

## Gastric polyps

J.C. Debongnie

Department of Medicine, Clinique Saint Pierre, 1340 Ottignies, Belgium.

### Abstract

Endoscopy allows a better diagnosis and treatment of gastric polyps. Current methodology includes a detailed examination of the stomach after good insufflation, necessary to diagnose small fundic polyps, biopsies of the polyp as well as of the surrounding mucosa (antrum and fundus). Endoscopy allows a preliminary diagnosis based on the number, location and size of the polyps. Resection is not performed at initial endoscopy as it is not necessary for all polyps and may be risky if vascular lesions are confused with polyps. Glandulocystic fundic polyps are the most frequent (50%), are always associated with a normal gastric mucosa and sometimes with omeprazole. Resection and follow-up are not indicated. Hyperplastic polyps represent 25% of gastric polyps, are located everywhere, with a mean size of 1 cm, and sometimes erosions or superficial necrosis. Gastritis is present, *Helicobacter pylori* is frequent and eradication may cause regression or disappearance of polyps. The small risk of cancer and the risk of bleeding increase with size. Polypectomy and follow-up are thus indicated in most cases. Adenomatous polyps, although similar in appearance to hyperplastic polyps concerning macroscopy and gastritis have a higher risk of cancer in the polyp or in the stomach. Polypectomy and follow-up are thus mandatory. (*Acta gastroenterol. belg.*, 1999, 62, 187-189).

**Key words :** gastric polyps, *helicobacter pylori*, omeprazole.

### Introduction

The relationship between gastric polyps and gastric cancer as well as the advent of endoscopic polypectomy increased the interest in gastric polyps. The World Health Organization (WHO) established a classification of cancer and polyps of the stomach. We will use this classification (Table 1) with the modifications introduced by M. Stolte (1). We will use for the gastric mucosa the Sydney classification with the modifications introduced at Houston (2). Presently, endoscopy allows the detection of smaller polyps and the relationship between polyps and the surrounding mucosa is enlightened by the present classifications.

### Diagnosis

During endoscopy, methodology is important in the detection and in the analysis of gastric polyps. To visualize small fundic polyps, it is important to have a good insufflation of the stomach, with intravenous antispasmodics if necessary. After a careful examination of the stomach and duodenum (villous duodenal polyps are dangerous companions of benign fundic polyps in familial adenomatous polyposis), it is necessary to biopsy polyps as well as the gastric mucosa. We advise several biopsies for a single and large polyp and a single

Table 1. — Classification of gastric polyps

Neoplastic < 20%		Pseudo-tumoral > 80%	
Epithelial		Fundic polyps	50%
benign ADENOMA	9%	(glandulo-cystic)	
malignant			
Carcinoïds	2%	Hyperplastic polyps	25%
Mesenchymatous (submucosa)		Fibroinflammatory polyps	3%

biopsy for each of multiple small polyps. Then, mapping of the gastric mucosa is obtained by sampling the antrum (two biopsies), the fundus (two biopsies) and the angulus to diagnose gastritis and *Helicobacter pylori* infection. Resection should not be performed at the initial endoscopy. Indeed, it is not useful for the frequent fundic polyp and it might be dangerous in vascular polyps.

The location, number and size of polyps is useful in a preliminary differential diagnosis before the results of biopsies (Table 2).

### Etiology

The cause of gastric polyps is unknown. Besides the female sex clearly associated with fundic as well as hyperplastic polyps, two etiologic factors have been recently proposed: omeprazole for fundic polyps, *Helicobacter pylori* for hyperplastic polyps.

Around twenty cases associating omeprazole and fundic (glandulocystic) polyps have been described, first in Australia (3), lately in Belgium (4). Those polyps appear during long-term treatment (at least eight months), may grow if the treatment is continued, and may disappear after cessation of the drug. Those polyps are rare among patients on omeprazole and constitute only a small proportion of fundic polyps.

The prevalence of *Helicobacter pylori* in hyperplastic polyps varies between 50 and 90%. This high prevalence as well as the disappearance of those polyps after eradication (5-8) suggest a causal role of *Helicobacter pylori* in hyperplastic polyps. Eradication should be proposed to patients with gastric hyperplastic polyps.

The importance of genetic factors is reflected in familial adenomatous polyposis: fundic polyps are

Reprints and adress : J.C. Debongnie, Clinique Saint Pierre, Department of Medicine, 1340 Ottignies, Belgium.  
Knokke Symposium : Polyps of the GI tract. March 7, 1998.

Table 2. — Gastric polyps at endoscopy

	Fundic	Hyperplastic	Adenomatous	Fibroinfl.
1/ Location mean size	F*	A + F	A + F	F
2/ Taille moyenne	5	11	12	10
3/ Number	multiple 65%	unique 65%	unique 85%	unique 90%
4/ Aspect	shiny	polype	polype	nodule
5/ Erosions	-	+	-	(+)

\* F : fundus or corpus

present in around 50% of patients, while antral adenoma are less frequent and duodenal villous lesions more dangerous.

### Description of frequent polyps (Table 1)

#### A. Fundic polyps

Fundic polyps are found mainly in the fundus, but also in the body of the stomach and are characterized by glandular cysts. Described by Elster twenty years ago (8), they represent around 50% of gastric polyps and seem increasingly frequent. They are small, with a mean size of 5 mm, multiple and shiny. The surrounding fundic and antral mucosa is histologically normal and thus not colonized by *Helicobacter pylori*. Gastric secretory function reflected by acid secretion, gastrin and pepsinogen blood levels is normal. The association with omeprazole has been mentioned above. An increased prevalence of colonic polyps has been suggested but not formally established. In the absence of gastritis, the risk of gastric cancer is not increased. It is not necessary to resect those polyps although a biopsy may constitute a resection for small polyps.

#### B. Hyperplastic polyps

Hyperplastic polyps represent 25% of gastric polyps, are often single, with a mean size of 1 cm and located everywhere in the stomach. Erosions or a white coat of superficial necrosis are frequent and explain the occult bleeding sometimes observed.

They arise in a stomach with pangastritis, very often associated with intestinal metaplasia and atrophy, explaining hypoacidity and hypergastrinemia (9). The prevalence of gastric cancer in those polyps is 2,1% in a recent European series (10), varies between 1,5 and 4,2% in other series. The risk of cancer is 7% elsewhere in the stomach of patients with hyperplastic polyps (10). Polypectomy and follow-up should thus be considered. Eradication of *Helicobacter pylori*, frequently present (see above), may cause the regression or the disappearance of the polyps and possibly decrease the cancer risk.

#### C. Adenomatous polyps

Representing 10% of gastric polyps, adenomatous polyps are single, seated anywhere in the stomach, with

a mean size slightly, above 1 cm. Gastric mucosa is inflamed (pangastritis) and always metaplastic and atrophic (9), with hypoacidity and hypergastrinemia. The atrophy is sometimes auto-immune, causing pernicious anaemia.

The risk of cancer of the polyp is 10%, and also 10% elsewhere in the stomach (10). The polyp should thus be resected and follow-up is necessary.

#### D. Fibroinflammatory polyps

Those rare (3%) antral polyps are covered with normal mucosa, present as nodules with a central depression or erosion if larger than 1 cm. They are thus often confused with an accessory pancreas. The endoscopic ultrasound appearance is characteristic : they are located in the second or third sonographic layer (deep mucosa or upper submucosa), have an homogeneous hypoechogenic aspect with indistinct margins (11).

### Treatment

Treatment is dictated by etiologic factors and by the risks associated to polyp size and to cancer risks. Those factors are mostly unknown at the initial endoscopy and endoscopic resection should thus not be performed during this examination that includes biopsies of the polyp and of the gastric mucosa.

Elimination of etiologic factors is logic. In growing fundic polyps, cessation of omeprazole may allow regression (4). Eradication of *Helicobacter pylori* allows regression of hyperplastic polyps (6-8). Resection may be performed six months later if no regression is observed.

The risk of bleeding exists for large polyps and of obstruction for prepyloric polyps. Indeed the first pathologic description of a gastric polyp by Morgagni in the eighteenth century concerned an obstructing prepyloric polyp prolapsing in the duodenum and causing obstruction. Resection should thus be proposed for polyps larger than 1 cm and for large pediculated prepyloric polyps.

Cancer risk is related to the type of polyp and to the associated gastritis (12). It is not increased in fundic polyps observed in normal gastric mucosa. The risk concerns some hyperplastic polyps and mainly adenomatous polyps. The risk is then not limited to big polyps but exists for any polyp larger than 0,5 cm (13).

The risks of polypectomy in the colon include perforation and bleeding. In the stomach, the muscular coats are thicker than in the colon and, consequently, the risk of perforation is lower. However, the risk of bleeding is higher (14), the reason of which is unclear. It is wise to inject the basis of the polyp with a saline solution and diluted epinephrine.

Follow-up is not necessary for fundic polyps, useful for hyperplastic polyps and mandatory for adenomatous polyps. It is advisable if the initial examination did not allow a precise diagnosis.

## Conclusions

The diagnosis of gastric polyps includes a careful and complete endoscopic examination with full insufflation of the stomach, a pathologic examination of any polyp and of the fundic and antral mucosa. Treatment includes elimination of presumed etiologic factors and to resect polyps associated to risks mainly hyperplastic and adenomatous polyps. Follow-up is when necessary as well as when the initial biopsies did not allow a precise diagnosis.

## Selected references

1. STOLTE M., STICHT T., EIDT S., EBERT, FINKENZELLER G. Frequency, location and age and sex distribution of various types of gastric polyp. *Endoscopy*, 1994, **26** : 659-665.
2. DIXON M.F., GENTA R.M., YARDLEY J.H., CORREA P. and the participants in the international workshop on the histopathology of gastritis, HOUSTON 1994. Classification and grading of gastritis : the updated Sydney system. *Am. J. Surg. Pathol.*, 1996, **20** : 1161-1181.
3. GRAHAM J.R. Gastric polyposis : onset during long-term therapy with omeprazole. *Med. J. Aust.*, 1992, **157** : 287-288.
4. VAN VLIERBERGHE H., DEVOS M., DE COCK G., CUVELIER C., ELEWAUT A. Fundic gland polyps : three other case reports suggesting a possible association with acid suppressing therapy. *Acta Gastroenterol. Belg.*, 1997, **60** : 240-242.
5. VEEREMAN W.G., FERRELL L., OSTROFF J.W., HEYMAN M.B. Hyperplastic gastric polyps associated with persistent *Helicobacter pylori* infection and active gastritis. *Am. J. Gastroenterol.*, 1990, **85** : 1395-1397.
6. MOCEK F.W., WARD W.J., WOLFSON S.E., RUMAGE W.J., WIEMAN T.J. Elimination of recurrent hyperplastic polyps by eradication of *Helicobacter pylori*. *Ann. Intern. Med.*, 1994, **120** : 1007-1008.
7. SUZUKI S.H., OHKUSA T., SHIMOI K., HORIUCHI T., FUJIKI K., TAKASHIMIZU I. Disappearance of multiple hyperplastic polyps after the eradication of *Helicobacter pylori*. *Gastrointest. Endosc.*, 1997, **46** : 566-568.
8. SUGANO K., FUKUSHIMA Y., YAZAKI Y. Regression of hyperplastic polyps of the stomach by eradication of *Helicobacter pylori*. *Gastroenterology*, 1997, **112** : 1300.
8. ELSTER R. Histologic classification of gastric polyps. *Curr. Top. Pathol.*, 1979, **65** : 77-93.
9. NAKANO H., PERSSON B., SLEZAK P. Study of the gastric mucosal background in patients with gastric polyps. *Gastrointest. Endosc.*, 1990, **36** : 39-42.
10. ORLOWSKA J., JAROSZ D., PACHLEWSKI J., BUTRUK E. Malignant transformation of benign epithelial gastric polyps. *Am. J. Gastroenterol.*, 1995, **90** : 2152-2159.
11. MATSUSHITA M., HAJIRO K., OKAZAKI K., TAKAKUWA H. Gastric inflammatory fibroid polyps : endoscopic ultrasonographic analysis in comparison with the histology. *Gastrointest. Endosc.*, 1997, **46** : 53-57.
12. SCHMITZ J.M., STOLTE M. Gastric polyps as precancerous lesions. *Gastroint. Clin. N. Amer.*, 1997, **7** : 29-46.
13. GINSBERG G.G., AL-KAWAS F.H., FLEISHER D.E., REILLY H.F., BENJAMIN S.B. Gastric polyps : relationship of size and histology to cancer risk. *Am. J. Gastroenterol.*, 1996, **91** : 714-717.
14. HUGHES R.W. Diagnosis and treatment of gastric polyps. *Gastroint. Endosc. Clin. N. Amer.*, 1992, **2** : 457-467.