One reminder email was sent after 4 days, the second after 10 weeks. No time limit was set for filling in the survey. The survey was available online from June 25th, 2021, to September 30th, 2021.

## Survey

The survey consisted of 3 pages and a total of 21 questions, formulated by all five authors. The questions were reviewed by two colorectal surgeons and one urologist, after which the survey was edited. All authors conducted a pilot for testing validity. The survey consisted of topics concerning baseline characteristics such as respondents' function, type of hospital, years of experience in treating CAF and number of surgical procedures – including botulinum toxin injections – per year. Other questions assessed medical history and physical examination with attention to pelvic floor complaints and dysfunctions; diagnostics techniques; surgical approaches; follow-up and presumed effect of treatment. Seventeen questions were single-choice, two were multiple-choice and two questions required a number. The participants were given the chance to review and change their answers. The survey was tested for completeness, usability, and technical functionality before submission. The survey was voluntary, and no incentives were offered.

### Statistical analysis

All statistical analyses were performed using Statistical Packages for Social Sciences (SPSS, Chicago, II, USA, version 26.0). To prevent missing data, all questions were mandatory with automated skip logic. The web-based program Survio automatically collected all data after which the data were exported to a Microsoft Excel spreadsheet and then imported to SPSS. Descriptive analyses were performed on all data. Categorical outcome data across groups were analysed using the Chi-square test.

## Results

### Respondents' characteristics

In total, 329 invitations were sent by email to gastrointestinal surgeons, fellows, and residents. Nine email addresses with an invalid domain did not receive the invitation. Hundred-and-six (33%) surveys returned and were completely answered. Forty- one responses were excluded since they did not complete. Respondents' characteristics are shown in table 1. Eighty-one percent of the respondents were gastrointestinal surgeons and 89% worked in a general hospital. Fifty-nine percent of the responders had at least 10 years of experience with treating CAF and 61% performed more than 10 procedures for CAF per year, including botulinum toxin (BT).

### Medical history and physical examination

From the respondents, 28% never or almost never asked and only 23% always or almost always asked for complaints in other domains of the pelvic floor. A subgroup analysis showed that respondents with more than 10 years of experience in treating CAF slightly more often asked for pelvic floor complaints than respondents with less than 10 years of experience, although not significant.

Half of the respondents performed digital rectal examination and 23% performed proctoscopy. Only 22% of the respondents indicated that they always, or almost always, performed physical examination of the pelvic floor muscles, whilst 37% never or almost never did (Table 1).

### Treatment

Ninety-six percent started treatment with fibers and/or laxatives and ointment. In 90% of the respondents, diltiazem was the preferred ointment. Fifty-six percent prescribed

ointment for a period of 6 weeks followed by 27% who continued ointment for 12 weeks. Most of the respondents (72%) felt they had enough time to give the patient instructions or advice regarding the use of laxatives, lifestyle, and ointment.
Twenty-two percent of the respondents referred to a pelvic floor therapist and they always combined this with fibers and/or laxatives.
Botulinum toxin injections were given by 77% of the respondents mainly under general- or spinal anesthesia or sedation (42%). Almost half of the respondents repeated botulinum toxin injections twice and more than 76% never performed botulinum toxin in the levator ani muscle.
Fissurectomy was the most popular operative procedure (71%), followed by LIS (27%). More than half of the respondents always, or almost always, used botulinum toxin intersphincteric in case they performed a fissurectomy. When botulinum toxin injections were performed under anesthesia, only 27% performed a fissurectomy simultaneously (Table 1).

### Follow-up

Fifty-seven percent scheduled a physical follow-up check in the outpatient clinic. Forty-three percent referred a patient with CAF to another specialist at least once. A percentage of 57% estimated their patients to be symptom-free after 1 year in 50-75% of the cases.
Thirty percent of the respondents had the feeling they always or almost always treat these patients satisfactorily (Table 1).

## Discussion

Implementation of Dutch and international guidelines for chronic anal fissure in daily practice varies. The present study provides an overview of the current approach in management of CAF amongst gastrointestinal surgeons in the Netherlands.
The pelvic floor plays a major role in defecation and continence. Furthermore, pelvic floor dysfunctions are prevalent in patients with chronic anal pain syndromes.[21,22] However, 28% of the respondents never or almost never asked for any pelvic floor complaints in patients with CAF and only 23% always asked about this topic.
Complaints of pelvic floor disorders vary and are often complex, making these disorders less widely recognized.[23] A survey by Nicolai et al. about addressing pelvic floor complaints among Dutch gastroenterologists showed that one of the reasons

for not asking about pelvic floor complaints was a lack of knowledge about pelvic floor disorders.[24] In our survey we did not inquire the reason for not asking for pelvic floor complaints, but this would be probably the same in gastrointestinal surgeons. We feel that knowledge about pelvic floor dysfunctions is beneficial in the treatment of anorectal disorders since this might result in a referral to another specialist in an early stage.

The study shows that there is moderate consensus among the respondents concerning performing physical examination in patients with CAF. Only half of the respondents performed digital rectal examination and 37% never or almost never examined the pelvic floor muscles. Seniority in experience did not differentiate. In case of expecting a CAF, reason for not performing digital rectal examination could be the assumption that its contradicted or should be kept to a minimum because of associated pain. However, careful digital rectal examination is important to obtain information on anorectal anatomy and function.[25,26] When identifying pelvic floor muscle dysfunction, patients can be appropriately referred to a pelvic floor physical therapist.

Most of the respondents is accustomed to start with conservative measures, which is according to current guidelines.[5,6,27-29] Diltiazem ointment was the preferred local treatment. Duration of application varies in studies and guidelines, but mostly a duration of at least 6 weeks is recommended.[30-32] In our study 56% of the respondents indicated to prefer a duration of 6 weeks. Forty percent preferred a longer therapy duration, except for 4 respondents.

Most respondents did have enough time to give instructions in the consulting room. This is important, since information about patient' complaints, lifestyle advice, laxative- or ointment and its use require an explanation by the clinician.[2,33]

Pelvic floor dysfunctions can effectively be treated with pelvic floor physical therapy, but only 22% of the respondents referred to this treatment modality, a missed opportunity. The clinical effect of pelvic floor physical therapy in patient with CAF is investigated by the Pelvic floor Anal Fissure (PAF) study.[34]

Botulinum toxin injections were performed in the outpatient's clinic by less than half of the respondents of whom 90% performed this without local anesthetics, excluding the 23 respondents who did not perform this procedure at all. More than half of the respondents (54%) performed botulinum toxin injections under general- or spinal anesthesia or sedation which is in accordance with a recent survey among members of the American Society of Colon and Rectal Surgeons (ASCRS).[35] In current literature, there is no consensus on dose, site, or number of injections.[29,36] This corresponds

with the results of our study showing no consensus on how often one should repeat botulinum toxin. Nevertheless, botulinum toxin remains an effective treatment in recurrent anal fissures as well as in patients with therapeutic failure of prior botulinum toxin injection.[7,37]

In case botulinum toxin was performed under anesthesia, only 27% always or almost always simultaneously performed fissurectomy and another 27% does this in more than half of the cases. This is comparable to the results of a survey among members of the ASCRS.[35]

When performing fissurectomy, 51% always or almost always simultaneously injected botulinum toxin and 23% did this in more than half of the patients. The clinical effect of this combined procedure was recently confirmed by Roelandt et al.[38] They found that botulinum toxin injections significantly increased the efficiency of fissurectomy, with a healing rate of 90%, compared to 81% in fissurectomy alone.[38]

Fissurectomy was the surgical procedure of choice in our study (71%), followed by LIS (27%). LIS is the preferred treatment for refractory anal fissures and is still considered the golden standard since LIS has superior healing rates,[5,6] although fecal incontinence is a potential risk.[8-11] Guideline recommendations differ on this subject. The ASCRS guideline favours LIS,[6] the Dutch guideline, however, recommends LIS only for refractory fissures when previous treatment fails.[5]

The follow-up was diverse in our survey. Twenty-one percent of the respondents stated that they scheduled a telephone call follow-up check after starting the treatment. This is quite interesting given the fact that it concerns a chronic disorder which has a large impact on quality of life and increased health care utilization.[39] Besides that, chronic pelvic pain is often accompanied by pelvic floor dysfunctions.[40] A physical diagnostic follow-up should be performed since physical rectal examination is important to monitor clinical healing of the fissure and investigation of anal sphincter tone. A physical follow-up will probably better monitor patients' wellbeing and subsequently ensure that the patient does not end up in a vicious circle of pain again.

Forty-three percent referred a patient to another specialist at least once last year. No recommendations are made in clinical guidelines concerning follow-up period or when to refer a patient to another specialist.

This study has some limitations that should be mentioned. First, the response rate of 33% may have caused non-response bias. However, this response rate was less compared to earlier published response rates of online surveys.[41,42] Second, the questionnaire was sent to all members of the Dutch Coloproctology Working group

that consists of members that have large experience and affiliation in treating anorectal diseases. Of all respondents, 33% came from this group. This may have caused selection bias. Third, we used a non-validated questionnaire and respondents were self-reported. Self-reports may have resulted in an overestimation of history-taken practices and to our knowledge, validated questionnaires are not available in this field.

## Conclusion

Guideline recommendations in treating CAF are largely followed and consistent among most gastrointestinal surgeons in the Netherlands. Initial treatment consists of conservative measures followed by surgical procedures. Surgeons do not consistently assess pelvic floor complaints, nor do they routinely examen the pelvic floor muscles. Awareness of pelvic floor dysfunctions in patients with CAF is important to refer patients for pelvic floor physical therapy.

### *What does this paper add to the literature?*

Gastrointestinal surgeons in the Netherlands have not yet been surveyed regarding their current management concerning chronic anal fissure. The paper discusses similarities and discordances between surgeons and compare these to current Dutch and international guidelines. Furthermore, it emphasizes the focus on the pelvic floor in current management of CAF.

**Table 1. Results**

| **Respondents' characteristics** | **N (%)** |
|---|---|
| What is your medical specialty? | |
| Gastrointestinal surgeon | 86 (81) |
| General surgeon | 7 (7) |
| Fellow | 2 (2) |
| Resident in training | 8 (7) |
| Physician assistant/nurse practitioner | 3 (3) |
| What type of hospital are you working? | |
| *Academic* | 4 (4) |
| *Non-academic (peripheral)* | 94 (89) |
| *(Private) clinic* | 8 (7) |
| How many years of work experience do you have as a medical specialist in the treatment of CAF? | |
| *1-5 years* | 19 (18) |
| *5-10 years* | 24 (23) |
| *10-20 years* | 35 (33) |
| *>20 years* | 28 (26) |

**Table 1. Continued**

| Respondents' characteristics | N (%) |
|---|---|
| How many procedures for CAF (incl botulinum toxin) do you perform per year? | |
| *0-10* | 41 (39) |
| *10-30* | 41 (39) |
| *30-50* | 19 (18) |
| *>50* | 5 (5) |
| **Medical history and physical examination** | |
| How often do you ask a patient with CAF about pelvic floor complaints (gynaecology, urology, sexuology)? **SC?* | |
| *Never/almost never* | 30(28) |
| *In less than half of the cases* | 38 (36) |
| *In more than half of the cases* | 14 (13) |
| *Almost always/always* | 24 (23) |
| In case you expect CAF by medical history, which physical examination and/or diagnostics do you do? **MC* | |
| *None* | 1 (1) |
| *Inspection* | 103 (97) |
| *Digital rectal examination* | 54 (51) |
| *Proctoscopy* | 24 (23) |
| *Endo-anal ultrasound* | 6 (6) |
| Do you examine the pelvic floor muscles by a patient with CAF (squeeze, relaxation and push of the levator ani muscle and external anal sphincter)? **SC* | |
| *Never/almost never* | 39 (37) |
| *In less than half of the cases* | 26 (24) |
| *In more than half of the cases* | 18 (17) |
| *Almost always/always* | 23 (22) |
| **Treatment** | |
| Which treatment do you initiate when treating a patient with CAF? (assuming the general practitioner has not already done this) **MC* | |
| *Lifestyle advice by nutrition advice and toilet behaviour* | 79 (74) |
| *Fibers/laxatives and ointment* | 102 (96) |
| *Pain medication (local and/or systemic)* | 43 (41) |
| *Pelvic floor physical therapy* | 23 (22) |
| *Botulinum toxin* | 2 (2) |
| Which ointment do you prescribe for CAF? **SC* | |
| *Lidocaine* | 1 (1) |
| *Isosorbide dinitrate* | 9 (8) |
| *Diltiazem* | 96 (90) |
| *Other* | 0 (0) |
| In case of isosorbide dinitrate or diltiazem, what was your recommendation concerning duration of application? (number) | |
| *16 weeks* | 1 (1) |
| *12 weeks* | 29 (27) |
| *8 weeks* | 13 (12) |
| *6 weeks* | 59 (56) |
| *4 weeks* | 1 (1) |
| *3 weeks* | 1 (1) |
| *2 weeks* | 2 (2) |

**Table 1. Continued**

| Respondents' characteristics | N (%) |
|---|---|
| Do you feel you have enough time to instruct and advice the patient regarding the use of laxatives, lifestyle, and ointment? *SC | |
| *Never/almost never* | 4 (4) |
| *In less than half of the cases* | 7 (7) |
| *In more than half of the cases* | 19 (18) |
| *Almost always/always* | 76 (72) |
| How do you perform the botulinum toxin (BT) injections? *SC | |
| *Outpatient clinic, without anesthesia* | 34 (32) |
| *Outpatient clinic, with local anesthesia* | 4 (4) |
| *General- or spinal anesthesia or sedation* | 45 (42) |
| *Not applicable, I do not perform this procedure* | 23 (22) |
| How often do you repeat BT injections? *SC | |
| *One time* | 16 (19) |
| *Two times* | 41 (49) |
| *More than two times* | 22 (27) |
| *I do not repeat* | 4 (5) |
| Do you simultaneously give BT in the levator ani muscle when treating CAF? *SC | |
| *Never/almost never* | 63 (76) |
| *In less than half of the cases* | 13 (16) |
| *In more than half of the cases* | 6 (7) |
| *Almost always/always* | 1 (1) |
| What is your preferred surgical procedure for CAF (except BT)? *SC | |
| *Fissurectomy* | 59 (71) |
| *Lateral internal sphincterotomy (LIS)* | 22 (27) |
| *Advancement flap repair* | 2 (2) |
| In case you perform a fissurectomy, do you simultaneously give BT intersphincteric? *SC | |
| *Never/almost never* | 15 (18) |
| *In less than half of the cases* | 7 (8) |
| *In more than half of the cases* | 19 (23) |
| *Almost always/always* | 42 (51) |
| In case you perform BT under anesthesia, do you simultaneously perform a fissurectomy? *SC | |
| *Never/almost never* | 24 (29) |
| *In less than half of the cases* | 15 (18) |
| *In more than half of the cases* | 22 (27) |
| *Almost always/always* | 22 (27) |
| **Follow-up** | |
| How do you manage the follow-up after starting a treatment? *SC | |
| *No follow-up* | 0 (0) |
| *Physical appointment* | 60 (57) |
| *Telephone call* | 22 (21) |
| *According to the needs of the patient* | 24 (23) |
| How many times did you refer a patient with CAF to another specialist last year? (number) | |
| *0 times* | 61 (58) |
| *1-5 times* | 42 (40) |
| *6-10 times* | 3 (3) |

**Table 1. Continued**

| Respondents' characteristics | N (%) |
|---|---|
| What percentage of your patients do you estimate to be symptom-free a year after starting the treatment? *SC | |
| *0-25%* | 0 (0) |
| *25-50%* | 9 (8) |
| *50-75%* | 60 (57) |
| *75-100%* | 33 (31) |
| *I do not know* | 4 (4) |
| Do you feel you can treat patients with CAF satisfactorily? *SC | |
| *Never/almost never* | 0 (0) |
| *In less than half of the cases* | 2 (2) |
| *In more than half of the cases* | 72 (68) |
| *Almost always/always* | 32 (30) |

CAF= Chronic Anal Fissure; BT=botulinum toxin; SC= Single Choice; MC= Multiple Choice

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