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CLINICAL APPROACH TO THE BENIGN EPITHELIAL GASTRIC POLYPS

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SUMMARY – Among all endoscopically removed gastric polypoid lesions, more than 75% are true gastric epithelial polyps. They are divided into hyperplastic, glandular cystic and adenomatous polyps. Adenomatous polyp is a true neoplastic polyp, and hyperplastic polyp carries a risk of malignant alteration. Based on the present knowledge, an algorithm for the clinical management of benign epithelial gastric polyps is proposed.

Key words: *Polyps, diagnosis; Polyps, therapy; stomach diseases, pathology; Endoscopy, gastrointestimal*

Introduction

Gastric polyps are pedunculated or sessile lesions that project into the gastric lumen[1]. True gastric epithelial polyps account for more than 75% of all endoscopically removed gastric polypoid lesions[2]. Although data on the prevalence of gastric polyps still are quite inconsistent, they do not seem to be common[1]. Gastric polyps are found in 0.12% to 3.38% of the patients undergoing upper endoscopy[1,3]. However, gastric polyps are an important entity because of their malignant potential[4-7].

Although patients with gastric polyps may present with nonspecific symptoms such as upper gastrointestinal tract bleeding, abdominal pain, or gastric outlet obstruction, up to 50% of the polyps are detected incidentally on endoscopy for the symptoms unrelated to the presence of gastric polyp.

Endoscopic appearance is an unreliable predictor of the polyp histology. As the foci of dysplasia may be missed on biopsy, gastric polyps, and larger ones in particular, should be completely removed to obtain definite diagnosis[8].

Recent data show that intestinal metaplasia, atrophic gastritis and/or *Helicobacter (H.) pylori* infection can be associated with certain types of polyps and at the same time recognized as markers of their malignancy. On the basis of these facts, some new therapeutic approaches have been proposed[5,9-12]. So, biopsy of the nonpolypoid surrounding gastric mucosa has also been inaugurated as a new standard[11].

Classification and Malignant Potential

According to the World Health Organization (WHO), the hyperplastic and neoplastic types of benign epithelial gastric polyps can be distinguished[3]. Hyperplastic polyps are further divided into two different subtypes, i.e. polypoid foveolar hyperplasia, a lesion that has no malignant potential at all, and typical hyperplastic polyp. However, this equivocal definition of 'hyperplasiogenous' (hyperplastic) polyp remains quite inconsistent. Stolte *et al.*[2] stress that differentiation of hyperplastic polyps from foveolar hyperplasia is important regarding their different malignant potential, showing disagreement with the WHO classification in which these two polyp types are considered together

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under the term 'hyperplastic polyp'. We also find histologic differentiation very important, especially concerning its impact on further therapy and surveillance.

Hyperplastic polyps account for approximately 25% of gastric polyps. They may be located anywhere, sizing 1 cm on an average[12]. They are considered regenerative in their nature, and in fact, they are a proliferative-reparative response to chronic inflammation and epithelial injury in most of the cases associated with chronic active gastritis and concomitant infection with *H. pylori*[1,4,13]. Eradication of *H. pylori* infection associated with the presence of hyperplastic gastric polyp resulted in complete polyp regression in more than 40% of patients, especially the polyps of <1 cm in size[13]. In larger series, the rate of liability of hyperplastic gastric polyps to malignant changes varied from 0.3% to 7.1%, mean 2.1%, even in those smaller than 2 cm[3.4]. Despite the fact that a strong relationship between malignant transformation and the size of hyperplastic gastric polyps has not been elucidated, and that it has also been described for adenomatous polyps, dysplasia and carcinoma are more likely to be found in the polyps of >2 cm in diameter[2].

The incidence of synchronous or metachronous carcinomas in patients with solitary hyperplastic polyps varies considerably from 1.2% to 28%[1,13]. They are closely related to the presence of atrophic gastritis, and atrophy progression is more rapid in patients with hyperplastic polyps than in control subjects without polyps[1]. Focal intestinal metaplasia is found in 16% of cases[11].

The neoplastic type is adenomatous polyp found in 10% of gastric polyps in most series[5]. The percentage of focal carcinoma in adenomas has been reported to range between 1.4% and 75.0%, mean 41.0%. During a 49-month follow-up, malignant transformation was found in 11% of the gastric adenomas examined[5].

The risk of carcinomatous transformation is size-dependent: a polyp size of >2 cm has been suggested to be critical on determination of the adenomatous polyp malignant potential[2]. The presence of severe epithelial dysplasia, villous appearance, and large size have also been found to correlate with an increased malignant potential[5]. Although no close relationship between *H. pylori* infection and gastric adenoma has been demonstrated[13], *H. pylori* eradication has been suggested as being likely to inhibit the progression of gastric adenoma to carcinoma[9]. However, the adenoma-carcinoma sequence has not been established, although the bcl-2 deletion, p-53 mutation and c-erbB2 gene amplification have been found to occur at a relatively high frequency in patients with gastric adenomas. It has not yet been fully clarified whether these are just late events in cancer development. Sulfomucin appears to correlate well with the malignant appearance of gastric polyps, and the relationship between the subtype of intestinal metaplasia in the polyps with sulfomucin production and gastric carcinoma is evident[5]. Follow-up is mandatory in these patients[3,12].

Gastric adenoma is usually associated with synchronous gastric carcinoma in 8% to 59% of cases[3,6].

The third type is known as fundic gland polyp or Elster's glandular cyst[2]. Some authors have not taken it into account since the thesis on their hamartomatous but not hyperplastic or neoplastic nature is still valid[3]. These are most common gastric polyps (50%), and are always associated with normal gastric mucosa[2,12]. Fundic gland polyps have no malignant potential. Their significance lies in their correlation with colonic adenoma, so the patient should undergo colonoscopy[1].

Therapeutic Approach

The introduction of endoscopy with its associated facilities for biopsy and polypectomy have greatly improved the diagnosis and therapy of gastric polyps, which, on the basis of radiologic diagnosis, were treated surgically in the pre-endoscopic era[2]. Current methodology includes detailed examination of the stomach after good insufflation, which is necessary to diagnose small fundic polyps, and biopsies of the polyp as well as of the surrounding mucosa[12]. While most endoscopists agree that large polyps or those associated with metaplasia should be removed either endoscopically or surgically, the management of small or asymptomatic gastric polyps remains a controversial issue. Forceps biopsy is usually sufficient when polyps are relatively small, generally smaller than 1 cm. Some authors recommend 'jumbo' biopsy forceps for diminutive polyps (5 mm)[8]. Histologic diagnosis of foveolar hyperplasia excludes polypectomy, however, in case of hyperplastic or adenomatous polyps larger than 1 cm endoscopic polypectomy, typing of gastritis and regular follow-up examination are the recommended procedures[14]. As hyperplastic polyps occur in association with various forms of chronic gastritis, particularly autoimmune gastritis and *H. pylori* gastritis, eradication of the latter is also recommendable. It can lead to the complete regression of hyperplastic polyps, particularly of those of <1 cm in diameter[11]. On the other hand, particularly in case of larger polyps, polypectomy seems to be a definite treatment[13].

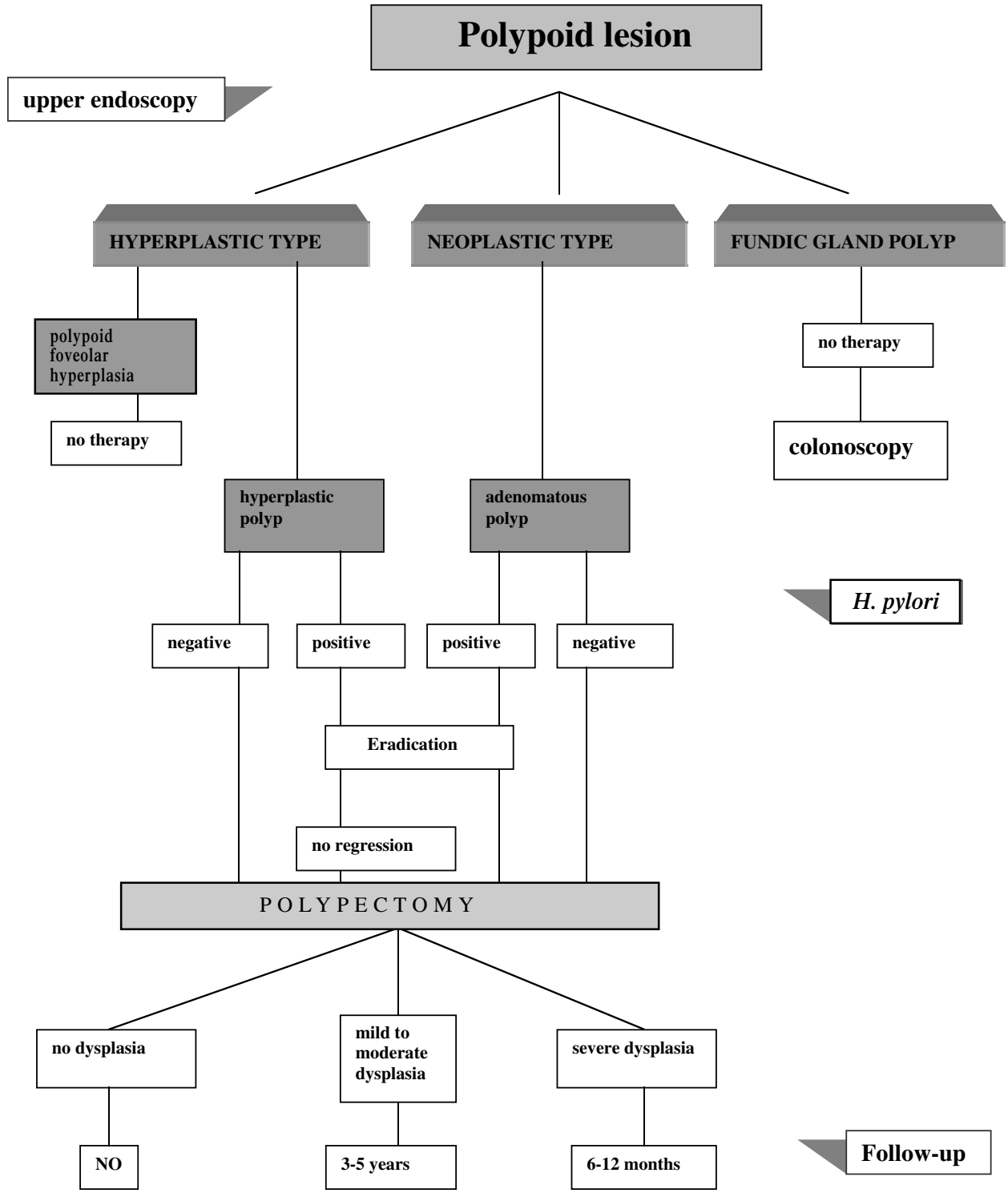

Fig. 1. Optimal strategy for the management of benign epithelial gastric polyps

These techniques are generally safe, and can be performed in an outpatient setting. The complications (bleeding, perforation, and abdominal pain) are rarely encountered[8]. An important issue is the fact that, in larger polyps, forceps biopsy sampling for polyp histology suffers from 'sampling error', and may fail to characterize the polyp histology correctly[8,15]. It has been reported that histologic diagnosis of biopsy material was modified in 75% of cases after polypectomy[8]. Therefore, if a gastric polyp is larger than 1 cm, then polypectomy is strongly indicated. Irrespective of the type and grade of dysplasia, adenomas of gastric mucosa should always be removed *in toto*[14]. The follow-up after polypectomy or even mucosectomy should be planned on the basis of histologic finding and grading of dysplasia. Follow-up is not necessary if no dysplasia was found. In case of mild to moderate dysplasia, follow-up is recommended in 3- to 5-year intervals. If severe dysplasia is found, the follow-up period is 6 months. An optimal strategy for the management of patients with benign epithelial gastric polyps is presented in Fig. 1.

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Sažetak

KLINIČKI PRISTUP BENIGNIM EPITELIJSKIM ŽELUČANIM POLIPIMA

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Od svih endoskopski odstranjenih polipoidnih izraslina želuca oko 75% čine pravi želučani polipi. Prema histološkom tipu dijele se na hiperplastične, žlijezdane cistične i adenomatozne polipe. Adenomatozni polipi su prave neoplazme, dok hiperplastični polipi nose rizik maligne promjene. Na osnovi sadašnjih spoznaja prikazan je algoritam liječenja želučanih epitelijskih polipa.

Ključne riječi: *Polipi, dijagnoca; Polipi, terapija; Želučane bolesti, patologija; Endoskopija, gastrointestinalna*