

Planning management for complex colorectal polyps: a qualitative assessment of factors influencing decision-making among colonoscopists

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ABSTRACT

Objective Endoscopic therapy is the recommended primary treatment for most complex colorectal polyps, but high colonic resection rates are reported. The aim of this qualitative study was to understand and compare between specialities, the clinical and non-clinical factors influencing decision making when planning management.

Design Semi-structured interviews were performed among colonoscopists across the UK. Interviews were conducted virtually and transcribed verbatim. Complex polyps were defined as lesions requiring further management planning rather than those treatable at the time of endoscopy. A thematic analysis was performed. Findings were coded to identify themes and reported narratively.

Results Twenty colonoscopists were interviewed. Four major themes were identified including gathering information regarding the patient and their polyp, aids to decision making, barriers in achieving optimal management and improving services. Participants advocated endoscopic management where possible. Factors such as younger age, suspicion of malignancy, right colon or difficult polyp location lead towards surgical intervention and were similar between surgical and medical specialities. Availability of expertise, timely endoscopy and challenges in referral pathways were reported barriers to optimal management. Experiences of team decision-making strategies were positive and advocated in improving complex polyp management. Recommendations based on these findings to improve complex polyp management are provided.

Conclusion The increasing recognition of complex colorectal polyps requires consistency in decision making and access to a full range of treatment options. Colonoscopists advocated the availability of clinical expertise, timely treatment and education in avoiding surgical intervention and providing good patient outcomes. Team decision-making strategies for complex polyps may provide an opportunity to coordinate and improve these issues.

INTRODUCTION

Colorectal polyps are precursors to colorectal cancer development.¹ Their morphological spectrum is considerable² and in larger or

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ The treatment of complex colorectal polyps is variable but the underlying factors for this at an individual clinician level are not understood.

WHAT THIS STUDY ADDS

⇒ The factors identified were not only clinical, and endoscopists advocated availability of expertise, timely treatment and education in avoiding surgical intervention and providing good patient outcomes.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Recommendations to improve practice are provided and the use, access to and monitoring of team decision-making strategies for complex polyps are advocated on a national level.

more complex lesions, the decision-making and technical challenges of treatment are significant.

Endoscopic treatment is recommended first line for most polyps.³ There remains considerable variability in the management of complex lesions^{4,5} with overutilisation of colonic resection reported.^{6,7} Insight into the rationale behind the choice of management is limited.^{8,9} There is wide variability in polyps larger than 20mm referred for surgery (0%–46.6%) with advanced histology or site within the colon often resulting in a recommendation of colonic resection.¹⁰ Evidence is conflicting regarding whether surgeons^{11,12} or gastroenterologists¹³ are more likely to recommend surgery. Surgeons may still recommend resection despite correctly identifying a polyp as benign,¹² suggesting service-related factors may also be influential. The use of team approaches to decision-making may reduce the utilisation of colonic resection,¹⁴ but these are not available in all centres. Shared decision-making should also



be considered, with importance demonstrated regarding the management of malignant polyps.¹⁵ Understanding these factors may improve patient care, service provision and reduce surgical intervention.

The aim of this qualitative study was to explore the clinical and non-clinical factors impacting decision-making regarding complex colorectal polyp management. Comparisons were made in the factors favouring surgical intervention and attitudes towards team decision-making strategies between specialities.

METHODS

This was a qualitative study using thematic analysis and performed in line with the consolidated criteria for reporting qualitative research (COREQ).¹⁶

Recruitment

Advertisement and dissemination were by email through professional associations and research collaborations of the study team. Recruitment from NHS trusts in the UK lasted from May 2021 to September 2021. A provisional recruitment target of 15–20 participants was based on qualitative study sample sizes and information power¹⁷ to achieve the aims. Plans were made to extend recruitment in case the research team felt that data saturation had not been reached by this number.

Inclusion and exclusion criteria

Practicing colonoscopists including colorectal surgeons, gastroenterologists and clinical endoscopists (nurses and non-medical practitioners) involved in decision-making for managing complex colorectal polyps were eligible. Exclusions included incomplete interviews or withdrawal of consent. Consent to participate in the study and to record the transcript was confirmed at the start of the interview.

Data collection

The semi-structured interview was recorded via Zoom (Zoom V.5.7.6). The interview focused on decision-making for complex colorectal polyps. These were defined for the participants as lesions requiring further management planning rather than those treatable at the time of endoscopy due to size, difficult access or other concerns regarding morphology or appearance. Discussions were guided by an interview guidance proforma to cover three key topics including clinical factors, non-clinical factors and any other influences (online supplemental material 1). The interview allowed free discussion to develop points of interest. A pilot interview to assess structure and acceptability was performed and included in the analysis. All were conducted by the lead author after completion of training in qualitative interviewing and analysis. Audio recordings of the interviews were securely stored and transcribed verbatim by a transcription company into text.

Data analysis

NVivo qualitative data analysis software V.12 was used for storing, coding and organisation of transcripts

and qualitative data. Analysis was performed based on literature regarding thematic analysis.^{16 18} Coding was completed by the lead author. Familiarisation with the information was performed by reading the transcripts repeatedly to generate initial codes of the topics and describe the data. The codes were developed and refined during analysis and classified into major themes and subthemes. The themes were defined, and a narrative description was performed with quotations. Observation of the differences in the factors favouring surgical intervention between specialty and attitudes towards team decision-making strategies was performed.

Ethics and peer review

A favourable ethical opinion was given by Cardiff University School of Medicine Research Ethics Committee (online supplemental material 2).

RESULTS

Twenty participants were recruited from 14 trusts across the UK. Email invitations were sent to 49 individuals. There were no responses from 16 by the close of the recruitment. Reasons for those responding but not participating included having insufficient time (n=10) or not being eligible (n=3).

An overview of participant characteristics is shown in table 1. The interview length ranged from 12 to 29 min. The identified themes are shown in table 2.

Thematic analysis of interviews

Gathering information regarding the patient and their polyp

The first major theme was the need to assess the patient and their polyp. Size, morphology, surface appearance and pit pattern were frequently discussed parameters. All clinicians discussed that decisions made should consider age, fitness, frailty, comorbidities, medication and performance status.

Risk of polyp malignancy

Features considered likely to be indicative of malignancy were depression, tethering, ulceration, suspicious pit pattern or high-grade dysplasia. Several observed that biopsies could potentially mislead, and visual assessment should predominately guide management. A high suspicion of cancer would lead the majority to recommend surgical resection. For some, a lesion with possible cancer could be managed endoscopically depending on the patient and the chance of complete removal.

I do remove polyps that I think have got cancer, but I always tattoo them. If I think I can get a clear margin of resection or resect through a normal stalk, I do remove them endoscopically. (Participant 14—gastroenterologist)

The approach towards polyps with cancer after treatment was similar with the automatic need for a complete resection not being deemed necessary. Participants stated this decision should be made individually considering

Table 1 Summary of participant characteristics

Participant	Specialty	Hospital	Complex polyp team decision-making availability
Participant 1	Surgery	Tertiary/teaching	On site
Participant 2	Gastroenterology	Tertiary/teaching	On site
Participant 3	Gastroenterology	Tertiary/teaching	On site
Participant 4	Surgery	District general	On site
Participant 5	Gastroenterology	District general	No access
Participant 6	Surgery	District general	No access
Participant 7	Gastroenterology	District general	No access
Participant 8	Surgery	District general	No access
Participant 9	Surgery	District general	Separate site
Participant 10	Surgery	District general	No access
Participant 11	Surgery	District general	No access
Participant 12	Gastroenterology	District general	On site
Participant 13	Gastroenterology	Tertiary/teaching	On site
Participant 14	Gastroenterology	District general	No access
Participant 15	Surgery	District general	On site
Participant 16	Nurse endoscopist	District general	Separate site
Participant 17	Nurse endoscopist	District general	On site
Participant 18	Gastroenterology	Tertiary/teaching	On site
Participant 19	Gastroenterology	Tertiary/teaching	On site
Participant 20	Gastroenterology	Tertiary/teaching	On site

factors such as staging, histological findings, genetics and comorbidities. There was consensus towards surveillance in low-risk lesions.

I remember patients who'd have a tiny little polyp cancer incidentally found, and they would automatically have a bowel resection. Whereas now I think we are moving along. There are more studies looking at patients and tracking their pathway that have been through conservative management. (Participant 17—nurse endoscopist)

Chance of achieving complete and safe endoscopic resection

Endoscopic treatment was widely considered to be the first-line management approach where possible and the likelihood of complete and safe removal was key to decision-making. Good access with a stable scope position were frequently mentioned requirements. Polyps located over folds or within pathology such as diverticular disease swayed management towards surgery. Right-sided polyps were often discussed as a reason to favour colonic resection. Justification for this included an increased

Table 2 Summary of major and minor themes for complex polyp decision-making identified from participant interviews

Major theme	Sub-themes
1. Gathering information regarding the patients and their polyp	1.1 Risk of polyp malignancy 1.2 Chance of achieving complete and safe endoscopic resection 1.3 Influence of age and comorbidities 1.4 Burden of treatment on the patient
2. Aids to decision-making processes	2.1 Opinions of colleagues and complex polyp team decision-making strategies 2.2 Shared decision-making with patient
3. Barriers in achieving optimal management	3.1 Challenges of complex polyp team decision-making strategies 3.2 Endoscopy service provision 3.3 Referral to other sites for expertise
4. Improving services	4.1 Improving decision-making pathways 4.2 Education and training



perforation risk and challenging access to the appendix orifice or ileocaecal valve lesions.

Particularly if it's a proximal right-sided lesion where the bowel wall is a bit thinner, or it's close to the appendix or a difficult location. I think that in those cases if the patient is fit and well probably the risks of undergoing a lap right hemi aren't significantly greater than the risk of having a difficult polypectomy in a thin bit of bowel. (Participant 6—surgeon)

Influence of age and comorbidities

All clinicians discussed the importance of patient assessment with an awareness that intervention may be inappropriate in some. Poor quality of life and short life expectancy were reasons to direct towards conservative management.

We often have discussions with other services like cardiology or elderly care because we want to know what the patient's prognosis is from their other comorbidities rather than jump in with two feet to take off this 2cm polyp that may never cause them any harm. (Participant 16—nurse endoscopist)

Younger patients with few comorbidities were more likely to be offered surgery, especially for challenging right-sided lesions. The rationale was the reduction in surveillance requirements and avoidance of uncertainty if a cancer was identified. The identification of multiple polyps, other bowel pathology and genetic influences led some to consider colonic resection. Medications including steroids and anticoagulants were concerning for some in considering endoscopic management.

Burden of treatment on the patient

The burden of endoscopic management on patients was frequently discussed. Poorly tolerated endoscopic examinations including the bowel preparation would lead clinicians to consider other management including surgical options or surveillance if the patient was unfit for operative intervention. The impact of long-term consequences of endoscopic treatment was also considered. Stenosis or recurrence in extremely large or circumferential lesions was discussed by some clinicians as a reason to advocate surgery in those fit enough. Attitudes towards managing recurrent lesions were variable. Some felt that further endoscopy to clear residual or recurrent disease was acceptable. Others were more likely to seek definitive treatment, especially in multiple recurrences. For most, they felt it was acceptable for the patient to undergo surveillance and avoid surgery, but this needed to be based on appropriate discussions with them.

If there's the option of managing endoscopically and avoiding an operation, in my experience most of them are accepting of further surveillance colonoscopies. (Participant 9—surgeon)

The specific challenges posed and the burden of treatment on patients for rectal lesions were recognised. The importance of techniques such as trans-anal and endoscopic submucosal dissection procedures were highlighted to preserve the rectum and avoid a stoma.

Aids to decision-making processes

Participants described the involvement of patients and colleagues as important influencers on their management strategies.

Opinions of colleagues and complex polyp team decision-making strategies

Most participants had access to complex polyp team decision-making meetings also known as multidisciplinary teams (MDTs), but this varied between local or regional sites. Their effectiveness was generally seen as positive with benefits in the range of management options and avoidance of surgery.

Clinicians felt team meetings were educational and developed confidence and understanding of complex polyp management. Surgeons involved were observed to be more likely to recommend endoscopy and enabled communication between clinicians, management planning and tracking of cases.

I feel almost very comfortable I've got that (MDT) around me. It's quite secure and I think I'd find life a little bit more vulnerable and scarier if I had to make decisions myself. (Participant 3—gastroenterologist)

Shared decision-making with the patient

All participants acknowledged the need for shared decision-making. References were made to informed consent, written information and counselling clinics. The challenges of explaining the complexities of different management strategies were stated by several participants. One described the use of joint patient clinics involving surgeons and gastroenterologists. Another felt it was good practice to represent patients' wishes as part of the complex polyp team decision-making process. Many clinicians observed that patients were largely guided by their advice, but it was also observed that the specialty of the involved clinician could impact this.

Let's say if they go to see a surgical consultant you can easily convince them to do laparoscopic intervention whereas if they come to see me, they can get swayed. (Participant 12—gastroenterologist)

Although patients seemed to accept endoscopic intervention, there were a few exceptions. Poor experience of endoscopy and the need to travel elsewhere were factors thought to deter patients, but other participants did not perceive this as an issue in decision-making. Patient awareness regarding surveillance and the risk of recurrence was considered important.

Barriers in achieving optimal management

Participants observed challenges in optimal management. Access to timely endoscopy, poor technology and barriers for referrals were common issues.

Challenges of complex polyp team decision-making strategies

Several discussed challenges to their team decision-making service. Increasing referrals, meeting frequency and the unavailability of participants were explanations for delaying decision-making. Some participants felt their meeting would benefit from additional expertise such as pathology, or administrative support.

The complex rectal lesion MDT is probably the most challenged pathway in the trust because we have quite long waits. (Participant 15—surgeon)

Several observed that good decision-making was dependent on the quality of referral information including patient assessment, polyp description and photo or video documentation. The availability of expertise at the meeting could also affect the outcome. Those with no availability of team decision-making strategies felt patients would benefit from this service. Difficulties were reported when referring to another site. Limiting referrals or attempting alternative treatment to avoid overburdening the system was described.

Endoscopy service provision

The COVID-19 pandemic created delays in diagnostics, therapeutics and surveillance for complex polyps with redeployment, cancellations and employee absences creating service pressures. The shortage of available lists, endoscopy capacity and the lack of endoscopists performing complex polypectomy were frequently discussed.

Some observed long waits due to limited advanced endoscopy expertise or insufficient lists resulting in polyp progression to endoscopically unresectable or even malignant lesions. Complex polyp treatment was difficult to prioritise in the absence of waiting targets.

The problem is he is one individual and there have been a few occasions where treatment has been delayed and by the time he has seen those patients he had said, sorry it's not suitable for EMR this is cancer. (Participant 10—surgeon)

The optical assessment was seen as crucial to informed decision-making. Individuals described technological problems in recording photos or videos and resulting in repeat procedures which created a further burden on both the patient and the service.

Referral to other sites for expertise

Individuals at sites without expertise such as advanced endoscopy or trans-anal surgery would have to refer elsewhere. Experiences in providing care across two sites were often challenged with delays in patient assessment and feedback. Logistics, communication and tracking issues

were provided as explanations and created concerns regarding responsibility and continuity of care.

Some would rely on informal discussions with colleagues and goodwill in the absence of established pathways. For some, the referral experience was positive with good communication and timely treatment, but poor awareness of available services was also reported.

It wasn't until I did a little bit of digging around that we are paying for this, and we could use this service more than we had done. (Participant 6—surgeon)

Improving services

Participants frequently commented on strategies to improve decision-making and management.

Improving decision-making pathways

With increasing referrals, more frequent polyp team meetings had been introduced by some sites. Several sites thought that improved referral pathways had enhanced patient care. Good clinical information, patient assessment and images for referrals were felt to be crucial in efficient decision-making, list planning and avoiding repeated endoscopy.

There is now a really good process that the screening nurse fills in the referral and we get written feedback from the MDT. It's not just education about what the patient's management would be, but also education about what I've done. (Participant 3—gastroenterologist)

One participant vetted high-risk polyps as suspected cancer to ensure timely treatment. Another described taking personal responsibility for tracking patients to ensure treatment and surveillance were performed. Increased endoscopy list capacity had been employed by some. Given the complexities of decision-making, some participants had introduced supplementary information to facilitate patient understanding. The use of information leaflets, letters or formal consent clinics was all described.

What we've started to do when we find a big polyp is to give them all the information on the day so that they know what the options are. They can pre-read it so whenever I ring them after their MDT, they have some idea of the options that are available and already have a kind of opinion in their head about what they would like to do and I think that's been really, really helpful. (Participant 16—nurse endoscopist)

Education and training

The importance of developing advanced polypectomy skills was recognised with mentored sessions either in person or remotely being used by some participants. Education regarding polyp assessment to improve referrals and decision-making was also being performed.

**Table 3** Comparison in factors leading towards surgical intervention between medical and surgical clinicians

Surgical clinicians	Medical clinicians (gastroenterology and nurse endoscopists)
Gathering Information regarding the patient and their polyp	
<p>'If you've got a young fit patient with an incidental cancer, we would tend to argue in the MDT that even if it's relatively low risk, they're probably better served by an offer of a resection.' (Participant 6)</p> <p>'If they are otherwise fit then obviously you look at other factors. Have they got an underlying bowel disorder or inflammatory bowel disease? Are they on steroids? Things that I'd be concerned about managing it endoscopically.' (Participant 9)</p> <p>'A right sided polyp which could potentially be taken on but has a very difficult colon and patient is fit, I may actually consider talking them into operation rather than having a repeated surveillance and a difficult experience.' (Participant 1)</p> <p>'If it is a complete circumferential polyp, it can be done but we discuss this in MDT. If we do EMRs in different sittings, it can turn into fibrosis and lead to stenosis. In that case, we consider surgery as well.' (Participant 4)</p> <p>'Sometimes when you have complex polyps in the right colon, there's always debate. Is a right colectomy laparoscopically better than complex polypectomy and then causing perforation and complications?' (Participant 10)</p> <p>'There are genetic factors as well. If they've got a background of multiple polyps, Lynch syndrome or something like that then you'd have a lower threshold for offering them a resection.' (Participant 6)</p> <p>'We've certainly had some patients with caecal polyps that have been difficult to remove. They're still coming back several years down the line to have bits of polyp nibbled away, and you can't help think they would have been better just having an ileocecal resection and be done with it at that original time.' (Participant 6)</p> <p>'In those (recurrence) cases I often quite strongly counsel towards surgery, despite everything I've just been telling you. Multiple hospital visits and multiple polypectomies are high risk with anxiety that's actually killing the patient's quality of life.' (Participant 11)</p>	<p>'If you're in your 40s with a (<i>incidental</i>) polyp cancer you'll either have very intense surveillance plus or minus genetics. Or you probably would push them potentially more to have a resection, to make sure that that segment of bowel has gone.' (Participant 7)</p> <p>'We've had lesions where they're big things in the caecal pole, wrapping around the appendiceal orifice. That's not really going to be something for endoscopy, it's probably creeping down into the appendix. So that's the sort of thing that would go through that MDT and then on to surgery afterwards.' (Participant 3)</p> <p>'I think caecal ones are almost as bad as the rectal ones. We seem to worry about them a lot more because of the increased risk of perforation. If they're in the caecal pole I always start to think up front with the patient that actually surgery might be the best option, rather than wasting three, six, twelve months of repeated endoscopy, repeated surveillance and you end up with an operation anyway.' (Participant 7)</p> <p>'A lesion in the right colon and in a young fit patient. I think they're probably better served (by surgery).'</p> <p>(Participant 12)</p> <p>'Especially with younger patients who may need to come back again and again, and we're not going to clear that polyp. We have had cases where they've decided to go straightaway for surgery, because that's a more permanent solution for them.' (Participant 17)</p>
Aids to decision-making processes	
<p>'There's that bit of commitment from the patient, and I think there are definitely instances where on balance some patients would prefer to undergo a resection.' (Participant 6)</p> <p>'I think that depends on patient's experience of endoscopy. You will get some patients who have had a bad experience and they do not want another endoscopy.' (Participant 9)</p>	<p>'I've seen patients being very much swayed by who the initial consultant is. Let's say if they go to see a surgical consultant you can easily convince them to do laparoscopic intervention whereas if they come to see me, they can get swayed.' (Participant 12)</p> <p>'Occasionally patients will say I don't want to travel and in which case they're offered surgery as an alternative.' (Participant 20)</p>
Barriers in achieving optimal management	
<p>'I think even when it is endoscopic resectable by a fairly straightforward EMR, because people don't have the volume they won't take them on.' (Participant 9)</p> <p>'He's an asset to the service and that is a brilliant thing to have. The problem is he is one individual and there have been a few occasions where treatment has been delayed and by the time he has seen those patients he had said, sorry it's not suitable for EMR this is cancer.' (Participant 10)</p>	<p>'With Covid we've got all these delays and it makes me increasingly nervous. We had a guy who had a polyp diagnosed over a year ago and the endoscopist wasn't confident to take it out. We tried to get the patient back but Covid hit and patient didn't want to come back. He came for a colonoscopy last week, and you can see that the polyp is a cancer. But there's no doubt that patients' polyps have progressed.' (Participant 2)</p>
MDT, multidisciplinary team.	

We have the journal club and try and do some education across the board. We do a lot of education about what pictures to take and what information we need. (Participant 17—nurse endoscopist)

Personal responsibility for improvement was taken by many. Attendance at endoscopy courses, development programmes and feedback from meetings were all methods used to reinforce good decision-making.

Comparisons between clinical specialities

Comparisons of factors between surgical and medical clinicians for recommending surgery and attitudes towards team decision-making strategies are shown in tables 3 and 4. Similarities are seen with factors such as right-sided lesions, difficult location, suspected cancers and young or fit patients leaning decision-making towards surgery. Other issues common between groups

Table 4 Comparison in attitudes towards team decision-making strategies between medical and surgical clinicians

Surgical clinicians	Other clinicians (gastroenterology and nurse endoscopists)
Positive attitudes	
<p>'I voluntarily go to the MDT but it's not part of my job plan. I've been going to it because I think it's good to see cases and to see also the outcome of the cases I have done.' (Participant 15)</p> <p>'And then if they are happy (<i>the polyp MDT</i>) they will get the patient across and bring them straight for colonoscopy with procedure. So that they do it quite quickly.' (Participant 9)</p> <p>'All of us have our own niche within that MDT. We work with people who do TEMS and we have somebody who is interested in ESD. There are cases which are debated sometimes but I think it works quite well.' (Participant 1)</p> <p>'Before that (<i>complex polyp MDT</i>) it was hit and miss and whoever can do it, can do it kind of thing.' (Participant 4)</p>	<p>'I feel very comfortable I've got that (<i>polyp MDT</i>) around me. It's quite secure and I'd find life a more vulnerable and scarier if I had to make decisions myself.' (Participant 3)</p> <p>'I've got complete oversight of when all these patients are booked. We cross-reference every patient that's discussed in a complex polyp meeting with my database waiting list..... I can see at any one time how many patients are waiting to be dated and when their scope is going to be.' (Participant 2)</p> <p>'Now they are discussed in MDTs and we will make sure they are done by an appropriate endoscopist.' (Participant 5)</p> <p>'There is now a really good process that the screening nurse fills in the referral and we get written feedback from the MDT. It's not just education about what the patient's management would be, but also education about what I've done and whether I've done the right things or not.' (Participant 3)</p> <p>'We would never send any polyps to the surgeons without having discussed in the complex polyp MDT, and our surgeons are part of that MDT as well.' (Participant 17)</p> <p>'That's one of the things you pick up from MDT so that that lesion can be thoroughly seen by anybody and there is no need for them to be scoped again.' (Participant 3)</p> <p>'I found an enormous polyp about 2 weeks ago what I considered not to be endoscopically resectable but the opinion of my colleagues was the opposite.' (Participant 14)</p> <p>'I think it's a great service and gone from strength to strength over the past couple of years. I run it alongside the gastro fellows and it's really well attended. There's lots of buy-in from both the surgical and the gastro teams in terms of referring patients along that pathway to the complex polyp MDT.' (Participant 15)</p>
Negative attitudes	
<p>'The complex rectal lesion MDT is probably the most challenged pathway in the trust because we have quite long waits. We only do the meeting once a fortnight and it does mean that it's logistically quite difficult.' (Participant 15)</p> <p>'We will say let's refer to the complex polyp team, but it overloads that service.' (Participant 9)</p> <p>'We need people who have got the time to properly participate in the MDT. Ours is the same day as our colorectal MDT, so we do find that people are torn between the two and it's sometimes difficult to attend the whole meeting.' (Participant 15)</p>	<p>'Often you get a letter (<i>to the MDT</i>) and there's not even a size mentioned. The admin team then end up chasing the consultant. You don't want some communication going amiss and then a patient suffering. I try to encourage my own admin staff to try and chase things up rather than sending letters back and forth just creating delays.' (Participant 12)</p> <p>'The original time slot is now inadequate, and it often impacts on the gastro meetings that follow straight after. It's not that people aren't getting done, but it's impacting on other meetings in the morning.' (Participant 18)</p>
ESD, endoscopic submucosal dissection; MDT, multidisciplinary team.	

preventing endoscopic resection included patient preferences and disease progression. Attitudes towards team decision-making were positive in nature with all negative observations being related to capacity, information and clinician availability.

DISCUSSION

To our knowledge, this is the first study assessing the influences on decision-making for complex colorectal polyps. An explanation for the high surgery rates for colonic polyps is needed,¹⁹ and qualitative research gives a unique insight into practice. Clinicians advocated endoscopic management wherever possible but the availability of expertise, timely endoscopy and challenges in referrals were all reported barriers in achieving optimal management.

Unlike the findings of Moon *et al.*,¹³ surgeons and gastroenterologists seemed equally engaged with endoscopic therapy. Polyp and patient features leading to a recommendation of surgery were consistent and based on the likelihood of malignancy, fitness and wishes of the patient. Lesions in the right colon were more likely to be offered surgery to avoid perforation in the thinner bowel wall. Such concerns need to be supported by evidence as the risk may not be higher than those of colonic resection. Alternative colon sparing treatments such as combined procedures should be available.²⁰ Lesions assessed as having high grade dysplasia were a cause of concern for many participants. This finding is not synonymous with invasive disease and similar to other evidence¹³ may lead to unnecessary surgical treatment. International recommendations exist for optical diagnosis training.²¹ The improvement of technology to capture images and videos was widely advocated. Virtual platforms could allow collaborative assessment to facilitate good decision-making and confidence in taking on more challenging lesions endoscopically.

As speculated,¹⁹ challenges were reported in the knowledge of and access to complex polyps expertise. This may explain utilisation of surgical management where less invasive techniques may be possible. Given the known risks of surgery²² and higher healthcare costs, it is important to avoid unless clearly indicated. Development of relationships in addition to streamlined referral pathways is needed. This is particularly important for

specialist techniques where clear identification of service responsibility could help access organ preserving procedures. Challenges regarding training can also be restrictive.²³ Increased team meeting and endoscopy capacity, administration support, tracking of cases and treatment timelines were frequently called for by participants.

The use of complex polyp team decision-making strategies has been recommended by guidelines.³ The attitude towards collaborative discussion and decision-making was overwhelmingly positive despite limited underlying evidence. Meetings were reported as beneficial to service planning and education. They were viewed as supportive environments enabling clinicians to manage complex cases and facilitate the introduction of new techniques.

There were other areas identified where improvements were being made. Given treatment complexities, improved knowledge for patients through written information or dedicated clinics was reported. Collaboration between sites was advocated to learn from each other's experience. A summary of recommendations to improve practice using the findings of this study is shown in figure 1. The introduction of structured team decision-making could facilitate these recommendations in optimising complex polyp management and avoiding inappropriate surgery. We advocate their use and recommend professional organisations provide guidance on their structure and monitoring.

There are limitations to qualitative research. Bias may be introduced through participant selection and interview design. As a surgeon, the clinical and research interests of the lead author may have influenced the focus of the interviews. Efforts were made to avoid this with the use of a pre-written interview guide. We observed that as all participants were experienced endoscopists, they required limited guidance in discussing their opinions and we felt the impact of the researcher's opinions was minimal. The use of a single researcher developing codes and themes may also have introduced limitations, although quality is not necessarily dependent on multiple coders.²⁴ Efforts were made to identify individuals from a range of sites and not just those with access to complex polyp expertise. Despite this, the results described may not accurately reflect all experiences or there may have been concerns about open discussion. Reassurances of participant anonymity were made to hopefully avoid

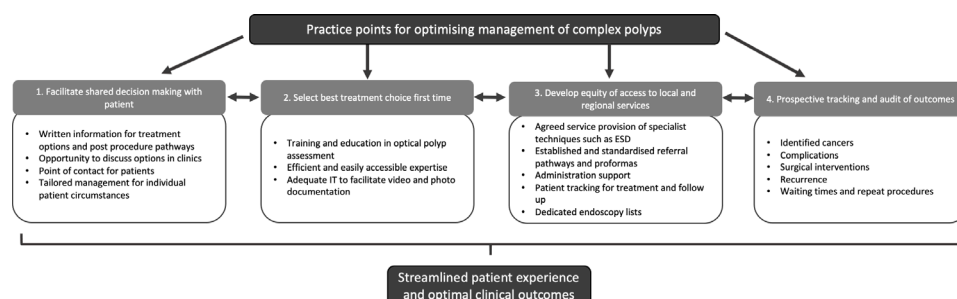


Figure 1 Recommendations for improving practice for complex colorectal polyp management. ESD, endoscopic submucosal dissection.

this. Although consistency in themes was identified, increasing the sample size could have found further factors. Collectively the research team felt that data saturation had been achieved after the performance of 20 interviews, and that little further information would be gathered by recruiting more participants. The collected data may have also been limited by time constraints and availability of participants. Given the variability in health-care systems internationally, our practice in the UK may not be generalisable to other countries.

The absence of the patient's perspective and shared decision-making is an important consideration. Its role has been demonstrated regarding decision-making for malignant polyps with uncertainty and information being key underlying themes.¹⁵ Patient involvement is also likely to be of great influence on the choice of management in complex polyps. This would have provided more insight into their perceptions regarding communication, understanding and beliefs in contrast to the clinical participants. The decision not to incorporate patient participants was made considering similar research being undertaken by the wider research group at the time. Semedo *et al* demonstrated a positive experience of patients having complex polyps removed.²⁵ Support initiatives were highlighted as a potential area to improve patient experience and adverse events after intervention were linked with quality of life outcomes afterwards.

Given the increasing recognition of complex colorectal polyps, good decision-making and service access are likely to have increasing importance. Colonoscopists from all backgrounds feel that endoscopic management should be the treatment of choice where possible. Access to clinical expertise, service provision, quality assessment and education is called for by our health professionals to facilitate the shift towards avoiding surgical intervention and providing high standards of patient care. Multi-disciplinary team decision-making processes are likely to be of central importance to these improvements.

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