EDUCATION IN PRACTICE

Learning from adverse outcomes: guidelines on colonoscopic polypectomy in patients aged 85 years and older

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ABSTRACT

A patient between 80 and 90 years of age died following a polypectomy as part of a colonoscopy surveillance programme for previous polyps. As a consequence of this adverse event, we have amended our local guidelines. While perforation is a recognised complication of polypectomy, it was felt that the decision taken to remove the polyp was incorrect. The decision to remove a polyp should be at the endoscopist's clinical discretion and should depend on polyp size, the patient's age and comorbidities and their performance status. We recommend that polyps <20 mm in size should be regarded as low-risk polyps and that polypectomy of low-risk polyps are not essential in patients aged 85 years and older. Polypectomy of high-risk polyps in patients aged 85 years and older should only be undertaken by experienced endoscopists and with appropriate discussion with the patient prior to the procedure. Patients aged >80 years should be dissuaded from having further colonoscopic surveillance and should not be included in polyp detection rate reports to ensure that polypectomy decisions are not influenced by performance monitoring. We recommend other endoscopy units review their local practice and consider introducing these (or similar) guidelines to reduce risk to older patients. We also recommend that the British Society of Gastroenterology should include more specific guidance on surveillance and polypectomy in the older patient when the guidance is next reviewed.

CASE

Our elderly patient with a past medical history of hypertension, hypothyroidism and peripheral vascular disease underwent a colonoscopy in 2010 to

investigate microcytic anaemia. Four polyps were removed: three tubular adenomas and one hyperplastic polyp with no evidence of malignancy.

A surveillance colonoscopy carried out 3 years later detected seven polyps, six of which were removed. Two small (2 mm and 9 mm) sessile polyps, confirmed as tubular adenomas with low-grade dysplasia, were removed from the caecum by endoscopic mucosal resection (EMR). Three small transverse colonic polyps (1 mm, 2 mm and 7 mm) and one splenic flexure polyp (13 mm) were removed by EMR. The transverse colonic polyps were sessile serrated lesions, and the splenic flexure polyp a tubular adenoma with low-grade dysplasia.

The patient was readmitted 5 days postprocedure with severe abdominal pain and tenderness in the right iliac fossa. They were tachycardic, tachypnoeic and pyrexial with a lactate of 5.0 mmol/L. The white cell count was $14.8 \times 10^9/L$ and C-reactive protein >350 mg/L. A CT scan revealed a retroperitoneal caecal perforation with a collection. An emergency right hemicolectomy with end ileostomy and mucous fistula was performed and the patient was transferred to an intensive care facility. The patient developed multi-organ failure and despite optimal organ support died. The colectomy specimen revealed a defect in the wall of the caecum as the site of the perforation. There was no evidence of malignancy.

CLINICAL GOVERNANCE REVIEW

The clinical governance discussion revolved around the appropriateness of

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doing a surveillance procedure in someone so old, decision making regarding the remaining polyps and the actual technique for polypectomy.

Decision to perform surveillance colonoscopy

The decision to repeat a colonoscopy at 3 years complies with published guidance.^{1 2} However, it was not clear to what degree the decision was a shared decision with the patient. The outcome of an effective shared decision-making process is likely to have depended on the personal preferences of the patient, but patients of this age will often prefer to not have further interventions when the balance of risks and benefits is clearly presented.

Decision to remove the smaller polyps

The governance committee considered the decision to remove so many polyps in someone so old with comorbidity, questionable. Ultimately, the decision should be the responsibility of the clinician performing the procedure, but the governance committee felt, on the basis of this case, that there was a need for some local guidance on polypectomy in this age group (see below).

Polypectomy technique

The committee discussed the polypectomy with the colonoscopist concerned and his description of the procedure appeared in line with best practice: he lifted all polyps with the preferred department lifting mix and used diathermy for all polypectomies. The colonoscopist was a locum but had been observed performing several colonoscopies by a local senior trainer and was considered competent to perform polypectomy. There was no documentation of the diathermy settings and no record of how long diathermy was applied. Given the timing of the presentation (5 days later) and the fact that no muscle tissues were seen in the polypectomy specimens, it seems likely that diathermy energy was too high. However, there is no way of knowing this for certain, and delayed perforation is a well-known complication of polypectomy, especially in the right colon. Perhaps, alternative techniques could have been used, such as cold snare, or cold biopsy, but there is no evidence of superiority of these techniques and they are associated with other problems: bleeding and incomplete excision.

DISCUSSION

A clinical governance review of this case highlighted two areas of concern: appropriateness of surveillance colonoscopy in older patients with comorbidity and polypectomy decision making. The polypectomies themselves may have been suboptimal, but there is no way of knowing this for certain. In an ideal world, the decision about surveillance colonoscopy should be a shared one. There is no data on how well decisions are shared, but it is very likely that in most

jurisdictions the decision is still made by the colonoscopist and the patient is told what is happening; or at the very least the surveillance is recommended without a comprehensive discussion of the risk and benefits. A proper discussion of risks and benefits is time consuming, but it is likely to lead to fewer colonoscopies, especially in older people. In this case, if the patient had decided not to have the procedure, it is likely she would still be alive and the expense of treating her complication would have been avoided.

The performance data of endoscopists in the UK are closely scrutinised and there is an expectation that colonoscopists should have a high polyp/adenoma detection rate. This expectation is reinforced by recent publications which have demonstrated a close association of adenoma detection to the subsequent development of interval cancer.^{3 4} In our service, polyp detection rate is measured by an electronic reporting system that only recognises polyp detection if the polyp is removed. The combination of an expectation to achieve high polyp detection, and the method of determining when a polyp has been detected, encourages removal of all polyps, in this case, when it was not in the patient's best interests. It is very likely that in elderly patients there is minimal risk of subsequent development of colon cancer when small polyps are left behind. By contrast, the consequences for the older patient when there is a complication are often much more serious. Thus, the system and our department must accept some responsibility for this complication through the unintended consequences of performance measuring and management. On the basis of this, the governance committee agreed to develop a local guideline to support endoscopists when considering polypectomy in the elderly informed by a review of the literature.

Most bowel cancers evolve along the polyp to cancer pathway. Polypectomy protects against the development of cancer and patients who have had polypectomy have a lower incidence of cancer than the background population. The British Society of Gastroenterology (BSG) guidelines for surveillance colonoscopy are based on evidence that the future risk of developing colorectal cancer or advanced adenomas after polypectomy varies according to the number and size of the adenomas removed at baseline colonoscopy. It is recognised following a retrospective study that the natural history of untreated colonic polyps is uncertain, but that polyps ≥ 10 mm in diameter should be excised.⁵ The guideline recommends stratifying patients into low, intermediate and high-risk groups to determine the timing of the next procedure.

The BSG guidelines recommend that patients should be offered surveillance until age 75 years and beyond if they are well enough and have a reasonable life expectancy. Colonoscopy is a more risky procedure and more likely to be incomplete in older patients. Further, the average lead time for progression of an

Table 1 Impact of health and functional status

Age (years)	Life expectancy (years)		
	Lower 25%	Middle 50%	Upper 25%
70	9.5	15.7	21.3
75	6.8	11.9	17
80	4.6	8.6	13
85	2.9	5.9	9.6
90	1.8	3.9	6.8

adenoma to cancer is at least 10 years for small lesions. This is similar to the average life expectancy of an individual aged 75 years or older, suggesting that most will not benefit from surveillance.² Data from the USA on life expectancy and comorbidity is shown in [table 1](#). The data supports the notion that there is little benefit from polypectomy in patients over the age of 85 years⁶ because of the very low likelihood of progression to cancer during their remaining life. So decisions about surveillance in this age group need to be considered very carefully and ideally, they should only be made after discussion with the patient to take account of their preferences.

The ability to withstand complications in older patients is much reduced, so perforation or bleeding postpolypectomy is more likely to have a poor outcome.⁷

Whether a colonoscopy in an older patient is done for surveillance or new symptoms, the decision to remove a polyp needs to take into account the risk that the polyp is malignant or that it may become malignant in the near future. An assessment of the patient's underlying comorbidities and overall functional status should form part of this clinical decision. Studies have shown that the risk of high-grade dysplasia or polyp cancer increases with polyp size. The risk is extremely low in polyps <10 mm in size, with risk of becoming much higher in polyps >25 mm in size. [Table 2](#) illustrates the risk of malignancy in relation to polyp size (estimates derived from analysis of >65 000 polyps removed in the Bowel Cancer Screening Programme).⁸

The case review supported by data in [tables 1](#) and [2](#) resulted in the following recommendations which now form our local guideline for surveillance and polypectomy in patients aged 85 years or older:

Table 2 Advanced histological feature and cancer in different size groups of polyp

Size (mm)	Polyp cancer (%)	HGD (%)
5–9	0.5	3.1
10–14	3.7	11.8
15–19	5.9	18.5
20–24	6.6	26.4
25–29	10.2	30.9
30–34	11.9	34.6
35–39	20	36.5

HGD, high grade dysplasia.

1. Polyps <20 mm in size should be regarded as low-risk polyps.
2. Polypectomy of low-risk polyps is not essential in patients aged 85 years and older.
3. Polypectomy of high-risk polyps in patients aged 85 years and older should only be undertaken by experienced endoscopists and with appropriate discussion with the patient prior to the procedure. This discussion should provide information regarding the predicted polyp to cancer risk and factor in the patient's performance status.
4. Patients aged >80 years should be dissuaded from having further colonoscopic surveillance and should not be included in polyp detection rate reports to ensure that polypectomy decisions are not influenced by performance monitoring.

CONCLUSION

The new guidelines have been adopted locally. Feedback from endoscopists has been positive and many have felt supported in decisions not to remove polyps in elderly patients. It is important to emphasise that the decision to remove a polyp should always be at the endoscopist's discretion and that it should depend on polyp size (because this is related to malignant transformation), the patient's age and comorbidities, and their performance status. We recommend other endoscopy units review their local practice and consider introducing these (or similar) guidelines to reduce risk to older patients. We also recommend that the BSG should include more specific guidance on surveillance and polypectomy in the older patient when the guidance is next reviewed.

Competing interests None.

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