

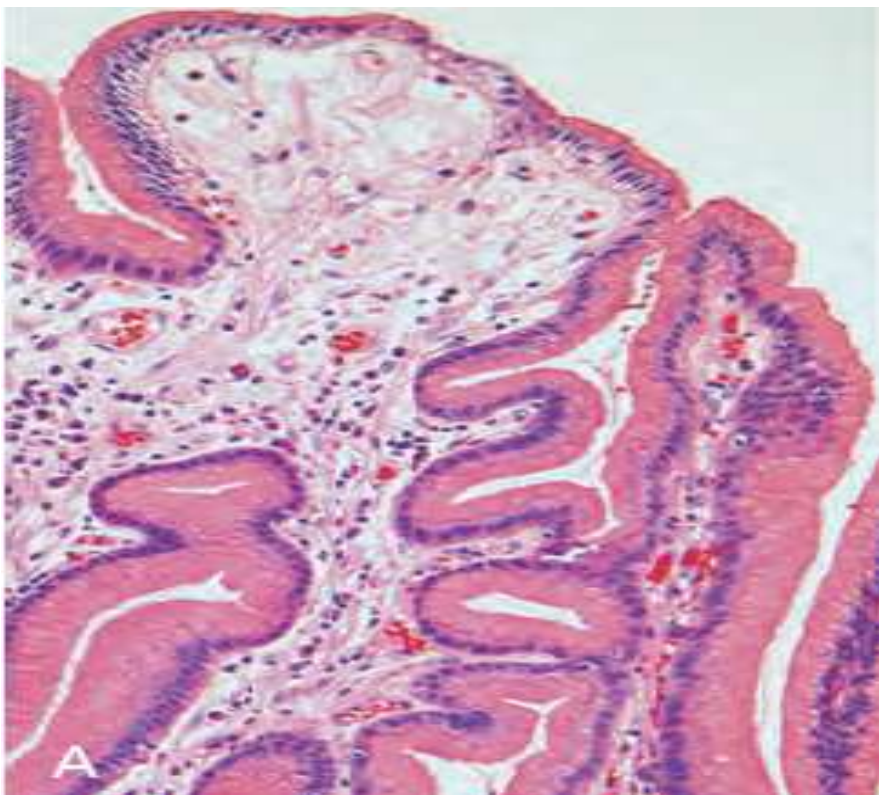
Hyperplastic Polyps : localised area in mucosa that have the hyperplastic changes and make bulging or a finger like projection called polyp called inflammatory polyp not true polyp

In IBD the granulation tissue (newly formed blood vessels +edema) may cause bulging in the surface of the mucosa

Up to 75% of all gastric polyps are inflammatory or hyperplastic polyps. Their incidence is correlated with the regional prevalence of H. pylori infection.

These polyps are most common in individuals between 50 and 60 years of age and usually develop in association with chronic gastritis

The risk of dysplasia in inflammatory polyps ranges from 1% to 20% and increases sharply in pedunculated polyps greater than 1 cm in diameter



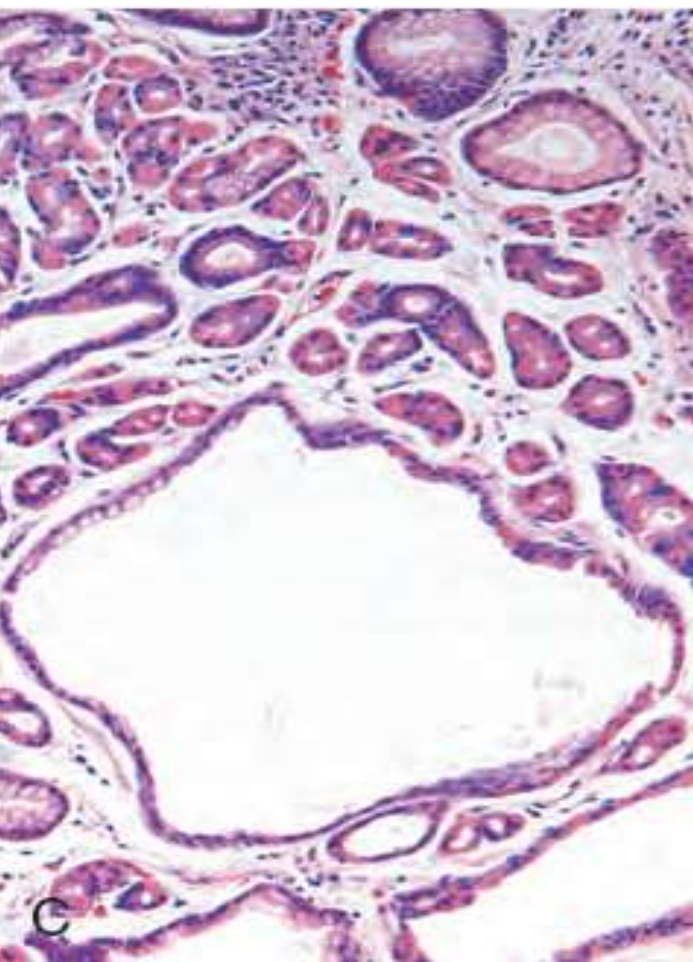
Hyperplastic polyps with angulation and upward extension toward the lumen

Fundic Gland Polyps : protruding up over the level of surface
Macroscopically: smooth surface with bulging of the mucosa
Microscopically: irregular dilated glands lined as the gastric gland with parietal cells and others
Maybe secondary for the use of PPIs that lead to decrease acid and increase Gastrin lead to hyperplasia

no increased risk of neoplasia

in individuals with germline mutations in the APC gene (the cause of familial adenomatous polyposis) lead to transfer the beta catenin to the proteasome for destruction this pathway called [wnt] that normally is under control or the DNA repair gene MUTYH

No significant symptoms but may cause blood loss(iron deficiency anemia)



Fundic gland polyp dilated irregular glands lined by
Red color cells parietal cells
Pale color is a mucus secreting cells

Gastric Adenoma:

Most gastric adenomas develop in a background of chronic gastritis with atrophy and intestinal metaplasia, with the exception of those associated with germline mutations in APC or MUTYH

They represent up to 10% of all gastric polyps . Their frequency increases progressively with age

Gastric adenomas have a greater risk of cancer when large and must be managed more aggressively than colonic adenomas.

prevalence among different populations that parallels the incidence of gastric adenocarcinoma

Patients are usually between 50 and 60 years of age, and males are affected three times more often than females.

The risk of adenocarcinoma within gastric adenomas correlates with size and is particularly elevated in lesions greater than 2 cm in diameter

Morphology: stratification of the nuclei and hyperchromasia and loss of mucin and eosinophilia cytoplasm

Gastric Adenocarcinoma

Adenocarcinoma is the most common malignancy of the stomach, comprising more than 90% of all gastric cancers.

It's 2 type morphologically intestinal and diffuse

intestinal type, which tends to form bulky masses this mass is ulcerated(because the fragility of tumor tissue and the inadequate blood supply for the highly proliferative tissue) , glandular structures

diffuse type:

which infiltrates and thickens the gastric wall.

- * Stomach is stiff or rigid loss its elasticity with no mass later on the mass

- * may formed in mucosa and entire wall of the stomach and called **linitis plastica**

- * also the cancer forming cells have a morphology with intracellular secretion and make vacuoles

Early symptoms of both types of gastric adenocarcinoma resemble those of chronic gastritis and peptic ulcer disease, including epigastric or retrosternal pain, dyspepsia, dysphagia, and nausea. As a result, these tumors are often discovered at advanced stages,

Gastric cancer incidence varies markedly with geography. In Japan, Chile, Costa Rica, and Eastern Europe, the incidence is up to 20-fold higher than in North America, northern Europe, Africa, and Southeast Asia.

Sites most commonly involved include supraclavicular sentinel lymph nodes (Virchow node), periumbilical lymph nodes (Sister Mary Joseph nodule), ovaries (Krukenberg tumor) especially in diffuse or signet ring type, the left axillary lymph node, and the pouch of Douglas which lead to ascites (imbalance between the intra and extra vascular fluid)

Gastric cancer is more common in lower socioeconomic groups and in individuals with multifocal mucosal atrophy and intestinal metaplasia.

peptic ulcer disease is associated with reduced risk of gastric cancer, but patients who have had partial gastrectomies (cut of jejunum and bind it with the duodenum lead to made a blind loop and inflammatory process then cancer) for peptic ulcer disease have a slightly higher risk of developing cancer in the residual gastric stump.

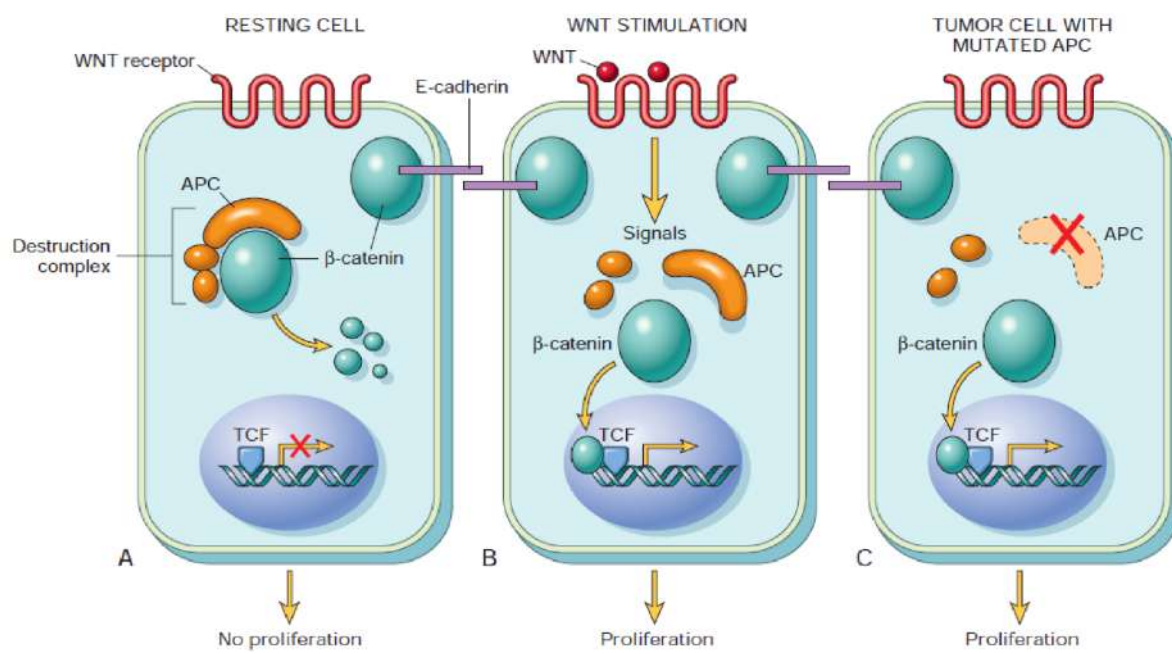
Adenocarcinoma of the stomach was the most common cause of cancer death in the United States in 1930. However, since that time the incidence has fallen by 85%, and, gastric adenocarcinoma now accounts for only 2.5% of cancer deaths in the United States. Decreased gastric cancer incidence is largely attributed to reduced rates of H. pylori infection and primarily relates to intestinal-type cancers in young ages

migrants from high- to low-risk regions maintain the risk of their original country, but their children have gastric cancer rates similar to those in the new country of residence.

Consistent with an environmental, rather than genetic
Associated with intestinal type

Although the overall incidence of gastric adenocarcinoma is falling, cancer of the gastric cardia is on the rise.

This is probably related to Barrett esophagus and may reflect the increasing incidence of chronic GERD



When there's no ligand bind to the receptor β catenin in resting cells bind to APC and destroyed by proteasome

In cancer cells there's a mutation that lead to APC loss of function and increase levels of beta catenin and without signal the cell proliferate

There's an intracellular connection between cells by Ecadherine encoded by CDH1 gene in the same time while it extra cellular bind the cells intracellular it bind to b catenin to control it levels When there's a signal for proliferation by wnt pathway it prevent the binding of APC and beta catenin when beta catenin levels increas it pass to nucleus and activate the transcription factor TCF to proliferate

Pathogenesis

E-cadherin loss is a key step in the development of diffuse gastric cancer. Lead to defect in E cadherin and beta catenin binding so

↑beat-catenin which lead to cell proliferation

Tumor in single cell infiltration

CDH1 mutations are also common in sporadic and familial invasive lobular carcinoma of the breast

Familial cases with loss of CDH1 function a thing similar to familial gastric cancer syndrome (more than one mass and in one family more than one member is affected)

Sporadic cases (most cases) has an cdh1 mutation in 50% the reminding 50% has a mutation in CDH1 but by silencing genes (epigenetic factors) normal gene but silenced

Not associated by H.pylori

intestinal-type gastric cancers are strongly associated with mutations that result in increased signaling via the Wnt pathway. These include loss-of-function mutations in the adenomatous polyposis coli (APC) tumor suppressor gene and gain-of-function mutations in the gene encoding β -catenin.

FAP patients with germline APC mutations have an increased risk of intestinal-type gastric cancer

Morphologically:

the lesser curvature is involved more often than the greater curvature.

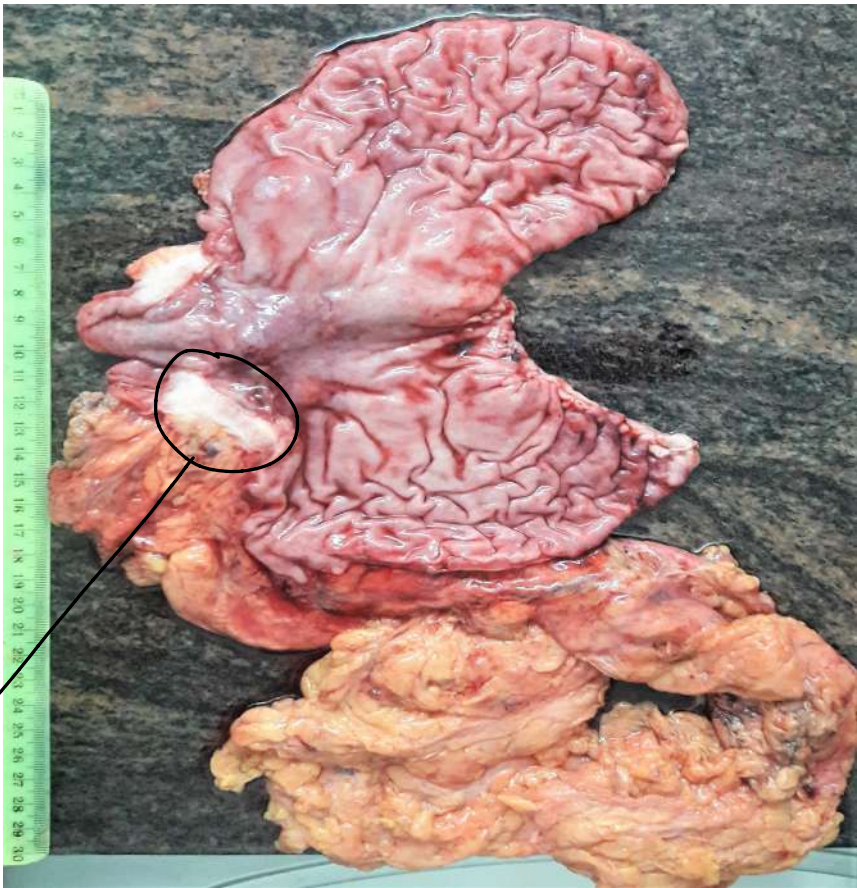
Diffuse type occur in younger patients than intestinal type

Have a non specific symptoms

Prognosis associated with stage of cancer , in Japan there's a screening by gastroscope to detect the stage



Partial gastrectomy



Pyloric Sphincter

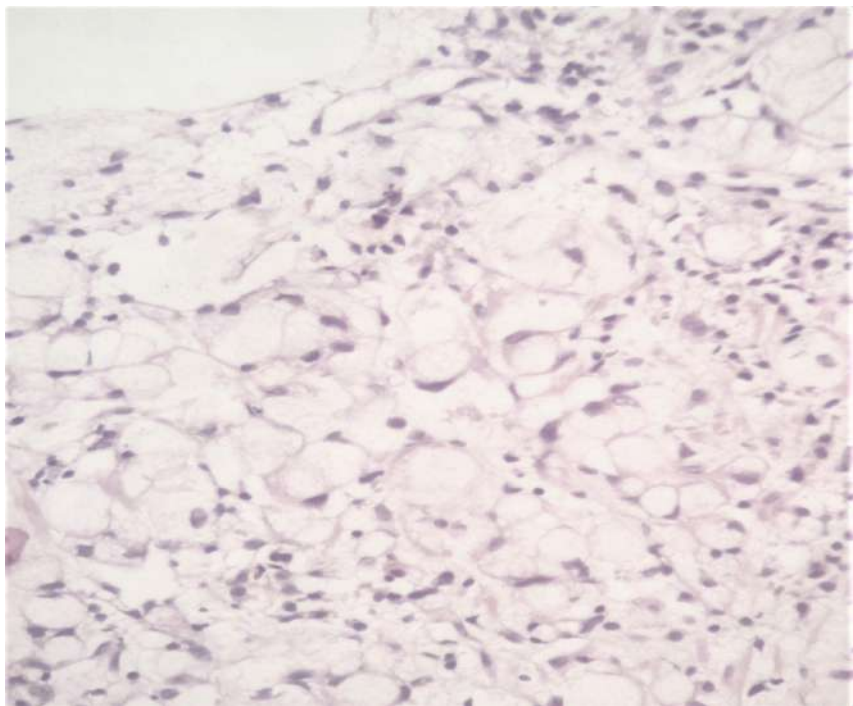


Flattening + Thickening of the mucosa + ulcer

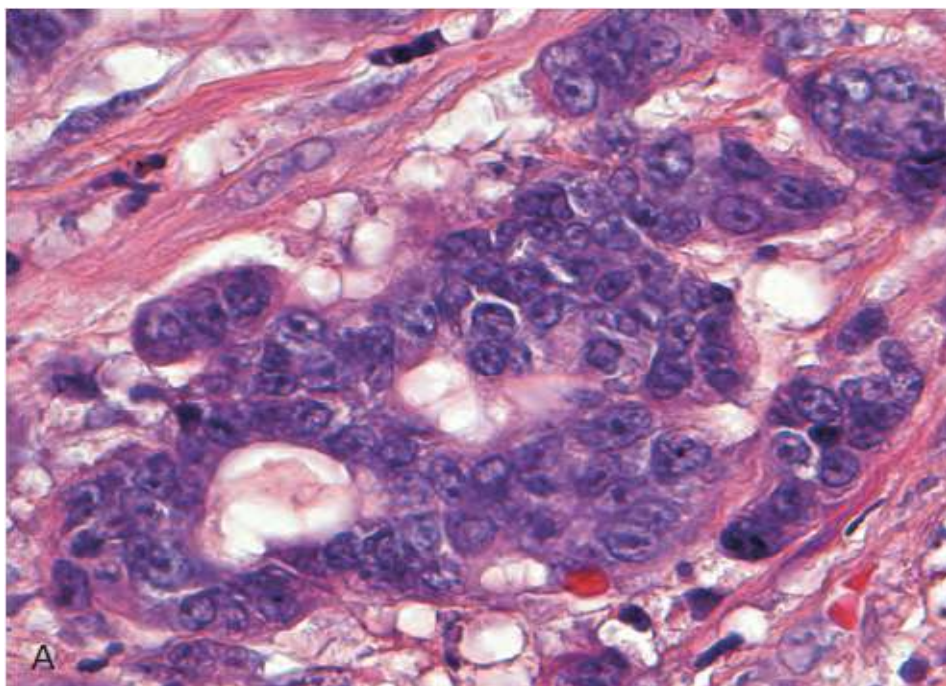
في صورة آليسة الدكتور
عرضها وأنا من
عارضة على وحدة
بشع بس الطم
أنه الظلام لبتاد بس
٠٠



diffuse type gastric adenocarcinoma + linitis plastica



diffuse type
 +
 single cell (loss of E-cadherin)
 +
 Intracellular mucin
 inside the vacuoles
 it enlarges till push
 the nucleus against
 the plasma membrane
 (signet-cell)



intestinal type
 +
 glandular structure
 +
 nuclear enlargement
 +
 Prominence nucleoli
 +
 hyperchromasia

Lymphoma

The presence of lymphoid aggregation in stomach is abnormal (no malt in stomach) the immune system in stomach is as a scattered lymphocytes and plasma cells or other type of cells

Malt type lymphoma or as the WHO is a marginal zone lymphoma

Lymphoma is from the lymph node normally but if from other location it called "extranodal marginal zone lymphoma

If it has the malt characteristics it called malt type lymphoma maybe an extra marginal zone lymphoma or called MALToma

H.pylori or immunosuppressant patients are with high risk of lymphoma

5% of gastric malignancy

When there's antigenic stimulation for the lymphocyte the lymphocytes response to it and increase the number of it (B and T cell) so it proliferate and to make sure survival that done by a transcription factor called NF- κ B

Antigen- dependent activation of NF- κ B in normal B and T cells requires both BCL-10 and MALT1,

H. pylori-induced inflammation may trigger NF- κ B activation through the MALT1/BCL-10 pathway in MALTomas

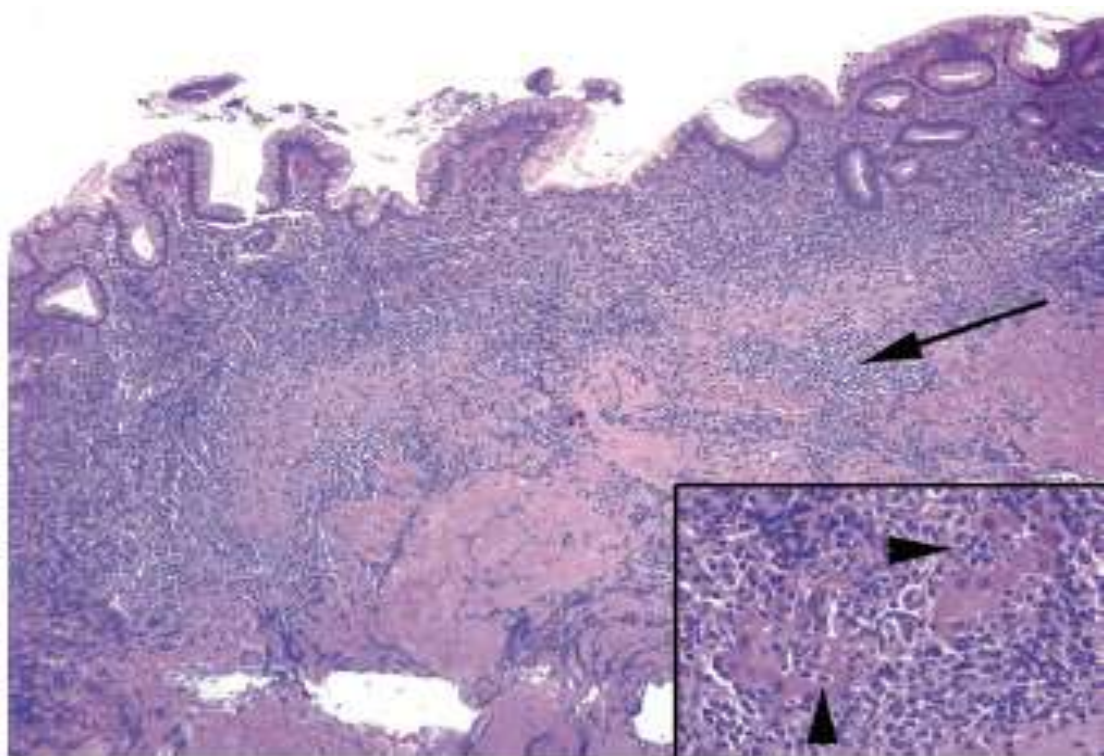
By the eradication therapy the stimulation stop and the lymphoma regression

Lymphocyte translocation t(14;18)(1;14) (11;18) they cause lymphoma without antigenic stimulation So continuous activation of NF- κ B and there's no eradication by antibiotic

Transformation into higher grade tumors often associated with additional genetic changes such as inactivation of the tumor suppressor genes p53 and p16

Lymphocyte may attack the glandular structure and form a lymphoepithelial lesion (gland invaded by lymphocytes) not specific but help in diagnosis

Monoclonal tumour at the beginning they are identical then there's some mutation



gastric mucosa
is completely
infiltrated
by small
rounded
lymphocyte

Neuroendocrine Neoplasms

- 1- Those previously termed carcinoid tumors are now properly referred to as low-grade neuroendocrine tumors,
- 2- They arise from enteroendocrine cells in GIT
- 3- Atrophy lead to acid decrease and that is signal for enteroendocrine cells “specifically G cell” and have gastrin in some cases that is out of control some nodules formed called hyperplasia of G cell that may become a cancer due to the continuous induction of G cells
- 4- In immunohistochemistry : 2 important proteins are Chromogranin a and CD56
- 5- May be in lung , small intestine, stomach with atrophied gastritis and continuous stimulation of gastrin
- 6- Microscopically it's small nodule (.5 to 2cm) but although it's a small nodule and low grade it has malignant behaviour and can metastasise
- 7- when it release the vasoactive substance in GIT (Gut blood supply pass by portal vein to liver) in liver the vasoactive substance destroyed at the liver and there's no effect for the vasoactive substance
When the GIT release high amount of vasoactive substance overwhelm the liver capacity (collectively carcinoid syndrome **flushed patients**) or when the tumour metastatic outside the liver may metastasise to lung the effect of the vasoactive substance appear
Which called “first pass effect”
- 8- good prognosis if there's no metastasis or if the tumour is low grade