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Digestive findings that do not require endoscopic surveillance – Reducing the burden of care: European Society of Gastrointestinal Endoscopy (ESGE) Position Statement

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Bibliography

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SUMMARY OF STATEMENTS

With the aim of reducing the overall burden of care, ESGE recommends against surveillance of a series of conditions. Namely:

ESGE recommends against surveillance of individuals with the following: an inlet esophageal patch; Los Angeles (LA) grade A or B erosive esophagitis; or <1 cm columnar-lined esophagus.

ESGE recommends against surveillance of those with intestinal metaplasia limited to the antrum unless additional risk factors are present, such as persistent *Helicobacter pylori* infection, incomplete metaplasia, or a family history of gastric cancer; or for fundic gland polyps in the absence of suspicious endoscopic features or hereditary syndromes.

ESGE recommends against surveillance of gastrointestinal leiomyomas, lipomas, and antral pancreatic rests, provided that these lesions have typical ultrasonographic features.

ESGE recommends against routine endoscopic surveillance in duodenal peptic ulcer, unless symptoms persist despite adequate therapy.

ESGE suggests against surveillance of confirmed pancreatic serous cystic neoplasms.

ESGE recommends against endoscopic surveillance for patients with hyperplastic polyps in the rectosigmoid, with 1–4 adenomas <10 mm with low-grade dysplasia, or with a serrated polyp <10 mm without dysplasia.

ESGE recommends against surveillance of gastrointestinal conditions in individuals over 80 years old who have less than 10 years of life expectancy and poor general health status.

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SOURCE AND SCOPE

Aiming at reducing the overall burden of care, this Position Statement from the European Society of Gastrointestinal Endoscopy (ESGE) reviews current guidelines in field of gastrointestinal endoscopy and emphasizes those situations in which no surveillance is recommended.

Introduction

Gastrointestinal, liver, and pancreatic disease demand a substantial use of health care system resources worldwide. It is estimated that in 2015, annual health care costs totalled $ 135.9 billion in the United States [1]. In Europe, recent data suggest that there is a growing incidence of functional and malignant gastrointestinal disease across the continent, leading to an increased demand for outpatient visits, hospitalizations, diagnostic techniques, and invasive procedures [2].

Awareness that early diagnosis of gastrointestinal (GI) cancer leads to a reduction in cause-specific mortality has led to massive utilization of endoscopic and imaging procedures, accounting for a significant share of gastrointestinal expenditure [3]. As a result, a substantial proportion of patients who have been diagnosed with one or more precancerous conditions or lesions enter into surveillance protocols. This has been the case for patients with prior resection of colorectal adenomas or diagnosis of Barrett's esophagus (BE) or gastric precancerous conditions. However, cohort studies on the natural history of these conditions have shown that at least some of them do not have additional carcinogenic potential, thereby questioning the usefulness of endoscopic surveillance. To overcome a procedure overload on already limited endoscopic capacity, the general approach of European Society of Gastrointestinal Endoscopy (ESGE) guidelines, as well as those from other international or national societies, has been towards a much more conservative use of surveillance. This has been based on two main factors, namely the actual magnitude of the baseline risk and the efficacy of surveillance in reducing it [4–7]. Moreover, advanced patient age, usually above 80 years, or less than 10 years of life expectancy and unfitness for further care may weaken the clinical significance of endoscopic surveillance.

This ESGE Position Statement aims to provide an updated summary of recommendations with regard to endoscopic findings that do not warrant endoscopic surveillance, based on guidelines by ESGE and other gastroenterological scientific societies. Adherence to these recommendations would reduce costs and morbidity and optimize the use of human and material resources.

ABBREVIATIONS

ACG	American College of Gastroenterology
AGA	American Gastroenterological Association
ASGE	American Society for Gastrointestinal Endoscopy
AUGIS	Association of Upper Gastrointestinal Surgeons [of Great Britain and Ireland]
BE	Barrett's esophagus
BSG	British Society of Gastroenterology
CRC	colorectal cancer
CT	computed tomography
EGD	esophagogastroduodenoscopy
EHMSG	European Helicobacter and Microbiota Study Group
ESGCTP	European Study Group on Cystic Tumours of the Pancreas
ESGE	European Society of Gastrointestinal Endoscopy
ESP	European Society of Pathology
GI	gastrointestinal
GIST	gastrointestinal stromal tumor
IM	intestinal metaplasia
LA	Los Angeles [classification of gastroesophageal reflux disease]
NSAID	nonsteroidal anti-inflammatory drug
RCT	randomized controlled trial
SPED	Sociedade Portuguesa de Endoscopia Digestiva

Methods

A list of prevalent gastrointestinal conditions that may not require surveillance was elaborated, with reported prevalence and malignancy risk (▶ **Table 1**). In July 2019, clinical guidelines and position statements published since July 2009 by the leading European and American scientific societies were screened for nonsurveillance statements addressing these conditions. When more than one guideline from the same society was available, the most up-to-date version was selected. The included guidelines are reported in ▶ **Table 2**.

A literature review restricted to peer-reviewed journals was also conducted in Pubmed, Web of Knowledge, and Embase in search of relevant articles that might have a significant impact on the recommendations. Articles published in English were considered.

Esophagus

Inlet patches

STATEMENT

ESGE recommends against routine endoscopic surveillance of inlet patches.

An inlet patch is commonly defined as the presence of islands of heterotopic gastric mucosa in the proximal esophagus. Prevalence varies from 0.1 to 12 %, neoplastic progression is extremely rare, and fewer than 60 cases of adenocarcinoma have been reported in the literature [17, 18]. According to a position statement of the British Society of Gastroenterology (BSG) and the Association of Upper Gastrointestinal Surgeons of Great Britain and Ireland (AUGIS), regarding quality standards in esophagogastroduodenoscopy (EGD), there is no evi-

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▶ **Table 1** Prevalent digestive findings that might not require endoscopic surveillance.

	Finding or condition	Prevalence	Malignancy risk
Esophagus	Inlet patch	0.1 % – 12 %	0 – 1.6 % risk of dysplasia
	Erosive esophagitis	11 %	0 – 9 % risk of Barrett's esophagus for LA grade A or B erosive esophagitis
	< 1 cm columnar-lined esophagus	10 %	No increased risk of esophageal cancer
Stomach	Intestinal metaplasia or atrophy limited to one location (i. e., antrum or corpus only)	Up to 25 %	0.55 % risk of progression to gastric cancer
	Fundic gland polyps	13 % – 77 %	No documented risk of gastric cancer if < 1 cm and no suspicious features
Subepithelial lesions	Leiomyoma	0.08 % – 0.43 %	Benign lesion
	Lipoma	0.2 %	Benign lesion
	Pancreatic rest	0.6 % – 13.7 %	Anecdotal malignant transformation
Duodenum	Duodenal peptic ulcer	2 % – 13 %	No cancer risk
Pancreas	Serous cystic neoplasm	Up to 16 % of pancreatic cystic neoplasms	Benign lesion
Colon	Low-risk adenomas	~15 % – 30 %	No increased risk versus general population

LA, Los Angeles [classification of gastroesophageal reflux disease]

dence to support routine biopsy or surveillance [8]. No other guidelines specifically address the management of an inlet patch. Recent prospective cohort studies confirm that malignancy is exceptional and do not support regular biopsy or surveillance unless mucosal irregularities are seen [19].

Erosive esophagitis

STATEMENT
ESGE recommends against routine endoscopic surveillance of Los Angeles (LA) grade A or B erosive esophagitis.

Erosive reflux disease is defined as the coexistence of symptoms related to gastroesophageal reflux and erosive esophagitis [10]. Erosive esophagitis is found in approximately 11 % of patients referred for EGD [20], being of low grade, i. e., Los Angeles (LA) grade A or B in most cases [10]. A recent European Consensus stated that LA grade A esophagitis is nonspecific for reflux, as it can be found in 5 % – 7.5 % of asymptomatic controls, and questioned the interobserver reliability of LA grade B esophagitis [21]. The prevalence of Barrett's esophagus (BE) on repeat endoscopy following treatment of erosive esophagitis with proton-pump inhibitors (PPIs) has been reported in up to 12 % of cases overall [22]. Nevertheless, BE is most commonly obscured by LA grades C and D esophagitis, with a reported lower occurrence in lower grades [10, 23,24]. Therefore, a repeat EGD after a 6 – 8-week course of PPI therapy is recommended in patients with severe esophagitis (i. e., LA grades C or D) [8, 10,22] and can be considered in lower grades [10].

Barrett's esophagus

STATEMENT
ESGE recommends against endoscopic surveillance for individuals with < 1 cm columnar-lined esophagus.

Oversurveillance of BE has been extensively documented worldwide and can occur in two out of three patients with BE [25]. For short-segment (1 to < 3 cm) and long-segment (≥ 3 cm) BE without dysplasia, 5-year and 3-year endoscopic follow-up, respectively, are advisable [4]. However, routine biopsies or endoscopic surveillance are not recommended for patients with an irregular Z-line or columnar-lined esophagus of < 1 cm [4, 11, 12]. This subgroup of patients accounts for findings in up to 10 % of EGDs in study series [26] and does not have an increased risk of esophageal carcinoma regardless of the presence of intestinal metaplasia (IM) [27, 28].

In addition, all guidelines agree that when dysplasia is detected, only patients who are candidates for therapy should enter EGD surveillance programs [4, 9, 11, 12]. Age and comorbidity should be considered for each individual when balancing the benefits and risk of surveillance [29]. Only the European Society of Gastrointestinal Endoscopy (ESGE) guidelines provide an arbitrary cut-off of 75 years of age for stop-

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▶ **Table 2** Summary of included guidelines addressing the selected topics with regard to no surveillance.

	Finding or condition	Guideline
Esophagus	Inlet patch	BSG-AUGIS 2017 [8]
	Erosive esophagitis	ASGE 2012 [9], Katz et al 2013 [10], BSG – AUGIS 2017 [8]
	< 1 cm columnar-lined esophagus	BSG 2014 [11], ACG 2016 [12], ESGE 2017 [4]
Stomach	Intestinal metaplasia or atrophy limited to one location (i. e., antrum or corpus only)	ESGE – EHMSG – ESP – SPED 2019 [6]
	Fundic gland polyps	BSG 2019 [13]
Subepithelial lesions	Leiomyoma	ASGE 2017 [14]
	Lipoma	ASGE 2017 [14]
	Pancreatic rest	ASGE 2017 [14]
Duodenum	Duodenal peptic ulcer	ASGE 2010 [15], BSG – AUGIS 2017 [8]
Pancreas	Serous cystic neoplasm	ACG 2018 [5], ESGCTP 2018 [16]
Colon	Low-risk adenomas	ESGE 2020 [forthcoming]

ACG, American College of Gastroenterology; ASGE, American Society for Gastrointestinal Endoscopy; AUGIS, Association of Upper Gastrointestinal Surgeons [of Great Britain and Ireland]; BSG, British Society of Gastroenterology; EHMSG, European Helicobacter and Microbiota Study Group; ESGCTP, European Study Group on Cystic Tumours of the Pancreas; ESGE, European Society of Gastrointestinal Endoscopy; ESP, European Society of Pathology; SPED, Sociedade Portuguesa de Endoscopia Digestiva.

ping surveillance in the absence of dysplasia. Extended monitoring up to 80 years of age can be considered on an individual basis [4].

Stomach

Premalignant conditions: intestinal metaplasia and atrophy

STATEMENT
ESGE recommends against surveillance for patients with intestinal metaplasia in the antrum unless additional risk factors are present, such as persistent *Helicobacter pylori* infection, incomplete metaplasia, or a family history of gastric cancer.

The risk of developing gastric adenocarcinoma parallels the severity and extent of gastric atrophy and intestinal metaplasia. There are no randomized controlled trials (RCTs) proving the benefit of surveillance, but observational data indicate that periodic endoscopy can lead to earlier diagnosis and improved survival [30].

Patients diagnosed with IM at a single location of the stomach, i. e., antrum or corpus only, have only a slightly higher risk of gastric cancer than the general population [31]. For patients with mild to moderate atrophy restricted to the antrum, there is no evidence to support surveillance [6, 31]. The slightly increased risk of gastric cancer does not justify follow-up in most patients, particularly if a high-quality EGD with biopsies has excluded advanced stages of IM or atrophy [6]. Consequently, two recent guidelines published in 2019 do not recommend surveillance for patients with IM limited to the antrum unless additional risk factors for gastric adenocarcinoma are present, such as persistent *H. pylori* infection, incomplete metaplasia, or a family history of gastric cancer. In these latter cases, 3-year surveillance with chromoendoscopy and guided biopsies is advisable [6, 13].

Fundic gland polyps

STATEMENT
ESGE recommends against endoscopic surveillance for fundic gland polyps, unless there are suspicious endoscopic features, such as ulceration or aberrant surface pattern, or in the context of hereditary syndromes.

Fundic gland polyps are the most frequent type of polyps in the stomach, ranging from 13 % to 77 % of such polyps. The BSG is the only scientific society that provides detailed recommendations for the management of gastric polyps [13]. Polypectomy of fundic gland polyps may be appropriate when the size is > 1 cm, the location is antral, or when worrisome findings such as ulceration or aberrant surface pattern are present. The risk of malignancy in fundic gland polyps without suspicious features or a context of familial adenomatous polyposis is remarkably low, which makes surveillance unnecessary [13].

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Subepithelial lesions

STATEMENT
ESGE suggests against surveillance of gastrointestinal leiomyomas, lipomas, and antral pancreatic rests, regardless of the size of these lesions, provided that they have typical ultrasonographic features and are asymptomatic.

Leiomyomas are among the most common benign neoplasms of the GI tract, mostly located in the esophagus and with a prevalence of 0.08 % – 0.43 % [32]. Leiomyomas originate in the muscular layer (muscularis mucosae). According to the 2017 American Society for Gastrointestinal Endoscopy (ASGE) guidelines, leiomyomas do not require endoscopic surveillance and therapy should only be considered when there are associated symptoms [14]. An observational cohort study published in 2018 endorses this statement as the authors did not find any case of malignant transformation and growth of esophageal leiomyomas was minimal (5 mm over 70 months of follow-up) [33].

Lipomas are benign neoplasms made of adipose tissue, most frequently arising in the colon and gastric antrum [14], with a prevalence of around 0.2 %. Similarly, asymptomatic lipomas located in the gastrointestinal tract do not require monitoring [14].

Pancreatic rests often present as subepithelial lesions with normal overlying mucosa and a central umbilication, and the prevalence is between 0.6 % and 13.7 % [34]. ASGE suggests that a firm, round subepithelial lesion with central umbilication along the greater curve of the antrum of the stomach can be considered diagnostic for a pancreatic rest. Further investigation with endoscopic ultrasound and follow-up is not required when these typical features are encountered [14]. However, the differential diagnosis from other subepithelial lesions such as gastrointestinal stromal tumor (GIST), may be challenging when these typical features are not fully met [35].

Duodenum

Peptic ulcer disease

STATEMENT
ESGE recommends against routine endoscopic surveillance in duodenal peptic ulcer, unless symptoms persist despite adequate therapy.

Duodenal ulcer is found in approximately 2 % – 13 % of EGDs [20], and is among the most frequent causes of upper gastrointestinal bleeding. Duodenal ulcers are extremely unlikely to be malignant, and ASGE does not recommend routine performance of biopsy [15]. Surveillance EGD is of low clinical significance when symptoms resolve after PPI treatment, along with the eradication of *H. pylori* if present and discontinuation of nonsteroidal anti-inflammatory drugs (NSAIDs) [8, 15]. In fact, approximately 90 % of these ulcers will heal [36]. On the other hand, surveillance EGD should be proposed to patients with duodenal ulcer with persisting symptoms, to exclude refractory peptic ulcers and ulcers with a nonpeptic cause [15].

Pancreas

STATEMENT
ESGE suggests against surveillance of confirmed pancreatic serous cystic neoplasms.

Pancreatic cysts are often incidentally detected in patients who undergo abdominal imaging, with a reported prevalence that ranges from 2 % on abdominal computed tomography (CT) scan to up to 44 % on magnetic resonance cholangiopancreatography [5]. Some pancreatic cysts have a risk of malignant transformation and follow-up may allow early detection of pancreatic cancer. On the other hand, this risk seems to be low, and it is unclear whether there is any survival benefit of surveillance over no surveillance. Also, the cost of cyst surveillance is high, and there are no cost – effectiveness analyses. Therefore, adequate management is still controversial, given that most evidence is graded as very low and given the lack of RCTs. There are several guidelines available that recommend differing approaches [5, 16, 37, 38].

At diagnosis, endoscopic ultrasound (EUS) and cyst fluid analysis should be considered in cysts in which the diagnosis is unclear, when there are high-risk stigmata (principally larger size, solid component, and a dilated main pancreatic duct), and when results may change patient management. EUS-guided sampling is not recommended for lesions ≤ 10 mm in diameter, which is below the minimum required size to obtain fluid for at least one analysis [39]. In the absence of concerning features, surveillance of neoplastic cysts (mainly side-branch intraductal papillary mucinous neoplasms) is guided by cyst size.

There are very little data to support lengthening or discontinuation of surveillance. All guidelines recommend against follow-up in patients unfit for surgery [5, 16, 37, 38].

Serous cystic neoplasms are a benign entity without malignant potential, accounting for up to 16 % of pancreatic cystic neoplasms in surgical series [40]. The 2018 guidelines from the European Study Group on Cystic Tumours of the Pancreas recommend that asymptomatic serous cystic neoplasms should be followed up for 1 year [16]; two guidelines agreed that periodic surveillance is not necessary after that time, and a symptom-based follow-up is preferable [5, 16].

At present, only the American Gastroenterological Association (AGA) guideline recommends halting surveillance of pancreatic cysts after 5 years of follow-up if there are no high-risk features and the size of the cyst remains stable [38]. The remaining published guidelines contemplate ending surveillance only if a patient is no longer a surgical candidate and in those aged over 75 – 85 years, in an approach similar to that for colorectal cancer (CRC) screening [5, 16, 37, 38].

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Colorectal polyps

Post-polypectomy surveillance

STATEMENT
ESGE recommends against endoscopic surveillance for patients with hyperplastic polyps in the rectosigmoid, 1–4 adenomas <10 mm with low-grade dysplasia, or a serrated polyp <10 mm without dysplasia.

Patients with hyperplastic polyps in the rectosigmoid, 1–4 adenomas <10 mm with low-grade dysplasia, or a serrated polyp <10 mm without dysplasia do not require surveillance and can re-enter screening programs or be referred for colonoscopy in 10 years, as this subgroup of patients holds a similar risk of CRC as the general population [7]. It should be remarked that these recommendations only apply when a high-quality baseline colonoscopy with removal of all detected neoplastic lesions has been performed [7].

Age and surveillance

STATEMENT
ESGE recommends against surveillance of GI conditions in individuals over 80 years old who have less than 10 years of life expectancy and poor general health status.

As a consequence of improved living conditions and advances in medical science, life expectancy in Western countries has progressively increased in the last century. This raises the question of whether it would be best to surveil all patients at all ages, or whether some reasonable commonsense rules for discontinuing endoscopic surveillance might be applied. We believe that the latter option is preferable for at least two reasons. First, endoscopy is an invasive procedure and carries some risks for adverse events that are more frequent and serious in elderly people [41]. Second, the endoscopic surveillance of a condition or lesion with additional carcinogenic risk is justified only in patients who might benefit from an early diagnosis, in the sense that they are fit for curative or prognosis-changing treatment. From this point of view, some existing guidelines recommend discontinuation of endoscopic surveillance among older patients [7, 42].

Conclusion

Unnecessary surveillance procedures are commonplace in daily practice. In this Position Statement, we have briefly collated the various guidelines' recommendations regarding clinical scenarios where surveillance endoscopic procedures should not be performed or can be discontinued. Adherence to these recommendations would lead to a substantial reduction in costs and iatrogenic adverse events.

However, we must acknowledge that the evidence supporting these recommendations is still low as no RCTs evaluating nonsurveillance strategies have been conducted. Moreover, other GI changes and variations were considered during the development of this document, such as esophageal papillomas, duodenal gastric intestinal metaplasia or brunneroma, and ileal lymphoid hyperplasia. However they are not included as the available guidelines made no definitive suggestions concerning them.

Therefore, case-by-case analysis, considering the key factors of age, co-morbidity, life expectancy, and patient preference, remains essential to tailoring surveillance strategies. More research in this field is mandatory to promote the economic viability of health care systems and to ensure that the benefits of surveillance outweigh the risks.

ESGE position statements represent a consensus of best practice based on the available evidence at the time of preparation. They may not apply in all situations and should be interpreted in the light of specific clinical situations and resource availability. Further controlled clinical studies may be needed to clarify aspects of these statements, and revision may be necessary as new data appear. Clinical consideration may justify a course of action at variance to these statements. ESGE position statements are intended to be an educational device to provide information that may assist endoscopists in providing care to patients. They are not rules and should not be construed as establishing a legal standard of care or as encouraging, advocating, requiring, or discouraging any particular treatment.

Competing interests

J.E. van Hooft has received lecture fees from Medtronics (2014–2015, 2019) and Cook Medical (2019), and consultancy fees from Boston Scientific (2014–2017); her department has received research grants from Cook Medical (2014–2019) and Abbott (2014–2017). M. Dinis-Ribeiro, L. Frazzoni, L. Fuccio, C. Hassan, T. Ponchon, and E. R. de Santiago have no competing interests.

References

[1] Peery AF, Crockett SD, Murphy CC et al. Burden and cost of gastrointestinal, liver, and pancreatic diseases in the United States: Update 2018. Gastroenterology 2019; 156: 254–272.e11

[2] O'Morain N, O'Morain C. The burden of digestive disease across Europe: Facts and policies. Dig Liver Dis 2019; 51: 1–3

[3] Yang JD, Mannalithara A, Piscitello AJ et al. Impact of surveillance for hepatocellular carcinoma on survival in patients with compensated cirrhosis. Hepatology 2018; 68: 78–88

[4] Weusten B, Bisschops R, Coron E et al. Endoscopic management of Barrett's esophagus: European Society of Gastrointestinal Endoscopy (ESGE) Position Statement. Endoscopy 2017; 49: 191–198

[5] Elta GH, Enestvedt BK, Sauer BG et al. ACG Clinical Guideline: Diagnosis and management of pancreatic cysts. Am J Gastroenterol 2018; 113: 464–479

This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.

[6] Pimentel-Nunes P, Libânio D, Marcos-Pinto R et al. Management of epithelial precancerous conditions and lesions in the stomach (MAPS II): European Society of Gastrointestinal Endoscopy (ESGE), European Helicobacter and Microbiota Study Group (EHMSG), European Society of Pathology (ESP), and Sociedade Portuguesa de Endoscopia Digestiva (SPED) guideline update 2019. Endoscopy 2019; 51: 365–388

[7] Hassan C, Antonelli G, Dumonceau J et al. Post-polypectomy colonoscopy surveillance: updated European Society of Gastrointestinal Endoscopy (ESGE) guideline. Endoscopy. 2020; 52: in press

[8] Beg S, Ragunath K, Wyman A et al. Quality standards in upper gastrointestinal endoscopy: a position statement of the British Society of Gastroenterology (BSG) and Association of Upper Gastrointestinal Surgeons of Great Britain and Ireland (AUGIS). Gut 2017; 66: 1886–1899

[9] Evans JA, Early DS. ASGE Standards of Practice Committee. et al. The role of endoscopy in Barrett's esophagus and other premalignant conditions of the esophagus. Gastrointest Endosc 2012; 76: 1087–1094

[10] Katz PO, Gerson LB, Vela MF. Guidelines for the diagnosis and management of gastroesophageal reflux disease. Am J Gastroenterol 2013; 108: 308

[11] Fitzgerald RC, di Pietro M, Ragunath K et al. British Society of Gastroenterology guidelines on the diagnosis and management of Barrett's oesophagus. Gut 2014; 63: 7–42

[12] Shaheen NJ, Falk GW, Iyer PG et al. ACG Clinical Guideline: Diagnosis and management of Barrett's esophagus. Am J Gastroenterol 2016; 111: 30–50; quiz 51

[13] Banks M, Graham D, Jansen M et al. British Society of Gastroenterology guidelines on the diagnosis and management of patients at risk of gastric adenocarcinoma. Gut 2019; 68: 1545–1575

[14] Standards of Practice Committee. Faulx AL, Kothari S, Acosta RD et al. The role of endoscopy in subepithelial lesions of the GI tract. Gastrointest Endosc 2017; 85: 1117–1132

[15] ASGE Standards of Practice Committee. Banerjee S, Cash BD, Dominitz JA et al. The role of endoscopy in the management of patients with peptic ulcer disease. Gastrointest Endosc 2010; 71: 663–668

[16] European Study Group on Cystic Tumours of the Pancreas. European evidence-based guidelines on pancreatic cystic neoplasms. Gut 2018; 67: 789–804

[17] Rusu R, Ishaq S, Wong T et al. Cervical inlet patch: new insights into diagnosis and endoscopic therapy. Frontline Gastroenterol 2018; 9: 214–220

[18] Orosey M, Amin M, Cappell MS. A 14-year study of 398 esophageal adenocarcinomas diagnosed among 156,256 EGDs performed at two large hospitals: an inlet patch is proposed as a significant risk factor for proximal esophageal adenocarcinoma. Dig Dis Sci 2018; 63: 452–465

[19] Peitz U, Vieth M, Evert M et al. The prevalence of gastric heterotopia of the proximal esophagus is underestimated, but preneoplasia is rare – correlation with Barrett's esophagus. BMC Gastroenterol 2017; 17: 87

[20] Zagari RM, Eusebi LH, Rabitti S et al. Prevalence of upper gastrointestinal endoscopic findings in the community: A systematic review of studies in unselected samples of subjects. J Gastroenterol Hepatol 2016; 31: 1527–1538

[21] Gyawali CP, Kahrilas PJ, Savarino E et al. Modern diagnosis of GERD: the Lyon Consensus. Gut 2018; 67: 1351–1362

[22] Muthusamy VR, Lightdale JR, Acosta RD et al. The role of endoscopy in the management of GERD. Gastrointest Endosc 2015; 81: 1305–1310

[23] Hanna S, Rastogi A, Weston AP et al. Detection of Barrett's esophagus after endoscopic healing of erosive esophagitis. Am J Gastroenterol 2006; 101: 1416–1420

[24] Modiano N, Gerson LB. Risk factors for the detection of Barrett's esophagus in patients with erosive esophagitis. Gastrointest Endosc 2009; 69: 1014–1020

[25] Crockett SD, Lipkus IM, Bright SD et al. Overutilization of endoscopic surveillance in nondysplastic Barrett's esophagus: a multicenter study. Gastrointest Endosc 2012; 75: 23–31.e2

[26] Voutilainen M, Färkkilä M, Juhola M et al. Specialized columnar epithelium of the esophagogastric junction: prevalence and associations. The Central Finland Endoscopy Study Group. Am J Gastroenterol 1999; 94: 913–918

[27] Itskoviz D, Levi Z, Boltin D et al. Risk of neoplastic progression among patients with an irregular Z line on long-term follow-up. Dig Dis Sci 2018; 63: 1513–1517

[28] Thota PN, Vennalaganti P, Vennelaganti S et al. Low risk of high-grade dysplasia or esophageal adenocarcinoma among patients with Barrett's esophagus less than 1 cm (irregular Z line) within 5 years of index endoscopy. Gastroenterology 2017; 152: 987–992

[29] Ko MS, Fung KZ, Shi Y et al. Barrett's esophagus commonly diagnosed in elderly men with limited life expectancy. J Am Geriatr Soc 2016; 64: e109–e111

[30] O'Connor A, McNamara D, O'Moráin CA. Surveillance of gastric intestinal metaplasia for the prevention of gastric cancer. Cochrane Database Syst Rev 2013: CD009322

[31] Mera RM, Bravo LE, Camargo MC et al. Dynamics of Helicobacter pylori infection as a determinant of progression of gastric precancerous lesions: 16-year follow-up of an eradication trial. Gut 2018; 67: 1239–1246

[32] Aurea P, Grazia M, Petrella F et al. Giant leiomyoma of the esophagus. Eur J Cardiothorac Surg 2002; 22: 1008–1010

[33] Codipilly DC, Fang H, Alexander JA et al. Subepithelial esophageal tumors: a single-center review of resected and surveilled lesions. Gastrointest Endosc 2018; 87: 370–377

[34] Trifan A, Târcoveanu E, Danciu M et al. Gastric heterotopic pancreas: an unusual case and review of the literature. J Gastrointest Liver Dis 2012; 21: 209–212

[35] Brand B, Oesterhelweg L, Binmoeller KF et al. Impact of endoscopic ultrasound for evaluation of submucosal lesions in gastrointestinal tract. Dig Liver Dis 2002; 34: 290–297

[36] Ford AC, Gurusamy KS, Delaney B et al. Eradication therapy for peptic ulcer disease in Helicobacter pylori-positive people. Cochrane Database Syst Rev 2016; 4: CD003840

[37] Tanaka M, Fernández-Del Castillo C, Kamisawa T et al. Revisions of international consensus Fukuoka guidelines for the management of IPMN of the pancreas. Pancreatology 2017; 17: 738–753

[38] Vege SS, Ziring B, Jain R et al. American gastroenterological association institute guideline on the diagnosis and management of asymptomatic neoplastic pancreatic cysts. Gastroenterology 2015; 148: 819–822; quiz e12-13

[39] Dumonceau J-M, Deprez PH, Jenssen C et al. Indications, results, and clinical impact of endoscopic ultrasound (EUS)-guided sampling in gastroenterology: European Society of Gastrointestinal Endoscopy (ESGE) Clinical Guideline – Updated January 2017. Endoscopy 2017; 49: 695–714

[40] Zhang X-P, Yu Z-X, Zhao Y-P et al. Current perspectives on pancreatic serous cystic neoplasms: Diagnosis, management and beyond. World J Gastrointest Surg 2016; 8: 202–211

[41] Day LW, Kwon A, Inadomi JM et al. Adverse events in older patients undergoing colonoscopy: a systematic review and meta-analysis. Gastrointest Endosc 2011; 74: 885–896

[42] Hassan C, Wysocki PT, Fuccio L et al. Endoscopic surveillance after surgical or endoscopic resection for colorectal cancer: European Society of Gastrointestinal Endoscopy (ESGE) and European Society of Digestive Oncology (ESDO) Guideline. Endoscopy 2019; 51: 266–277

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