


Clinician management of patients with Crohn's-related perianal fistulas: results of a multispecialty case-based survey

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ABSTRACT

Objective A case-based survey was conducted to identify practice patterns and knowledge gaps in the management of Crohn's perianal fistulas (CPF) and to further understand approaches to CPF management within the USA by healthcare professionals (HCPs) from different specialties.

Methods The web-based survey, comprising two hypothetical patient case vignettes (case 1: initial CPF presentation and progression to partial response; case 2: recurrent CPF), was distributed September–October 2020 to US gastroenterologists (GEs) and colorectal surgeons (CRSs), and nurse practitioners (NPs) and physician assistants (PAs) from these specialties, who managed ≥1 patient with CPF/month. The survey included questions on clinician evaluation and treatment approach.

Results Across surveyed HCPs (127 GEs, 63 GE NP/PAs, 78 CRSs and 14 CRS NP/PAs), 39% stated that they did not use any standard system for classifying/scoring CPF. On initial CPF presentation, ≥98% of HCPs reported a requirement for additional diagnostic/imaging evaluation before proceeding with medical management; GEs preferred pelvic MRI (70%) and CRSs preferred examination under anaesthesia (62%). Preferred management after partial response to initial treatment varied by HCP type (23% GEs vs 71% CRSs preferred continuation of current medical therapy; 60% vs 38% preferred seton continuation; 24% vs 41% preferred seton removal, respectively). For recurrent CPF, most HCPs chose to switch from infliximab to another antitumour necrosis factor agent, while most GEs opted to switch to a different monoclonal antibody. In contrast, 44% of GEs and 27% of CRSs opted to proceed with surgery.

Conclusion Lack of consensus in CPF management requires improved coordination in treatment approaches among specialists.

INTRODUCTION

Despite new and emerging treatments, Crohn's disease has a substantial impact on patients' quality of life, particularly owing to the development of perianal fistulas.^{1–3} Crohn's perianal fistulas (CPF) predominantly develop from perianal abscesses and have been estimated to occur in up to a third of patients with Crohn's disease in the first 20 years after diagnosis,^{4–6} with a high rate of recurrence.^{7,8}

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Crohn's perianal fistulas (CPF) are generally managed by a variety of healthcare professionals; however, there are currently no US multispecialty guidelines on standard of care.

WHAT THIS STUDY ADDS

⇒ This case-based study assessed practice patterns, perceptions and attitudes among US clinicians with experience of treating patients with CPF.
⇒ It identified clinician educational needs and revealed a lack of consensus among clinicians from different fields on the diagnosis and management of CPF.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The findings from this study can be used to address clinician educational needs and to support the development of a consistent treatment approach for CPF to enhance multidisciplinary care and to improve patient outcomes.

Evidence is limited regarding the best treatment approach for patients with CPF. CPF are generally managed by a variety of healthcare professionals (HCPs), including gastroenterologists (GEs) and colorectal surgeons (CRSs).⁹ US medical societies representing these specialists have issued their own guidelines or position statements on how best to manage patients with CPF, reflecting their own specialties and focus.^{10–12} As such, depending on the aetiology of the fistula, treatments for CPF include pharmacological and surgical options or a combination thereof, but there is currently no clear consensus on standard of care for disease management in the USA.¹³ In 2024, the European Crohn's and Colitis Organisation published updated evidence-based recommendations on the management of CPF, which cover both pharmacological and surgical treatments.¹⁴ Furthermore, the British Society of Gastroenterology guidelines on the management of inflammatory bowel disease recommend a multidisciplinary

approach to the management of perianal fistula.¹⁵ More recently, the American Gastroenterological Association (AGA) has worked with a consortium of stakeholders to develop recommendations for optimal management of CPF (of varying complexity), in which the need for a multidisciplinary approach to diagnosis, management and monitoring of CPF was emphasised.¹⁶

Few studies have specifically investigated clinician educational needs or barriers to the management of patients experiencing CPF. Results from prior research demonstrate that, compared with other methods of measuring processes of care, such as chart reviews and standardised patients, case vignettes provide a valid, cost-effective and non-invasive method to assess clinical practice.¹⁷ Accordingly, we designed a case-based study to assess practice patterns, perceptions and attitudes among US clinicians with experience of treating patients with CPF.

METHODS

Development of the clinician survey

A survey was developed using hypothetical case vignettes to investigate clinicians' current practices related to the management of CPF. The survey included two patient case vignettes with associated questions (in some cases tailored specifically to either the gastroenterological or surgical clinicians) to understand clinician evaluation and treatment approach. Additional questions were used to understand barriers to, and satisfaction with, current multidisciplinary management of patients with CPF. Each question was followed by a list of response options and participants were asked to select all that apply. There were no free-text options except where 'other' was selected, in which case participants were asked to specify. The survey was piloted through cognitive interviews of clinicians with CPF management experience to determine areas of ambiguity and to ensure that all questions were being interpreted as intended. A Consensus-Based Checklist for Reporting of Survey Studies is provided in the online supplemental material.

Case 1: CPF initial case presentation

Part 1

A man aged 38 years complains of 3 weeks of discomfort near his anus, especially while sitting, as well as frequent malodorous discharge on his underwear. He reports being diagnosed with Crohn's disease 5 years ago, at which time he took mesalamine; however, he stopped taking it after about a year, as he felt that his symptoms were controlled through diet modification. He has not had follow-up with a gastroenterologist or a repeat colonoscopy since that time. He admits to mild abdominal pain and diarrhoea over the past several months. He denies any fevers.

Visual inspection of the perianal area is notable for erythema and the opening of a fistulous tract. Digital rectal examination is notable for tenderness and is otherwise unremarkable. There is no fluctuation. You are

unable to appreciate the internal opening of a fistulous tract. His Crohn's disease activity is mild, without symptoms of systemic disease, such as fever, abdominal tenderness or signs of obstruction.

Part 2 (case 1 continued)

The patient is referred to gastroenterology and colorectal surgery. He is started on metronidazole. Pelvic MRI reveals a trans-sphincteric fistula arising from the anal canal and penetrating the internal and external anal sphincters. He undergoes the examination under anaesthesia with seton placement, and findings on the examination are consistent with those identified on MRI. There is no evidence of abscess. Colonoscopy reveals Crohn's disease involvement of the distal ileum and proximal colon. No proctitis is present.

Part 3 (case 1 continued)

Treatment with infliximab is started. Six months later, the patient's symptoms have markedly improved and he no longer notices any drainage from the fistula. He reports intermittent perianal pain and being somewhat bothered by the seton. He denies any ongoing abdominal pain, diarrhoea or other Crohn's symptoms. On examination, the external opening of the fistula tract is decreased in size. Gentle pressure on the area of the fistula tract does not express any fluid. Pelvic MRI demonstrates persistent fistula and inflammatory activity, without evidence of abscess. Infliximab trough level is 3.5 µg/mL. Anti-infliximab antibody testing is negative. He is restarted on an antibiotic.

Case 2: management of recurrent fistulas

A woman aged 35 years with an 8-year history of Crohn's disease presents with perianal pain, swelling and fever. Pelvic MRI reveals a supralelevator fistula arising from the anal canal, penetrating both the internal and external anal sphincters, and forming a 1 cm abscess in the ischio-anal space before coursing to the skin. She undergoes urgent examination under anaesthetic, with abscess drainage and seton placement. She is started on infliximab and antibiotics.

Within the next year, she has two episodes of abscess recurrence for which she returns to the operating room for drainage. 6-Mercaptopurine is added to her regimen, and the dose of infliximab is increased to the maximum recommended dose.

At follow-up, she reports ongoing pain and drainage that interfere with her daily activities. Pressure on the area of the fistula causes discharge of purulent material, although there is no evidence of abscess. Lab testing is negative for antitumor antibodies. Repeat MRI shows ongoing signs of inflammation and a persistent fistula, now with branching and a second internal opening.

Endoscopy and magnetic resonance enterography are consistent with mildly active Crohn's disease without proctitis.

Survey distribution and data collection

To obtain the sample, email addresses of US-practising clinicians were randomly selected from a proprietary database and purchased mailing lists. A quota method of sample collection was used; based on power calculations to generalise results to a national audience, at least 180 gastroenterology clinicians and at least 90 colorectal surgery clinicians were needed for analysis. The survey was distributed in September and October 2020 via email to GEs and CRSs, and nurse practitioners (NPs) and physician assistants (PAs) from these respective specialties. The inclusion criteria stipulated that clinicians must be currently practising in the USA and managing ≥ 1 patient with CPF per month. The online survey system only allowed one response per user in the clinician database, and respondent IP addresses and location data were used to ensure only one response per individual. Survey responses were held in a secure password-protected database and data analysis was blinded with respect to respondent identification. The survey was expected to take approximately 20–25 min to complete, and a monetary incentive (equivalent to US\$50) was offered to clinicians for their participation.

Survey analysis

Descriptive statistical analyses were conducted on key items of the clinician survey and reported as frequencies (number, percentage and SD). Statistical analysis was conducted using SPSS V.27 (IBM, Armonk, New York, USA).

RESULTS

Respondent demographics

The survey was distributed via email to 12 051 HCPs (11 523 with colorectal surgery specialism and 528 with gastroenterology specialism). In total, 5% (544/12 051) entered the survey and 52% (282/544) of these

respondents met the eligibility criteria and completed the survey (survey collection ended once the quota was reached). The 282 respondents included 127 GEs, 63 GE NP/PAs, 78 CRSs and 14 CRS NP/PAs (table 1). GE and CRS respondents had a mean of 21 years in practice (defined as years of practice experience following training), compared with 11 years in practice for GE NP/PAs and 8 years for CRS NP/PAs. On average, GEs saw more patients with CPF each month than did the CRS respondents in the study. GEs, GE NP/PAs and CRSs practised predominantly in community settings (59%–76%), whereas CRS NP/PAs practised in predominantly academic settings (86%). There was a mix of respondents from various practice locations, including urban, suburban and rural practices.

Case 1: CPF initial case presentation

Part 1

When asked how they would evaluate the patient after reading part 1 of the case vignette, a majority (54%–70%) of gastroenterological clinicians (GEs and GE NP/PAs) responded that they would order a pelvic MRI and/or a colonoscopy, whereas CRSs and CRS NP/PAs preferred examination under anaesthesia (62%–79%, table 2). Fewer than half (41%–43%) of the surgical clinicians (CRSs and CRS NP/PAs) responded that they would refer this patient to a GE at this time. Very few HCPs (<2% overall) responded that they would begin medical management at this point without further evaluation.

When asked about the classification/scoring system that they use to evaluate patients, 39% of HCPs overall stated that they did not use any classification system. If a system was used, it varied by specialty. GEs preferred the AGA Classification system¹⁰ (37%) or the Perianal Disease Activity Index¹⁸ (21%), whereas CRSs were more likely to use a faecal incontinence score (38%) or the Parks classification system¹⁹ (27%) (table 2).

Table 1 Demographics of respondents

	Gastroenterologists (n=127)	Gastroenterology NP/PAs (n=63)	Colorectal surgeons (n=78)	Colorectal surgery NP/PAs (n=14)
Years in practice, mean (SD)	21 (8)	11 (7)	21 (11)	8 (8)
Number of patients managed per week, mean (SD)	89 (69)	67 (49)	54 (28)	47 (24)
Number of patients with CPF managed per month, mean (SD)	14 (42)	7 (9)	11 (6)	18 (25)
Practice setting, n (%)				
Academic	30 (24)	22 (35)	32 (41)	12 (86)
Community	97 (76)	41 (65)	46 (59)	2 (14)
Practice location, n (%)				
Urban	65 (51)	28 (44)	39 (50)	12 (86)
Suburban	53 (42)	31 (49)	38 (49)	2 (14)
Rural	9 (7)	4 (6)	1 (1)	0 (0)

CPF, Crohn's perianal fistulas; NP, nurse practitioner; PA, physician assistant; SD, standard deviation.

Table 2 Case 1: evaluation and classification of patient, goals of long-term CPF management and initial management

	Gastroenterologists (n=127)	Gastroenterology NP/PAs (n=63)	Colorectal surgeons (n=78)	Colorectal surgery NP/PAs (n=14)
How would you further evaluate this patient at this time? (Select all that apply), n (%)				
Pelvic MRI	89 (70)	34 (54)	27 (35)	5 (36)
Colonoscopy	75 (59)	41 (65)	43 (55)	7 (50)
Examination under anaesthesia/referral to a colorectal surgeon for examination under anaesthesia*	50 (39)	30 (48)	48 (62)	11 (79)
Referral to gastroenterologist†	–	–	32 (41)	6 (43)
Anoscopy	16 (13)	8 (13)	41 (53)	6 (43)
CT scan	23 (18)	11 (17)	9 (12)	1 (7)
Fistulography	19 (15)	3 (5)	3 (4)	1 (7)
Endoanal ultrasound	11 (9)	5 (8)	5 (6)	0 (0)
Anal manometry	5 (4)	0 (0)	1 (1)	0 (0)
Begin medical management without further evaluation‡	2 (2)	1 (2)	2 (3)	0 (0)
Other§	1 (1)	3 (5)	1 (1)	0 (0)
Which of the following classification and scoring systems do you use in clinical practice to evaluate your patients with CPF? (Select all that apply), n (%)				
None‡	50 (39)	28 (44)	26 (33)	6 (43)
Perianal Disease Activity Index	27 (21)	15 (24)	15 (19)	3 (21)
AGA Technical Review	47 (37)	11 (17)	4 (5)	0 (0)
Faecal incontinence score (eg, Wexner)	9 (7)	6 (10)	30 (38)	3 (21)
Parks	9 (7)	6 (10)	21 (27)	1 (7)
Fistula Drainage Assessment	11 (9)	5 (8)	6 (8)	0 (0)
Cardiff	5 (4)	1 (2)	0 (0)	0 (0)
Anal Disease Activity Index	5 (4)	6 (10)	3 (4)	1 (7)
Pikarsky's Perianal Crohn's Disease Activity Index	4 (3)	1 (2)	4 (5)	1 (7)
Buchmann/Alexander-Williams	3 (2)	1 (2)	0 (0)	0 (0)
Present	0 (0)	1 (2)	0 (0)	0 (0)
St James's University Hospital	0 (0)	2 (3)	1 (1)	2 (14)
Van Assche Score	0 (0)	0 (0)	0 (0)	0 (0)
Other¶	2 (2)	0 (0)	0 (0)	1 (7)
Goals of long-term CPF management (rank 1–5)**				
Improving quality of life	2.63, #2	2.06, #1	1.86, #1	1.36, #1
Achieving fistula healing	2.26, #1	2.56, #2	4.05, #5	4.07, #5
Resolving fistula symptoms	2.87, #4	3.17, #4	2.83, #3	2.86, #2
Avoiding major surgery	2.86, #3	3.13, #3	2.26, #2	3.07, #3
Minimising medication risks and side effects	4.38, #5	4.08, #5	3.82, #4	3.64, #4
Questions following case 1 continuation, part 2				
In addition to the antibiotic, what medical management would you recommend for the patient's fistula at this time? (Select all that apply), n (%)††				
Anti-TNF agent (eg, infliximab, adalimumab)	118 (93)	58 (92)		
Thiopurine (eg, azathioprine, 6-mercaptopurine)	15 (12)	11 (17)		
5-Aminosalicylate (eg, sulfasalazine, mesalamine)	11 (9)	9 (14)		
Other monoclonal antibody (eg, vedolizumab, ustekinumab)	11 (9)	2 (3)		
Antimetabolite (eg, methotrexate)	8 (6)	1 (2)		
Another antibiotic	6 (5)	7 (11)		
Corticosteroid	5 (4)	3 (5)		
Calcineurin inhibitor (eg, tacrolimus, ciclosporin)	2 (2)	0 (0)		
Defer medical therapy at this time	2 (2)	0 (0)		

Continued

Table 2 Continued

	Gastroenterologists (n=127)	Gastroenterology NP/PAs (n=63)	Colorectal surgeons (n=78)	Colorectal surgery NP/PAs (n=14)
Other	0 (0)	2 (3)		
What management approach would you recommend for this patient's fistula? (Select one)‡‡, n (%)				
Seton placement only			3 (4)	0 (0)
Seton placement plus medical therapy			55 (71)	11 (79)
Seton placement as a bridge to definitive surgical therapy	–	–	13 (17)	3 (21)
Medical management only			7 (9)	0 (0)
(If seton selected above) What best describes your approach to seton removal? (Select one)†, n (%)§§				
Remove after specified period of time			3 (5)	0 (0)
Remove after induction of medical therapy			14 (24)	2 (18)
Remove when there is evidence of fistula healing	–	–	25 (43)	5 (45)
Leave in place indefinitely			13 (22)	2 (18)
Other			3 (5)	2 (18)
Rate the importance of each of the following in assessing the patient's response to treatment¶¶				
The patient's report of symptoms	4.4	4.4	4	4.5
Clinical examination	4.3	4.4	4.2	4.6
Imaging	4.2	4.4	2.9	3.7
Questions following case 1 continuation, part 3				
After patient progression, which describes the medical management that you would expect/recommend at this time? (Select only one), n (%)				
Continue current medical therapy	29 (23)	10 (16)	55 (71)	7 (50)
Increase the dose of infliximab	84 (66)	46 (73)	16 (21)	6 (43)
Discontinue infliximab and begin other medication	3 (2)	2 (3)	2 (3)	0 (0)
Add other medications to the current regimen	8 (6)	4 (6)	4 (5)	1 (7)
Other	3 (2)	1 (2)	1 (1)	0 (0)
After patient progression, which best describes the surgical intervention that you would expect/recommend at this time? (Select only one), n (%)***				
Continuation of the seton	76 (60)	29 (46)	30 (38)	9 (64)
Seton removal	30 (24)	7 (11)	32 (41)	2 (14)
Proceed with surgery	9 (7)	15 (24)	13 (17)	3 (21)
Refer for enrolment in a clinical trial for stem cell therapy	6 (5)	5 (8)	3 (4)	0 (0)
Other	1 (1)	2 (3)	0 (0)	0 (0)
Unsure	5 (4)	5 (8)	0 (0)	0 (0)

*Gastroenterologists were given the option to refer to a surgeon for examination under anaesthesia.

†Option for colorectal surgeons/colorectal surgery NP/PAs only.

‡Exclusive answer option.

§Other included stool studies, laboratory work, magnetic resonance enterography and begin/discuss treatment.

¶Other included defer to surgeon (written in by surgical NP/PA) and ASCRS guidelines.

**Numbers shown indicate mean of ranked goal (1 through 5, with 1 being the most important of these goals and 5 being the least important), followed by ranked importance (#) by specialist group.

††Gastroenterology clinicians only were given this question.

‡‡Colorectal surgery clinicians only were given this question.

§§Percentages were determined from the total number of respondents who answered the above question as 'seton placement only' or 'seton placement plus medical therapy' (colorectal surgeons, n=58, colorectal surgery NP/PAs, n=11).

¶¶Mean of importance rating scale is presented, in which 1=not important, 2=slightly important, 3=moderately important, 4=very important, 5=extremely important.

***Discrepancies in summed percentages are due to rounding of decimal places.

AGA, American Gastroenterological Association; ASCRS, American Society of Colon and Rectal Surgeons; CPF, Crohn's perianal fistulas; NP, nurse practitioner; PA, physician assistant; TNF, tumour necrosis factor.

All HCPs highly rated the importance of controlling Crohn's disease activity in the patient, with slightly lower importance being attributed to controlling CPF symptoms (figure 1). The rating of long-term CPF

management differed by specialty (table 2). Quality of life was the top-rated goal for all clinicians except GEs, who ranked quality of life as the second highest-rated goal and 'achieving fistula healing' as the top goal (ranked second

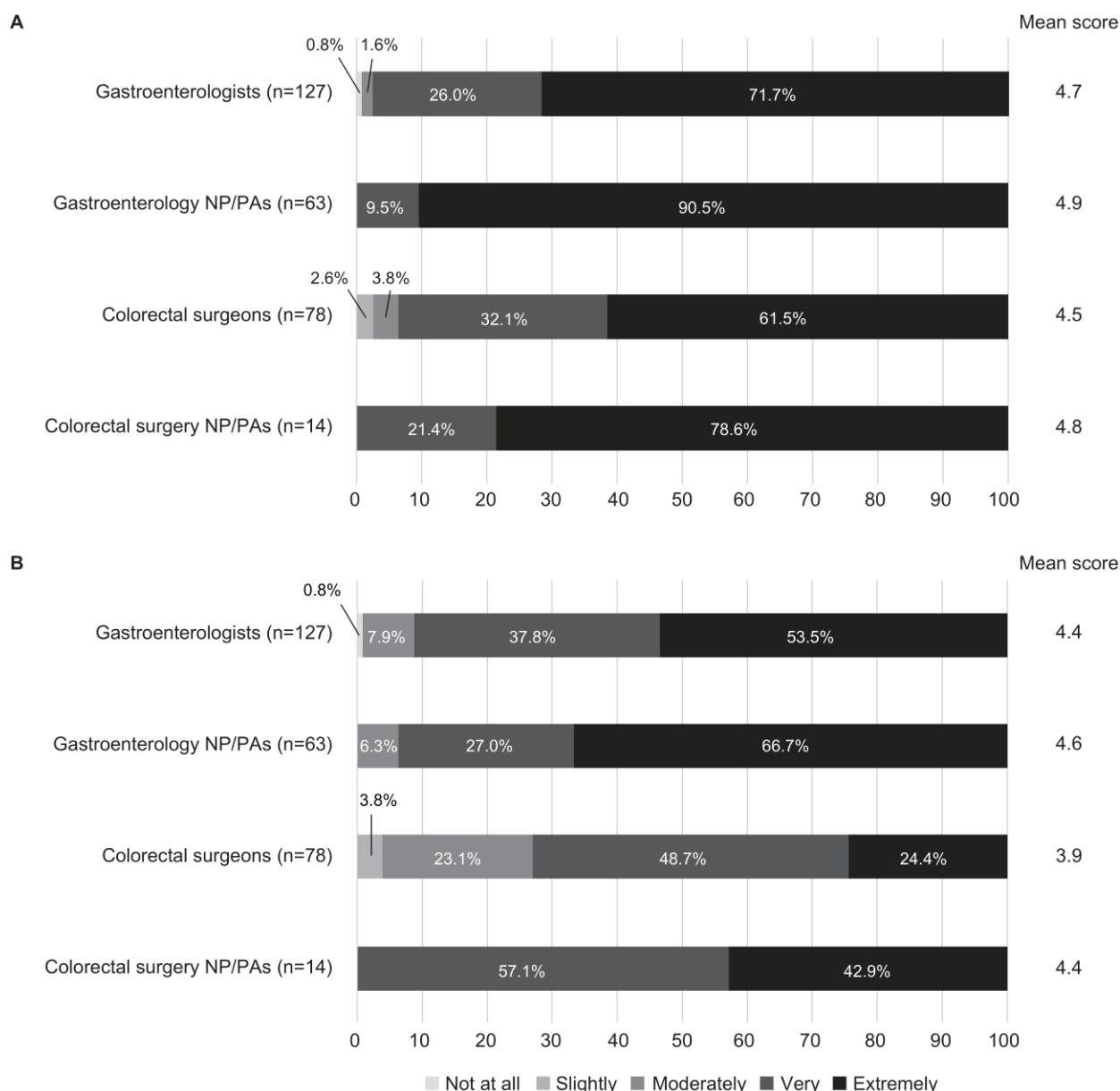


Figure 1 Importance of controlling Crohn's disease activity (A) and CPF symptoms (B) as rated by various HCPs in response to case 1. Importance was scored on a scale of 1–5 (1=no importance at all, 2=slightly important, 3=moderately important, 4=very important, 5=extremely important). Discrepancies in summed percentages are due to rounding of decimal places. CPF, Crohn's perianal fistulas; HCP, healthcare professional; NP, nurse practitioner; PA, physician assistant.

most important goal by GE NP/PAs and ranked lowest by surgical clinicians).

Part 2

When the gastroenterological clinicians were then asked about initial medical management, almost all (>90%) responded that they would recommend an antitumour necrosis factor (anti-TNF) agent for this patient (table 2). Most surgical clinicians (>70%) recognised the need for medical therapy alongside seton placement in their approach to therapy. Of the surgical clinicians who reported that they would place a seton, there was no majority response for the approach to seton removal. Although the most common response (43%–45%) was to remove the seton when there was evidence of fistula

healing, other preferences included removal after induction of medical therapy (18%–24%) or leaving it in indefinitely (18%–22%) (table 2). When asked how important certain factors were in assessing a patient's response to treatment, patient symptoms and clinical examination were seen as universally important across all specialty groups. However, imaging was rated as less important by CRSs and CRS NP/PAs than by gastroenterology clinicians (table 2).

Part 3

At this point, the clinicians were asked what they would do and what approach to further treatment they would expect to be followed (table 2). Most gastroenterological clinicians (66%–73%) reported that they would increase

Table 3 Case 2: management of a patient with recurrent fistulas

	Gastroenterologists (n=127)	Gastroenterology NP/PAs (n=63)	Colorectal surgeons (n=78)	Colorectal surgery NP/ PAs (n=14)
What medical management would you recommend/expect for this patient's fistula now? (Select all that apply), n (%)				
Continue current medication regimen	10 (8)	3 (5)	19 (24)	3 (21)
A different anti-TNF agent (eg, adalimumab)	38 (30)	32 (51)	38 (49)	5 (36)
5-Aminosalicylate (eg, sulfasalazine, mesalamine)	4 (3)	5 (8)	–	–
Antimetabolite (eg, methotrexate)	10 (8)	1 (2)	–	–
Calcineurin inhibitor (eg, tacrolimus, ciclosporin)	9 (7)	2 (3)	–	–
Other monoclonal antibody (eg, vedolizumab, ustekinumab)	73 (57)	28 (44)	–	–
Thiopurine (eg, azathioprine, 6-mercaptopurine)	23 (18)	10 (16)	–	–
Other	6 (5)	3 (5)	1 (1)	1 (7)
Change or add a medication from another class (CRSs only)	–	–	20 (26)	5 (36)
Which surgical intervention would you recommend/expect at this time? (Select one), n (%)				
Continue seton with continued abscess drainages as needed	35 (28)	6 (10)	32 (41)	8 (57)
Proceed with surgery (eg, advancement flap, fistula tract ligation, faecal diversion)	56 (44)	46 (73)	21 (27)	5 (36)
Refer for enrolment in a clinical trial for stem cell therapy	25 (20)	6 (10)	13 (17)	1 (7)
Other	0 (0)	1 (2)	6 (8)	0 (0)
Unsure	11 (9)	4 (6)	6 (8)	0 (0)

CRS, colorectal surgeon; NP, nurse practitioner; PA, physician assistant; TNF, tumour necrosis factor.

the infliximab dose, whereas surgical clinicians were less likely to do so (21%–43%). Instead, 71% of CRSs and 50% of CRS NP/PAs would expect to continue current medical therapy. As for surgical management, there was little consensus on the next best step; all clinicians were divided in their recommendation/expectation for seton continuation, seton removal or other surgical options.

Case 2: management of recurrent fistulas

When asked how to proceed with medical and surgical management of this patient, responses varied among gastroenterological and colorectal surgery clinicians (table 3). Medically, most chose switching to another anti-TNF/different monoclonal antibody or switching to/adding a medication from a different drug class. Surgically, 44% of GEs and 73% of GE NP/PAs expected that the patient would proceed to surgery (fistulotomy was most expected/recommended among GEs and GE NP/PAs (52%–55%); diverting stoma was the most common option among CRSs and CRS NP/PAs (33%–60%) as well as advancement flap for CRSs (33%) but not CRS NP/PAs (0%)), whereas 41% of CRSs and 57% of CRS NP/PAs would recommend continuing the seton with abscess drainages as needed.

Multidisciplinary management

Respondents were asked how they best collaborate with clinicians of other specialties (ie, GEs were asked about CRSs, and vice versa). Overall, there was little consensus on how collaboration occurs (table 4). Some clinicians preferred working independently with little direct consultation, determining their own role and deferring

to the other specialist to determine theirs. Others would attempt to communicate plans to the other specialist, adjusting treatment as necessary or would meet to agree on a management plan collaboratively. In general, satisfaction with current communication and coordination of care was mediocre. Approximately one-third of GEs, GE NP/PAs and CRSs were 'very satisfied' or 'extremely satisfied' with the current processes. CRS NP/PAs had a more positive outlook; 71% were 'very satisfied' or 'extremely satisfied'. When provided with examples of potential barriers to effective multidisciplinary management, such as lack of access to specialists, lack of communication of treatment plans and logistical difficulty of coordinating care, respondents did not rate these to be any more than moderately significant challenges (table 4).

Impact of COVID-19

The survey was launched in September 2020, approximately 6 months after initial reports of COVID-19 in the USA. When asked if COVID-19 was affecting the management of their patients with CPF, more CRSs (27%) noted an impact than any other group; this was followed by GE NP/PAs (22%) and GEs (17%), whereas CRS NP/PAs noted lower impact (7%). Key effects of COVID-19 provided by respondents were categorised into themes. Gastroenterological clinicians indicated that the pandemic was creating patient reluctance to attend appointments, delays in referrals and preference for telehealth. Colorectal surgery clinicians indicated delays in surgery, patient reluctance and a need for testing prior to surgery.

Table 4 Multidisciplinary management

	Gastroenterologists (n=127)	Gastroenterology NP/PAs (n=63)	Colorectal surgeons (n=78)	Colorectal surgery NP/ PAs (n=14)
Which of the following best describes how you would collaborate with the (colorectal surgeon/gastroenterologist) to determine a treatment plan? (Select one), n (%)				
I would determine my role while deferring to the (surgeon/gastroenterologist) for their role*	27 (21)	27 (43)	21 (27)	5 (36)
I would communicate my plans with the (surgeon/gastroenterologist) and might adjust my treatment based on their recommendations	47 (37)	16 (25)	21 (27)	5 (36)
I would meet with the (surgeon/gastroenterologist) to agree on a management plan collaboratively	53 (42)	20 (32)	35 (45)	4 (29)
Other	0 (0)	0 (0)	1 (1)	0 (0)
How satisfied are you with the current processes and methods of communication and coordination of care in your patients with complex perianal fistula? (Select one), n (%)				
Not at all satisfied	12 (9)	3 (5)	2 (3)	0 (0)
Slightly satisfied	23 (18)	13 (21)	9 (12)	0 (0)
Moderately satisfied	55 (43)	27 (43)	40 (51)	4 (29)
Very satisfied	32 (25)	15 (24)	23 (29)	7 (50)
Extremely satisfied	5 (4)	3 (5)	4 (5)	3 (21)
NA/Unsure	0 (0)	2 (3)	0 (0)	0 (0)
How significant are the following barriers to effective multidisciplinary management of your patients with CPF?†				
Lack of access to specialists who manage CPF	3	2.9	2.5	3.2
Lack of communication of treatment plans between specialists	2.8	2.8	2.5	3.1
Logistical difficulty in coordinating care between multiple specialists or centres	2.9	2.8	2.4	3.1
*For gastroenterologists, "I would determine medical management, while deferring to the surgeon for surgical management", and vice versa for colorectal surgeons.				
†Mean of significance rating scale is presented, in which 1=not at all significant, 2=slightly significant, 3=moderately significant, 4=very significant, 5=extremely significant. Respondents indicating NA/Unsure were removed from the mean calculation.				
CPF, Crohn's perianal fistulas; NA, not applicable; NP, nurse practitioner; PA, physician assistant.				

Educational needs

Respondents were asked to list topics related to CPF that they would be interested in learning about in future educational programmes; responses were classified by theme. Top themes for specialists included information on new and emerging therapies, information on current therapy/guidelines for CPF management, surgical options and criteria, managing complex patients, imaging, psychosocial care/quality of life, alternative treatment approaches and when to refer to another specialist.

DISCUSSION

Based on the demographics, respondents in this study are representative of clinicians managing patients with CPF in the USA. The survey results reveal a lack of consensus on the diagnosis and management of CPF in the USA, which is reflective of the differences between the various US CPF guidelines.^{10–12}

Recommendations from the AGA and the American College of Gastroenterology (ACG), typically used by GEs, generally focus on the role of medical therapy in CPF management,^{10 12} although more recently, the AGA has

worked with a consortium of stakeholders to consider the optimal management of CPF.¹⁶ This consortium emphasised the need for a multidisciplinary approach.¹⁶ The American Society of Colon and Rectal Surgeons (ASCRS) guidelines, typically used by CRSs, also state that management typically involves a multidisciplinary approach; the mainstay of medical management is biologic therapy, which is often combined at least initially with a draining seton, and use of definitive fistula surgery in selected patients with CPF must be individualised.¹¹ In the current study, almost all gastroenterology clinicians responded that they would recommend an anti-TNF agent as initial medical management for the patient described in case 1, and the majority of surgical clinicians recognised the need for medical therapy alongside seton placement in their approach to therapy. The ACG guidelines also recommend placement of setons in adult patients with CPF to increase the efficacy of the anti-TNF, infliximab.¹² At initial presentation (case 1), 39%–48% of gastroenterological clinicians responded that they would refer the patient to a CRS for examination under anaesthesia and, in response to the case continuation (part 2) questions, 71%–79% of surgical clinicians responded that

they would recommend seton placement plus medical therapy at that time. Therefore, the results of the current study would suggest that clinicians are broadly following their respective societies' recommendations.

Potentially reflective of the different focuses of the GE and surgical recommendations/guidelines,^{10 12 20} there was generally little agreement across HCPs in the current study on the approaches to, or expectations for, the surgical management of CPF. This included approaches to seton removal and surgical interventions for either patient progression after initial presentation (case 1) or recurrent fistulas (case 2). The 2020 ASCRS guidelines recommend that draining setons are useful in the multimodal therapy of CPF and may also be used for long-term disease control.¹¹ There are no recommendations for the timing of seton removal within the ASCRS guidelines. The lack of clear guidance on when to remove a seton may affect patient outcomes, and there are mixed reports on the long-term effectiveness of seton use.^{21 22} Although a recent North American study found that long-term (median follow-up: 23 months) indwelling seton had improvement and recurrence rates in patients with Crohn's disease that were comparable to those of definitive surgery,²² a single-institution, retrospective, US cohort study (n=23) found that only 39% of patients had a clinical response to draining seton for complex CPF at 12 months (the remaining patients developed recurrent abscess/fistula or required faecal diversion despite biological therapy).²¹ Furthermore, the type of surgical intervention varies by the type of fistula, with CPF typically being less responsive than cryptoglandular fistulas, and with choices being limited in patients with proctitis or active inflammation.¹³

Improved quality of life for patients with CPF was selected as the top long-term treatment goal among all HCP types, except GEs who selected this as the second most important long-term goal after fistula healing. This is an important priority difference to note between HCPs, because improved quality of life has been reported to be a high priority for patients with CPF and should be considered by the whole multidisciplinary team involved in the management of CPF.²³

It is notable that definitions of simple versus complex fistulas differ between gastroenterological and surgical guidelines. ASCRS guidelines describe fistulas as complex according to location, recurrence, branching or association with inflammatory bowel disease, noting that CPF seems to result from penetrating inflammation in patients with Crohn's disease.¹¹ The AGA classification system for complex fistula may include high fistula, multiple external openings and the presence of pain or flatulence suggesting a perianal abscess; examination under anaesthesia and imaging may be required to accurately classify some patients.²⁴ In keeping with this AGA classification, in the current study, a majority of gastroenterological clinicians responded that they would order a pelvic MRI and/or a colonoscopy after reading the patient case vignette on initial CPF presentation (case 1).

The variations in responses between gastroenterology and colorectal surgery practitioners in this survey, and the individual approaches taken by GE and CRS society guidelines, suggest the need for a combined guideline from the US GE, CRS and radiology societies. A combined CPF management guideline may provide a more holistic view of CPF treatment and increase understanding of CPF management and of how to enhance multidisciplinary care.

The survey also sought to assess whether the ongoing COVID-19 pandemic at the time of the study was affecting the management of patients with CPF. Fewer than one-third of HCPs reported that patient management was affected; for those who did report an effect on management, patient reluctance to attend appointments, delays in referrals/surgeries and preference for telehealth were some of the impacts described. The COVID-19 pandemic may have more long-lasting impacts on practice than are shown in this survey because some facilities stopped or reduced the number of in-person visits and/or access to endoscopy or surgery suites in different locations as cases increased or waned over the past 2 years. Although telemedicine can be used for some patient visits, the ability to examine the patient physically is critical for CPF.

Based on the survey results, several recommendations can be made for the development of future CPF educational initiatives. Education related to evidence-based approaches for diagnosis and management is needed for CPF multidisciplinary team members, especially because there seems to be a gap in understanding among specialties and about what to expect from each specialty. Identified educational needs included information on new and emerging medical and surgical therapies, information on current therapy/guidelines for CPF management, surgical options and criteria, managing complex patients, imaging, psychosocial factors, care/quality of life, alternative treatment approaches and when to refer to another specialist. Further research should be conducted in an expanded multidisciplinary team to include the experiences of other physicians who see patients with CPF, psychologists, social workers and dietitians, and their needs for further CPF education. Patient and caregiver perceptions should also be considered and understood by those who treat/manage patients with CPF, to help to provide a more rounded view of educational needs across the disease/therapy area.²⁵

It is acknowledged that this study has certain limitations, primarily the use of hypothetical cases as a proxy for clinical practice. Although case vignettes are a valid and comprehensive method of measuring actual clinical practice, we recognise that a social-desirability bias may exist to answer questions in a survey based on a perception that one choice will be more favourably viewed than another. Given that this survey was based on two specific hypothetical cases and the selection of predefined responses without a free-text option, nuances involved in decision-making (eg, individual baseline characteristics and patient goals) were not captured and could

contribute to the wide variation in surgical management observed. Furthermore, in case 2 (recurrent CPF), rationalisation or staged simplification of the fistula tract (eg, creation of a single internal opening) was not presented as an option, which may have influenced the results regarding selected surgical treatment options. It should also be noted that the global applicability of these data could be limited because they were captured for US-based clinicians. However, similar results have been found in surveys of UK-based clinicians.^{26 27} Additionally, as with most surveys, selection bias was possible because recipients from a particular demographic group and/or who possess a specific set of characteristics may be more likely to respond to the survey. The survey used a quota approach to data collection; hence, all respondents who met the inclusion criteria were asked to complete the survey until the quota for data collection was reached.

This study highlights the need for increased education and combined specialty guidelines on CPF diagnosis and management for US HCPs. Improved communication and collaboration between GE and CRS clinicians are required to support the development of a consistent treatment approach with the aim of improving patient outcomes.

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Patient consent for publication Not applicable.

Ethics approval The protocol was determined to be exempt from review by the Western Institutional Review Board (Puyallup, Washington) under 45 CFR § 46.104(d) (2), as the research involved only interactions using educational tests, survey procedures, interview procedures or observations of public behaviour. Identifying information, used solely for the purpose of providing honoraria to respondents, was removed prior to analysis. Participants gave informed consent before taking part in the study.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available on reasonable request. Data sets supporting the results from this study are available from the corresponding author on reasonable request. The data sets will be provided after deidentification, in compliance with applicable privacy laws, data protection and requirements for consent and anonymisation.

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