

Gastrointestinal endoscopy on elderly patients. Are there limitations?

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Abstract

Gastrointestinal endoscopy is increasingly performed in elderly patients for both screening and therapeutic purposes. However, this demographic presents unique challenges due to the higher prevalence of comorbidities and the widespread use of medications such as antiplatelets, anticoagulants, antidiabetic agents, and neurotropic drugs. Sedation related adverse events appear more frequently in elderly patients. Potential complications accentuated in the elderly include post intervention bleeding and perforation, dehydration and electrolyte imbalance following bowel preparation, post-cholangiopancreatography (ERCP) cholangitis, sedation-related adverse events and cardio-pulmonary complications. Despite the established efficacy and safety of gastrointestinal endoscopic procedures, it is recommended that the decision to proceed with endoscopy should be individualized, taking into account factors such as expected benefits, performance status, cognitive function, understanding of potential complications, and adherence to medical instructions.

Key words: *Endoscopy; elderly; complications; preparation; individualization*

INTRODUCTION

The demographic shift towards an aging population has been a significant trend in recent decades, with individuals aged 65 and older being classified as geriatric patients [1]. In the European Union (EU), 21.1% of the population were aged 65 and over in 2022, compared to 18% a decade earlier, while in the United States of America (USA) people over 65 increased from 4.9 million (or 4.7% of the total population) in 1920 to 55.8 million (16.8%) in 2020 [2,3]. Cellular aging and physiological alterations as well as comorbidities and use of medications affect many gastrointestinal (GI) functions such as motility, response to hormone secretion and medication

metabolism, thus leading to increased incidence of many GI diseases in the elderly. For example, reduced blood flow increases the incidence of peptic ulcers and mesenteric ischemia, while increased use of non-steroidal inflammatory drugs (NSAIDs) can cause stomach and small bowel bleeding [4]. Approximately 85.260 new cases of colorectal cancer were diagnosed in people over 65 in the USA for 2023 [5], while disorders such as diverticulosis, constipation and diarrhea are commonly observed in the elderly [6]. Many of these disorders can be prevented, diagnosed and sometimes treated with endoscopy.

Although endoscopy has demonstrated significant efficacy and diagnostic yield in elderly patients [7], ensuring the safety of these procedures is paramount. It is imperative to carefully assess whether the benefits of the procedure outweigh the risks of potential complications [8]. In this review, we explore the importance of patient preparation and medical evaluation prior to endoscopic

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procedures, the potential need for medication dose adjustments, limitations in sedation, and strategies to ensure compliance with medical instructions. Additionally, we will focus on the possible risks and optimal preparation for the two most commonly performed endoscopic procedures, esophagogastroduodenoscopy (EGD) and colonoscopy. Furthermore, we will analyze potential complications and safety measures associated with other endoscopic procedures.

PRE-ENDOSCOPY ASSESSMENT

Medical History and Physical Examination

Before conducting an endoscopy, it is crucial to perform a comprehensive history taking and physical examination. Assessing the patient's cognitive status and ability to provide consent is essential, and in cases where a patient lacks capacity, obtaining consensus from family members or caregivers may be necessary [9]. Given that modern endoscopy units implement devices that could potentially cause electrical interference, special attention should be given to patients with implanted devices such as defibrillators and pacemakers. Protective measures for both patients and staff before and during endoscopy should adhere to current guidelines [10,11].

Polypharmacy is commonly observed in older adults, necessitating the recording of all patient medications, including over-the-counter drugs. Close monitoring of diuretics, antihypertensives such as angiotensin-converting enzyme (ACE) inhibitors, angiotensin-receptor blockers (ARBs), and NSAIDs is essential, as they elevate the risk of dehydration and peri procedural hypotension [12].

Diabetes is a common comorbidity in the elderly. This patient population is at risk of complications during endoscopy preparation, including hypoglycemia, fluid and electrolyte imbalances, acute renal failure, lactic acidosis, and ketoacidosis [14]. Consultation with an endocrinologist for drug modifications is advisable. Morning procedures are recommended due to the heightened risk of hypoglycemia [14]. Patients should refrain from taking antihyperglycemics on the day of the procedure. Sulfonylureas and SGLT2 inhibitors should be discontinued the day before, and long-acting insulin doses should be halved, with glucose levels closely monitored. Normal treatment should be resumed at usual doses once the patient is permitted to eat and drink normally [13].

Antiplatelet and anticoagulant medications increase the risk of bleeding during and after endoscopy, particularly following high-risk procedures such as polypecto-

my, endoscopic mucosal resection, and sphincterotomy [15]. Patients should be informed about the risks associated with the procedure, and the appropriate timing for cessation and resumption of these medications should align with current guidelines. In high-risk cases, consultation with other specialties such as cardiologists and hematologists may be necessary [16].

Endoscopy indications

Like in any age group, endoscopy in elderly patients should only be undertaken when the results are likely to contribute to improved patient outcome [17]. Referring physicians need to consider if and how test results will affect patient management and care. While the indications and contraindications for GI endoscopy generally mirror those in younger adults, some variations exist due to the differing incidence of various GI diseases with advancing age [18]. It is important, however, to pay close attention to comorbidities that may increase the risk of complications, particularly cardiovascular and pulmonary dysfunction [17].

Bowel preparation

Achieving good bowel preparation is paramount for conducting a successful colonoscopy. However, this poses a challenge for the elderly population, who are less likely to tolerate high-volume regiment oral preparation [19]. Studies have demonstrated that older age is a risk factor for incomplete colonoscopy [20]. Diabetic patients are particularly susceptible to poor bowel preparation, often requiring repeat endoscopies [14]. Complications such as dehydration, electrolyte imbalance, increased risk of falls and fractures and acute renal failure have been observed during bowel preparation in older individuals, emphasizing the need for careful planning and selection of the appropriate type of oral preparation [21,22]. Magnesium-based solutions can lead to severe hypermagnesemia, even in the absence of kidney disease [23]. Sodium phosphate solutions may result in potentially fatal electrolyte disturbances such as hypokalemia and hyperphosphatemia, with their prevalence being higher in frail patients [24]. Polyethylene glycol (PEG) based solutions exhibit the best safety profile. They have been shown to be better tolerated and are therefore preferred for the elderly population [15,17]. Patients should be thoroughly informed about the risks of dehydration and potential kidney damage, as impaired renal fluid management is common in advanced age. Adequate hydration before and after

endoscopy is essential [14]. Split dosing, along with a low-fiber diet and proper timing of the endoscopy, appears to be an effective bowel cleansing strategy, as it reduces the likelihood of non-compliance and inadequate preparation in the elderly [25]. Constipation is another common reason for poor bowel preparation, with increased prevalence in the elderly [26]. A recent systematic review showed the addition of agents such as stimulant laxatives, prokinetic drugs, probiotics and dietary fiber to usual types of oral preparation can improve bowel cleansing quality in patients with constipation, without additional adverse effects [27].

Sedation

Most endoscopic procedures are performed with mild sedation, typically utilizing benzodiazepines, propofol, and opioids such as fentanyl. However, physiological changes in the elderly, use of neurotropic medications, and presence of comorbidities can alter a patient's response to sedatives [28]. Body changes in the geriatric population, including impaired arterial oxygenation, disrupted cardiorespiratory responses to hypoxia and hypercapnia, and central nervous system depression leading to reduced reflexes, including the pharyngeal reflex, need consideration [29,30]. Additionally, increased body fat and impaired renal and hepatic clearance can prolong the effects of certain medications, such as benzodiazepines [31]. The use of neurotropic drugs due to comorbidities can also heighten the risk of oversedation during endoscopy. Consequently, careful selection of sedative dose is required in the elderly to reduce the likelihood of complications such as oversedation and aspiration [17].

Commonly used sedatives for endoscopy include benzodiazepines like midazolam and opioids such as fentanyl. Midazolam is frequently employed, and its co-administration with fentanyl has shown positive results in enhancing procedure tolerance [32]. Propofol is favored for achieving better tolerance during lengthy endoscopic procedures due to its short half-life and rapid onset of action [33]. Despite its established safety and tolerability, the lack of a reversal agent and adverse effects including hypotension elevate the potential risks of propofol, especially in the elderly [34].

Preventive measures should be implemented before endoscopy to mitigate the risks associated with sedation. Assessing renal and hepatic function prior to the procedure is essential. Adequate monitoring devices and basic resuscitative equipment must be readily available,

with staff appropriately trained in patient assessment and device usage [35,36]. Given that desaturation is more frequent in the geriatric population during endoscopy, continuous oxygen supplementation via nasal cannula must be available. Training in airway protection and on-site availability of suction are also crucial [37]. Careful selection of the sedative agent is imperative, with lower initial and cumulative doses administered at reduced rates / longer intervals to minimize adverse effects in geriatric patients [38].

Sedation-free endoscopy is an alternative to mitigate the potential risks associated with sedative agents, with studies indicating increased tolerance and satisfaction among elderly patients undergoing such procedures [39]. Administering sedation on an as-needed basis during endoscopy, rather than a fixed dose at the start of the procedure, appears to reduce the prevalence of hypotension and hypoxia while also reducing procedural costs [40]. The use of ultrathin endoscopes, measuring 6 mm in diameter compared to the regular 10- to 11-mm endoscope, can facilitate sedation-free endoscopy by reducing sympathetic system activation and oxygen desaturation, thereby minimizing the risk of complications in the elderly [41].

Upper GI Endoscopy in Elderly Patients: Clinical Considerations

Although upper GI endoscopy can provide crucial information that influences clinical decision-making, there are several considerations. A study by Theocharis *et al.* highlighted severe comorbidity(-ties) as the main determinant of adverse outcomes in octogenarians with upper GI bleeding [42]. In a cohort of 218 patients undergoing esophagogastroduodenoscopy (EGD), indications included symptoms of GI bleeding (41%), anemia (15%), dyspepsia (31%), dysphagia, weight loss and anorexia (9%), and/or reflux symptoms (3%). Serious disease (cancer, peptic ulcer, reflux esophagitis, and/or erosive gastritis/duodenitis) was identified in 44% of cases [43]. A large study of 3147 elderly patients undergoing EGD by Buri *et al.* reported that findings affecting medical decisions were present in 49.7% of patients, with factors most commonly associated with abnormal findings being male sex, weight loss, bleeding, and symptoms of gastroesophageal reflux disease [44]. A more recent study of 202 patients aged 75 and over who underwent EGD showed a high diagnostic yield and good safety profile. Common indications included dyspepsia, GI bleeding, reflux, anemia, and

screening/surveillance, with malignancy and/or ulcers being detected in 19.3% [45].

The safety and tolerance of EGD in the elderly have been well-documented. Age alone should not serve as a contraindication for upper GI endoscopy. Compared to bowel preparation, preparation for EGD is simpler, thus making it better tolerated by older patients [46]. Lee et al. found no significant differences in hospitalization duration, need for repeat endoscopy, transfusions, endoscopy complications, or mortality between younger and elderly patients requiring therapeutic upper GI endoscopy [47]. However, the increased prevalence of comorbidities in the geriatric population underscores the importance of thorough pre-procedural examination and cardiopulmonary monitoring during EGD. Caution should be exercised in patients with (known) underlying heart disease, as they run a higher risk of cardiopulmonary complications during the procedure, including arrhythmias and ST wave changes [48]. Markers such as brain natriuretic peptide have been shown to be elevated following upper GI endoscopy, providing further evidence of cardiac strain during EGD. [49]. The presence of pharyngeal abnormalities may impede endoscope progression [50]. Careful attention is necessary to mitigate complications. As previously mentioned, older patients exhibit better tolerance for unsedated endoscopy, further enhancing the procedure's safety [51]. The use of ultrathin endoscopes can reduce sedation requirements, oxygen desaturation, and disturbance of cardiac function [52-53]. Proper head positioning is crucial to prevent potential aspiration events, and caution is warranted in patients with suspected Zenker diverticulum to avoid possible perforation [55].

Colonoscopy in Elderly Patients: Clinical Considerations

The utilization of colonoscopy in the elderly has seen a notable increase in recent decades. Common indications include abdominal pain, rectal bleeding, changes in bowel habits, and a palpable abdominal mass [56]. A significant portion of colonoscopies in the elderly are performed for colorectal cancer (CRC) screening and surveillance [17]. While CRC is one of the most common and deadliest types of cancer globally, screening colonoscopy has demonstrated effectiveness in reducing its incidence [57]. However, the utility of preventive endoscopy beyond a certain age is subject to debate. Despite the higher detection rate of CRC in older patients, the extension in life expectancy and

median survival has been shown to be smaller compared to younger patients, potentially due to delayed obvious benefits of screening, deranged functional status and comorbidities [58,59,60]. Complications associated with bowel preparation and the procedure itself are also areas of concern. The American College of Gastroenterology (ACG), the American Cancer Society (ACS) and U.S. Preventive Services Task Force (USPSTF) suggest CRC screening in patients 45 to 75 years of age, and recommend individualized decision-making for screening colonoscopy in patients over 75 years old based on overall patient health, prior screening history, and preferences [61,62,63]. ESGE guidelines recommend screening for CRC in individuals 50 to 75 years of age [64]. Screening for CRC in patients over 85 years of age is discouraged. Elderly patients not previously screened for CRC, those healthy enough to undergo treatment if CRC is detected, and those without substantially limited life expectancy are likely to benefit more from screening colonoscopy [62,63]. Patients should be fully informed of possible procedure risks, with primary care physicians playing a crucial role in counseling, as with any screening test [65]. Special consideration should be given to patient comorbidities, as GI adverse events after colonoscopy appear to be increased in patients with a history of stroke, chronic obstructive pulmonary disease, atrial fibrillation, or congestive heart failure [66]. Alternative screening strategies, such as fecal blood tests and computed tomography colonoscopy, may offer lower complication risks but lower diagnostic accuracy [63,65].

Several studies have investigated the diagnostic yield, safety, and complication rates of colonoscopy in elderly individuals. Karajeh et al. in a study comparing 1000 patients aged over 65 years to 1000 younger patients, found similar completion and adverse event rates between both groups, with a higher diagnostic yield and rates of carcinoma in the older cohort [67]. Another study comparing octogenarians to younger patients demonstrated a high diagnostic yield, increased detection of CRC, and lower sedation requirements in the older group, with similar complication rates in both age groups [68]. These studies provide evidence of the safety of colonoscopy in older patients, although advanced age remains a risk factor for procedure-related adverse events [69]. A meta-analysis by Day et al. reported increased mortality rates and adverse effects during and after colonoscopy in the elderly, with cardiopulmonary events being the most common, potentially exacerbated

by sedation [70]. Serious adverse events, including perforation, GI bleed, and blood transfusions, were more frequent in the geriatric population compared to younger patients in other large retrospective studies [66,69]. Failure of deep cecum intubation and prolonged procedural duration during colonoscopy have been associated with colonic tortuosity, diverticular disease, and poor visualization secondary to inadequate bowel preparation, all of which are more prevalent in geriatric patients [69,71]. Conditions such as prior abdominal surgery and hernias are common in the elderly, and their presence can complicate colonoscopy [72,73]. Experience in performing endoscopy with excellent basic technique along with advanced methods such as water exchange and manual hernia reduction can aid the completion of the procedure in these patients [72,73]. An image of colonoscopy in a patient after manual reduction of a hernia can be seen in Figure 1.

Percutaneous endoscopic gastrostomy: Clinical considerations

Upper endoscopy with percutaneous endoscopic gastrostomy (PEG) placement has become increasingly utilized in recent decades for nutritional support in the elderly, as it has demonstrated superiority over parenteral nutrition and surgical procedures for GI access [74]. Mendiratta et al. reported that the primary diagnosis of patients with PEG placement during a 10-year period (median age 80.2 1993-1997 and 80.1 1998-2003, range 65 or older) included cerebrovascular disease (13.7%), aspiration pneumonia (12%), pneumonia (3.11%), malnutrition (1.94%), congestive heart failure (1.78%), and dysphagia (1.36%) [75]. In a prospective cohort study by Callahan et al. (median age 78.9±8.1, range 60-98), common complications included vomiting (30%), diarrhea (26.7%), constipation (22.7%), nausea (20%), and aspiration symptoms (18.7%), while major complications were rare, and no patients died directly due to PEG placement [76].

Significant concerns surround PEG placement, particularly as it does not appear to extend long-term survival in elderly patients [77]. Thirty-day mortality rates after PEG placement seem to rise, primarily attributable to underlying medical comorbidities rather than the procedure itself [78]. A systematic review by Goldberg et al. concluded that there is no evidence to suggest improved long-term survival rates in patients with advanced dementia who undergo PEG placement for dysphagia [79]. PEG feeding also impacts the social



Figure 1. An inguinal hernia protruding into the scrotum in an elderly male patient undergoing investigation for lower GI bleeding. Appropriate manual hernia reduction facilitated endoscope progress with the colonoscope intubating the cecum uneventfully. Source: Personal records

aspects of eating, which are vital to elderly individuals with comorbidities such as dementia [80]. Current European Society of Gastroenterology (ESGE) guidelines advise against PEG placement in patients with advanced dementia and those with a life expectancy of less than 30 days [81]. Given the questionable improvement in clinical outcomes and the invasive nature of the procedure, the decision for PEG placement should be individualized, with careful consideration of expected benefits relative to potential risks [81].

Endoscopic Retrograde Cholangiopancreatography (ERCP) in the Elderly: Clinical Considerations

Pancreaticobiliary diseases such as choledocholithiasis and periampullary carcinomas are more prevalent among the elderly population. Endoscopic retrograde cholangiopancreatography (ERCP) emerged as an effective minimal invasion intervention that reduced the need for surgical procedures in the elderly, consequently lowering morbidity and mortality rates [82]. The safety, efficacy, and tolerance of ERCP in older individuals have been extensively demonstrated in the literature. A systematic review by Day et al. indicated that ERCP is generally safe in patients over 65 years of age, with common complications including cholangitis

(1.61%), pancreatitis (1.31%), bleeding (0.77%), perforation (0.38%), cardiopulmonary events (0.37%), and death (0.71%). Nonagenarians were found to be more susceptible to adverse events compared to other age groups [83]. Interestingly, pancreatitis occurred less frequently in the elderly compared to younger patients, with some studies suggesting that a reduction in pancreatic exocrine function with advancing age could offer some protection against post-ERCP pancreatitis [84]. A study reported that biliary obstruction was the leading indication (73.7%) for ERCP in elderly patients, with a low procedural as well as a low sedation-associated complication rate compared to younger individuals [85]. Overall complication rates during or following ERCP, as well as therapeutic success rates, appear to be comparable between the geriatric population and younger patients, thereby emphasizing that late age should not be considered a contraindication for ERCP. [86]. All things considered, ERCP should be preferred over biliary surgery in the elderly, as it reduces the rate of major complications, hospital stay, and risks associated with general anesthesia [87].

Endoscopic Ultrasound (EUS) in the Elderly: Clinical Considerations

Endoscopic ultrasound (EUS) is a procedure characterized by its relatively low risk of adverse events and is commonly utilized for cancer staging, evaluation of pancreaticobiliary diseases, and assessment of subepithelial lesions [15]. However, data regarding the safety and utilization of EUS in the elderly population remain limited. A study by Benson et al. demonstrated that adverse events associated with EUS in the geriatric population were comparable to those observed in younger patients [87]. A retrospective analysis involving 265 patients with a mean age exceeding 80 years revealed that common indications for EUS included evaluation of the pancreas and biliary tree, luminal pathology, subepithelial lesions, and mediastinal pathology. The authors concluded that EUS could safely influence the clinical outcomes of gastrointestinal, pancreatobiliary, and mediastinal diseases in elderly patients [88].

In a retrospective study by Takahashi et al. involving 600 patients who underwent EUS-FNA under midazolam-based sedation, age was not identified as a predisposing factor for adverse events, with the elderly group requiring significantly lower doses of sedation [89]. The simultaneous performance of EUS and ERCP is suggested in elderly patients, with studies showing

it is generally safe with similar adverse events in all age groups [90]. The combination of ERCP and EUS is generally well tolerated, useful for diagnosis and therapeutic intervention, and can help reduce costs and avoid unnecessary hospitalizations regardless of patient age and comorbidities [91].

Device-Assisted Enteroscopy (DAE) in the Elderly: Clinical Considerations

Device-assisted enteroscopy (DAE) is a valuable technique that has significantly contributed to the diagnosis and management of various small bowel diseases, particularly in cases of obscure GI bleeding [92]. Three different DAE modalities available in clinical practice are double balloon enteroscopy, single balloon enteroscopy, and spiral enteroscopy [93]. Studies suggest that older age is associated with an increased rate of abnormal findings in DAE [95]. Angioectasias are commonly identified in the geriatric population undergoing DAE, with many cases requiring endoscopic hemostasis. Notably, the procedure duration and adverse effects in older patients do not appear to be significantly elevated compared to younger counterparts [96]. A systematic review of patients who underwent DAE revealed a higher diagnostic and therapeutic yield in elderly patients, along with lower requirements for sedation compared to younger patients [97].

While complications of DAE in the general population include perforation, abdominal pain, bleeding, and pancreatitis [92], its safety and effectiveness in the elderly population are still under investigation. Based on current evidence, DAE emerges as a safe and effective tool that can aid in the diagnosis and treatment of small bowel abnormalities in a population that appears to be more often in need of intervention.

Capsule Endoscopy in the Elderly: Clinical Considerations

Video capsule endoscopy (VCE) is a commonly employed method for investigating small bowel abnormalities, encompassing conditions such as gastrointestinal bleeding, small intestinal polyps, malignancy, malabsorption, and inflammatory bowel disease. While the procedure offers valuable diagnostic insights, potential risks include aspiration, capsule retention, and perforation [98]. Capsule retention due to oesophageal diverticula can be seen in Figure 2. Concerns have also been raised regarding potential interference between small bowel capsules and cardiac implanted devices as



Figure 2. A large diverticulum of the esophagus in an elderly patient resulting in wireless video capsule (PillCam) impaction. A mid-esophageal true esophageal diverticulum is a rare disease. Although it can occur in all ages, they are typically diagnosed in the elderly. *Source: Personal records*

well as insulin pumps [99,100].

A retrospective study of 180 patients who underwent capsule endoscopy revealed that older patients had similar gastric small bowel passing time, increased incidence of angiodysplasias and found the procedure more tiresome compared to younger patients [101]. Additionally, a large cohort study conducted by Gomez et al. demonstrated a higher diagnostic yield (73% compared to 55% in younger patients) and a comparable rate

of adverse events in the elderly, with angiodysplasias being the most common finding [102].

Conditions such as hernias, extensive previous abdominal surgery, diverticulosis, fistulas, abdominal radiation or motility disorders such as achalasia require special consideration, due to possible GI stenosis and risk of capsule retention or difficulty swallowing the capsule [103]. Many of these conditions are common in the elderly, and careful history assessment before the procedure is paramount. Patients with suspected GI stenosis, especially those with established Crohn's disease, are advised to undergo pre-testing like use of a patency capsule prior to VCE [104]. Aspiration due to motility disorders can be avoided by endoscopic placement of the capsule into the duodenum [105].

In summary, capsule endoscopy is a safe procedure which can be used effectively to investigate small bowel disease in the elderly. Careful history taking can help determine which patients will require other diagnostic tests to avoid possible complications. Clinical considerations needed before, during and after endoscopic procedures in the elderly, are summarized in Table 1.

CONCLUSIONS

In conclusion, diagnostic and therapeutic endoscopy can be safely conducted in elderly patients, provided that appropriate pre-procedural assessment and preparations are undertaken. This includes solid indications, meticulous attention to comorbidities, modification of

Table 1. *Clinical considerations needed before, during and after endoscopic procedures in the elderly.*

Before endoscopy	During endoscopy	After endoscopy
Risk-benefit assessment	Monitoring vital signs, oxygen supplementation	Monitoring for oversedation
Assessment of Cardiopulmonary status, renal and liver function	Possible electrical interference by devices such as pacemakers and defibrillators	Possible Cardiopulmonary events
Ability to consent, obtain consensus from family members if necessary	Sedation dosage, consider sedation-free endoscopy	Post endoscopy bleeding, possible need for transfusions
Drug modifications (e.g. antidiabetics, antiplatelets)	Use of ultra-thin endoscopes	Other complications (e.g. perforation, pancreatitis, cholangitis)
Careful choice of bowel preparation regimen	Anatomic abnormalities complicating endoscopy (e.g. hernias, diverticulae, GI stenosis in Crohn disease)	
Proper head placement to avoid aspiration		

drug doses as necessary and thorough explanation of the procedure and potential complications. Utilizing polyethylene glycol solutions and split dosage regimens can enhance bowel preparation in older individuals. Additionally, sedation-free endoscopy may be considered due to improved procedure tolerance in the geriatric population.

Close monitoring of vital signs is paramount during all endoscopic procedures. Screening for colorectal cancer after the age of 75 should be individualized, taking into consideration factors such as prior screening history and life expectancy. Ultimately, the decision to undergo screening should be based on an assessment of expected risk and its contribution to medical decision-making. By adopting these principles, healthcare providers can ensure the safe and effective delivery of endoscopic care to elderly patients.

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