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# Acute upper Gastrointestinal bleeding

Clinical Presentation and Investigation

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# **Value of diagnosis of UGIB**

**Identify upper gastrointestinal bleeding (UGIB) or not?**

**Identify the specific cause of UGIB.**

**Assess severity of bleeding .**

**Identify patients at high risk of rebleeding and mortality.**

**Minimize complication.**

**Minimize length of hospitalization**

**the phases of diagnosis and treatment  
acute Upper gastrointestinal  
bleeding should include**

- History.**
- Examination.**
- Investigation.**
- Resuscitation.**
- Definitive therapy**

priority of the above 5 phases depends  
e answer of the following 3 questions :

- 1-Is there airway obstruction?
- 2-Is there active bleeding?
- 3-Is the patient hypovolemic ?

If the **answer** of any of these questions is **yes**, then resuscitation must take priority and then proceed with history, examination and investigation in the usual order.

**s, the sequence of events should be to**

assess rapidly

Measure pulse and blood pressure.

Establish vascular access .

If hemodynamically **stable** , obtain history, carry  
examination, and proceed with investigations.

If hemodynamically **unstable**, resuscitate , then  
proceed as for the stable situation.

## Clinical picture of UGIB

Loss of **500 to 1000 cc** without a noticeable clinical picture.

Loss of **1000 cc** of blood will produce orthostatic hemodynamic changes.

Massive loss of about one-third of the total blood volume (i.e. **2000 cc**) can cause death.

Losses spread over a **-24-hour period or longer-** every is possible

## clinical picture of UGIB (cont.)

### presentation of Acute upper gastrointestinal Bleeding depends on:

• rate and duration of the bleeding .

• severity of bleeding.

• site of bleeding .

• etiology of bleeding.

• age of the patient.

• associated co morbid condition.



**Patients with Acute upper Gastrointestinal bleeding may be presented with one or all the following symptoms:**

**Haematemesis.**

**Melena.**

**Haematochezia.**

**Shock and disturbed level of consciousness.**

**Abdominal pain (cramps).**

# History

## History of bleeding:

\*\* -**Hematemesis**: amount, colour (large amount with bright red and clots indicate severe bleeding while small amount with coffee grounds indicate mild attack).

It should be differentiated from **hemoptysis** by the following table:

	<b>Hemoptysis</b>	<b>Hematemesis</b>
the	Usually, there is chest trouble	Usually, disturbance of digestive system
the	<ul style="list-style-type: none"><li>- cough</li><li>- bright red blood due to oxyhemoglobin.</li><li>- frothy, mixed with air.</li><li>- alkaline</li></ul>	<ul style="list-style-type: none"><li>- vomiting.</li><li>- dark coffee ground due to acid hematin.</li><li>- mixed with food.</li><li>- acidic.</li></ul>

## History (cont.)

**Melena:** which is liquid, jet black or black stool with a reddish tinge, with offensive smell. A contact time of blood in the gut for 8 hours is required for melena.

should be differentiated from **drug** induced blackish stool as in patient with chemotherapy (where stool tends to be blackish with a dark grey rather than black

## ory (cont.)

**Hematochezia:** which means fresh red blood in cases with massive upper gastrointestinal bleeding because of rapid GI transit.

should be differentiated from **bleeding per rectum** by positive gastric aspirate of blood and the presence of risk factor for UGIB eg. Alcohol, smoking, NSAID use, previous attack of UGIB. other clues for UGIB include hyperactive bowel

**History (cont.)**

**Other gastrointestinal symptom**

**Vomiting:** the time of onset of vomiting is important, if the vomiting preceded the bleeding, a diagnosis of **Mallory Weiss tear** is likely.

**gastric pain** : if chronic , it may suggest peptic **ulceration** while a history of heartburn and **regurgitation** indicates gastro esophageal **reflux**, which can lead to hemorrhage from oesophagitis.

**odynophagia:** may indicate cancer oesophagus

## History (cont.)

Symptoms of **great blood loss**

include syncope, lightheadedness, dizziness, nausea, sweating, and palpitation.

## Drug history

Especially steroids and nonsteroidal anti-inflammatory drugs and also anti-coagulant therapy.

## History (cont.)

### Past history

Physical stress (ie. Trauma, CNS injury ,  
infections and fever), history of bleeding  
tendency, peptic ulcer, oesophageal  
varices, operations (gastrointestinal,  
cardiac and aortic) , chronic diseases  
(cardiac, hepatic , renal, and or  
respiratory ) because this has prognostic  
significance.

### Social history

**Final diagnosis and key features of bleeding due to portal hypertension**

\*

Final diagnosis	Type of bleeding	Key feature
Esophagogastric varices	Abrupt onset	Hematemesis
Colonic varices	Abrupt onset	Melena Hematochezia Visceral symptom
Splanchnic varices	Abrupt onset	Abdominal pain Acute anemia in absence of overt bleeding
Ulcer at stoma site ulceration	Indolent	Hematemesis Melena
Hypertensive angiopathy: arteriopathy arteriovenous arteriovenous arteriovenous	Chronic	Melena / occult Melena Occult Hematochezia



# Examination

In the first instance, a **clear airway** must be ensured, as the patients- especially comatose- may have aspirated blood clot or vomitus giving rise to stridor and hypoxia.

Assess any external **signs of blood loss** as clots of the vomitus, smell of melena and blood on the clothes and feet.

Measurement of **pulse and blood pressure**: A systolic blood pressure less than 100 mm Hg is highly significant. A blood pressure in the normal range, however, does not preclude hypovolemia especially in young fit patients who can compensate and in the

## Examination (cont.)

Assess **hemodynamic state** rapidly. The clinically shocked patient has a tachycardia, a weak pulse, sweating, pupil dilatation, hypoxia, and cold extremities.

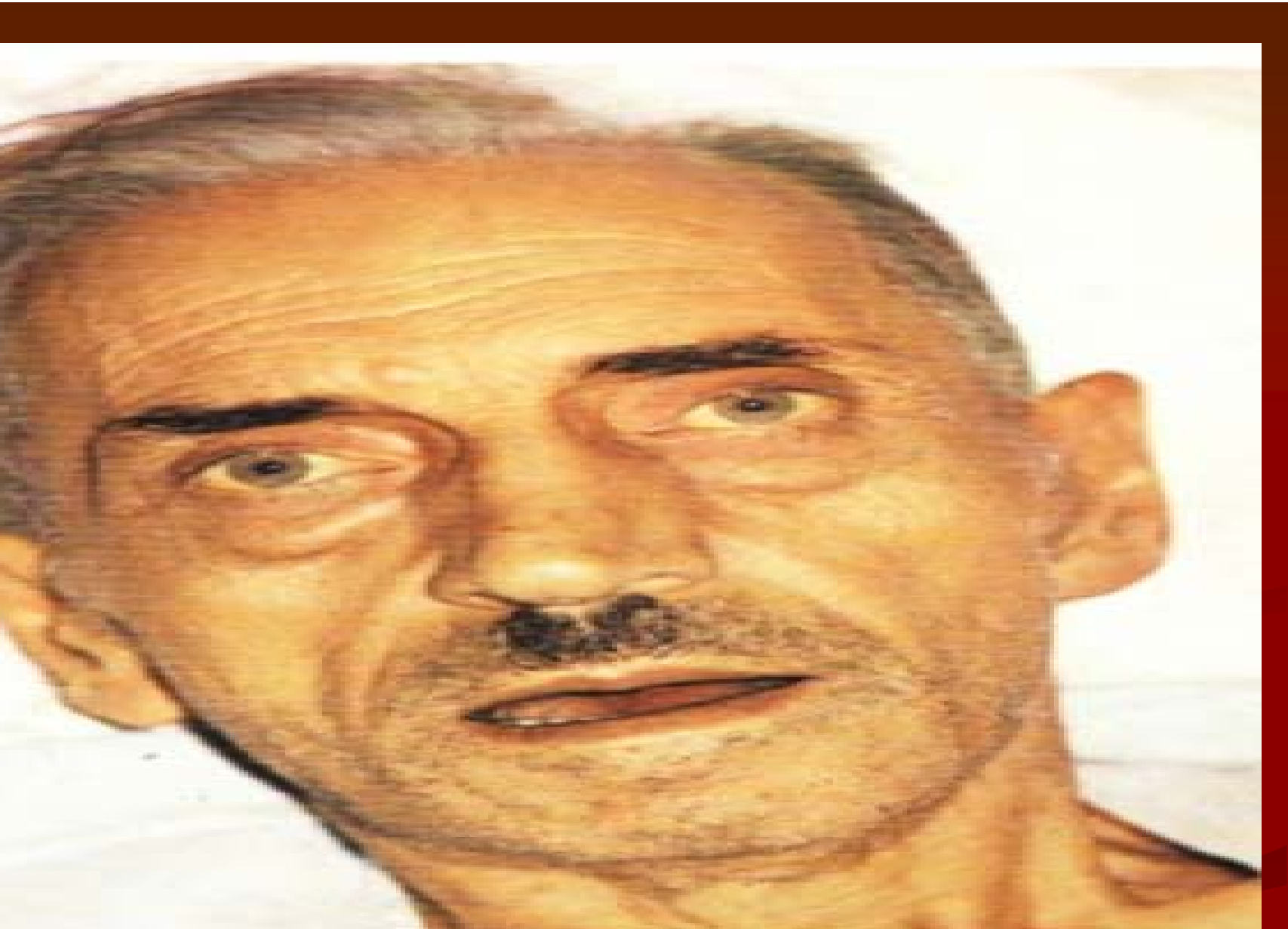
**Systemic examination** for pallor, lymph node enlargement, signs of bleeding tendency and telangiectasia, signs of chronic liver disease, such as palmar erythema and spider nevi.

## **Examination (cont.)**

**Abdominal examination** for epigastric tenderness (which might indicate peptic ulceration), liver cirrhosis, splenomegaly, caput medusae and ascites. Assess bowel sounds and abdominal masses.

**Rectal examination** is mandatory especially if there is no melena.

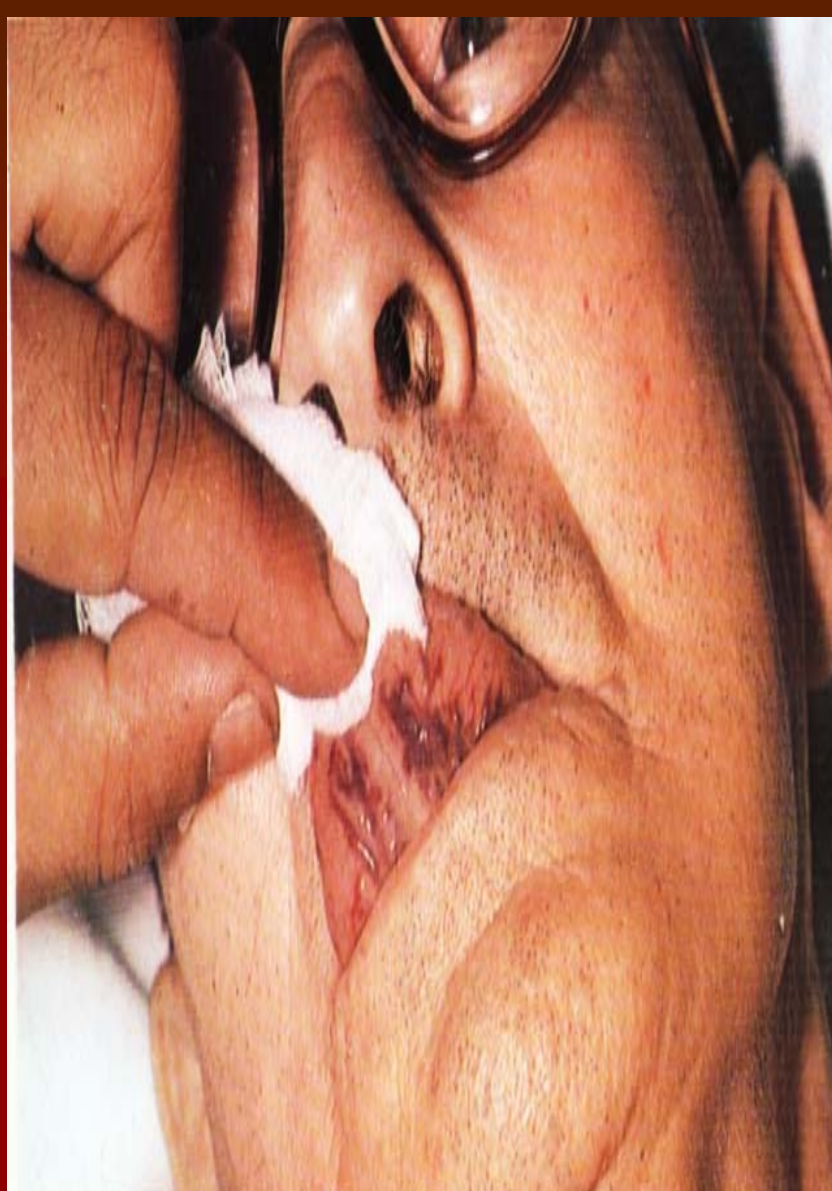
**Cardiac examination** for aortic stenosis, perhaps





















# Investigation

**Blood examination** for blood count, cross matching, clotting screen, electrolytes, calcium, glucose, kidney and liver function tests.

**In the setting of acute blood loss, several laboratory values changes** are observed:

- Obviously, the **hematocrit level** should decrease however, the value may not be related with real blood loss because of hemodilution and equilibration with

## Investigation (cont.)

- Mild **leukocytosis and thrombocytosis** often develop within 6 hours after the onset of bleeding.

- The blood **urea nitrogen** level may be elevated in UGIB. This occurs because of breakdown of blood proteins to urea by intestinal bacteria coupled with a reduction in the

## Investigation (cont.)

**Chest radiograph, ECG and arterial blood gas analysis** are needed for those with cardio respiratory cases.

**Abdominal ultrasonography** for diagnosis of splenomegaly , ascites, portal vein thrombosis and hepatocellular carcinoma .

**Nasogastric(NG) tube:** If an upper GI source is suspected, an NG tube is passed into the stomach. If red or a coffee-grounds appearance is found, saline lavage is performed; this procedure allows estimation of the amount of bleeding and clears the stomach for

## Investigation (cont.)

**Upper endoscopy**: is the **initial** procedure of choice for the evaluation of acute UGIB. Ideally, patient should be stabilized before endoscopy. Endoscopy allows identification the **source of bleeding**, may **treat** the bleeding site and provide **prognostic indicators** regarding the risk of Rebleeding. However, upper GI endoscopic findings are **nondiagnostic in about 10% of cases**.

If endoscopy has failed to reveal a bleeding source or if the bleeding cannot be controlled, **angiography** is used for diagnosis and therapy. Angiography has been shown to depict the



## Investigation (cont.)

**Endoscopic ultrasound (EUS)** may be helpful in differentiating large gastric folds from gastric ulcers. It may permit measurement of the diameter of the underlying artery beneath the surface of the bleeding ulcer.

**Gastrointestinal capsule endoscopy:** a newly developed, minimally invasive tool used mainly for the study of GIT lesions. Its use in diagnosing active bleeding is under trial especially in the management of obscure gastrointestinal bleeding.

Marco pennazio, **Gastrointest Endoscopy Clin N**  
(,2006, 16: 251-266).

## Investigation (cont.)

**Double-Balloon Enteroscopy** is a new endoscopic procedure that can potentially examine and facilitates therapeutic intervention of the entire small bowel.

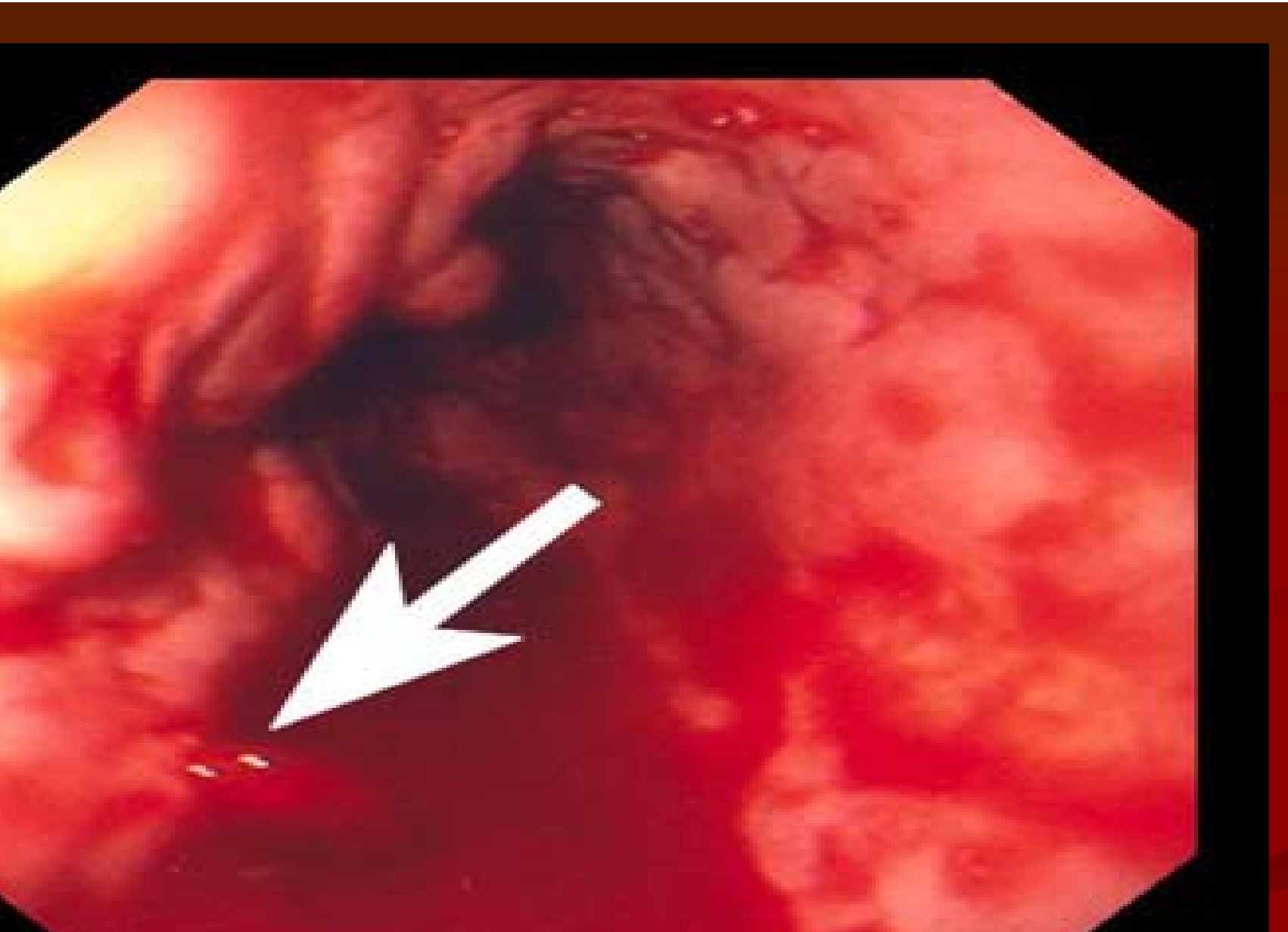
Simon and shahab Mehdizadeh,  
**Gastrointestinal Endoscopy Clin N**  
**Engl J Med, 2006, 16: 363-376).**

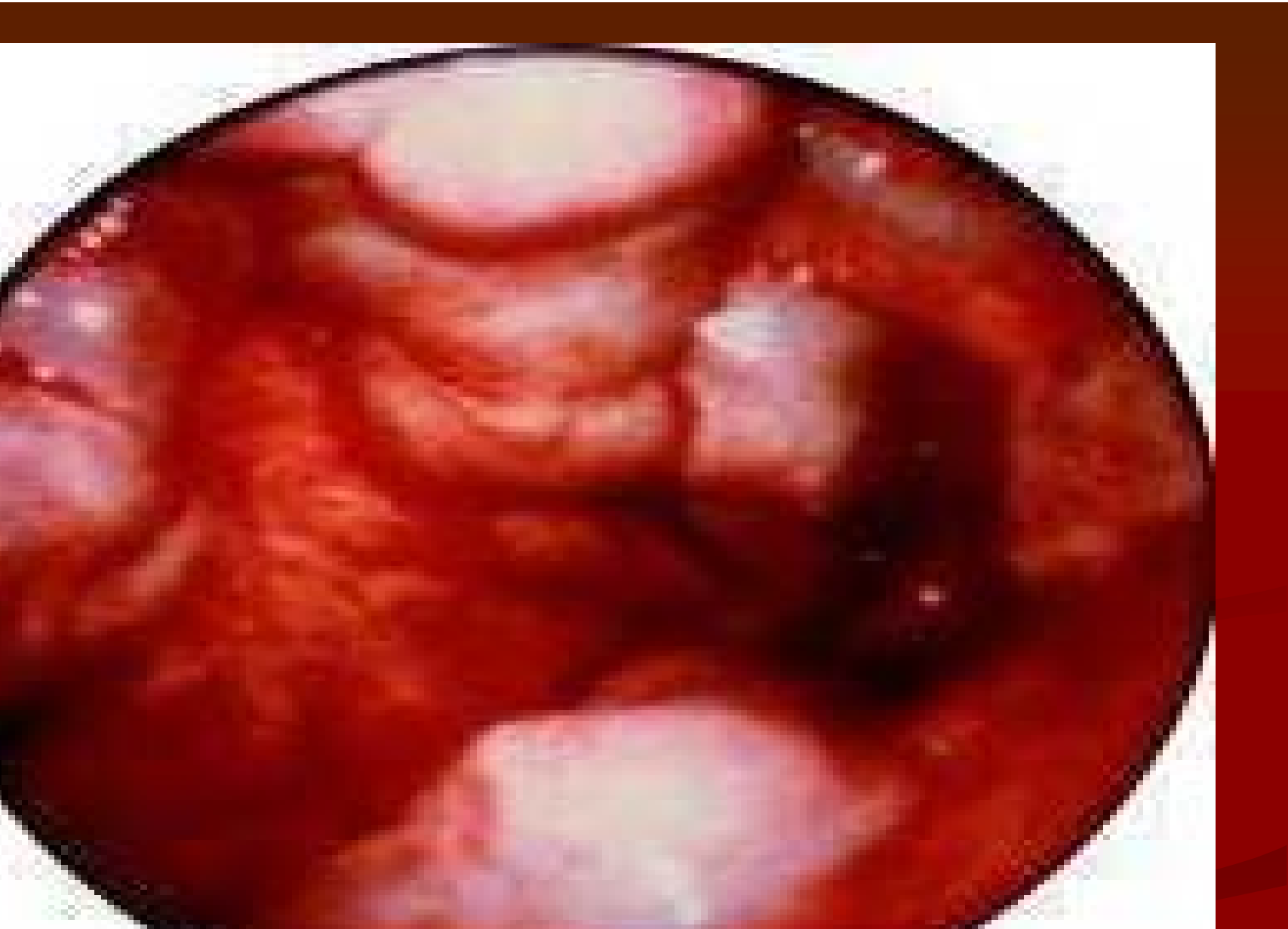


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## Assessment of severity of variceal bleeding

(Sachs, *Gastrointest Endoscopy Clin N Am.*, 1999, 9:175-187).

**<1g/dl drop Hb**

**Minimal or no anemia**

**Stable hemodynamics**

**Infrequent melena**

**Coffee ground hematemesis**

**Low**

**1-2g/ dl drop Hb**

**Anemia >10g/dl**

**Stable hemodynamics**

**Melena**

**Hematemesis**

**High**

**>2 g/ dl drop Hb**

**Profound anemia( <10g/dl)**

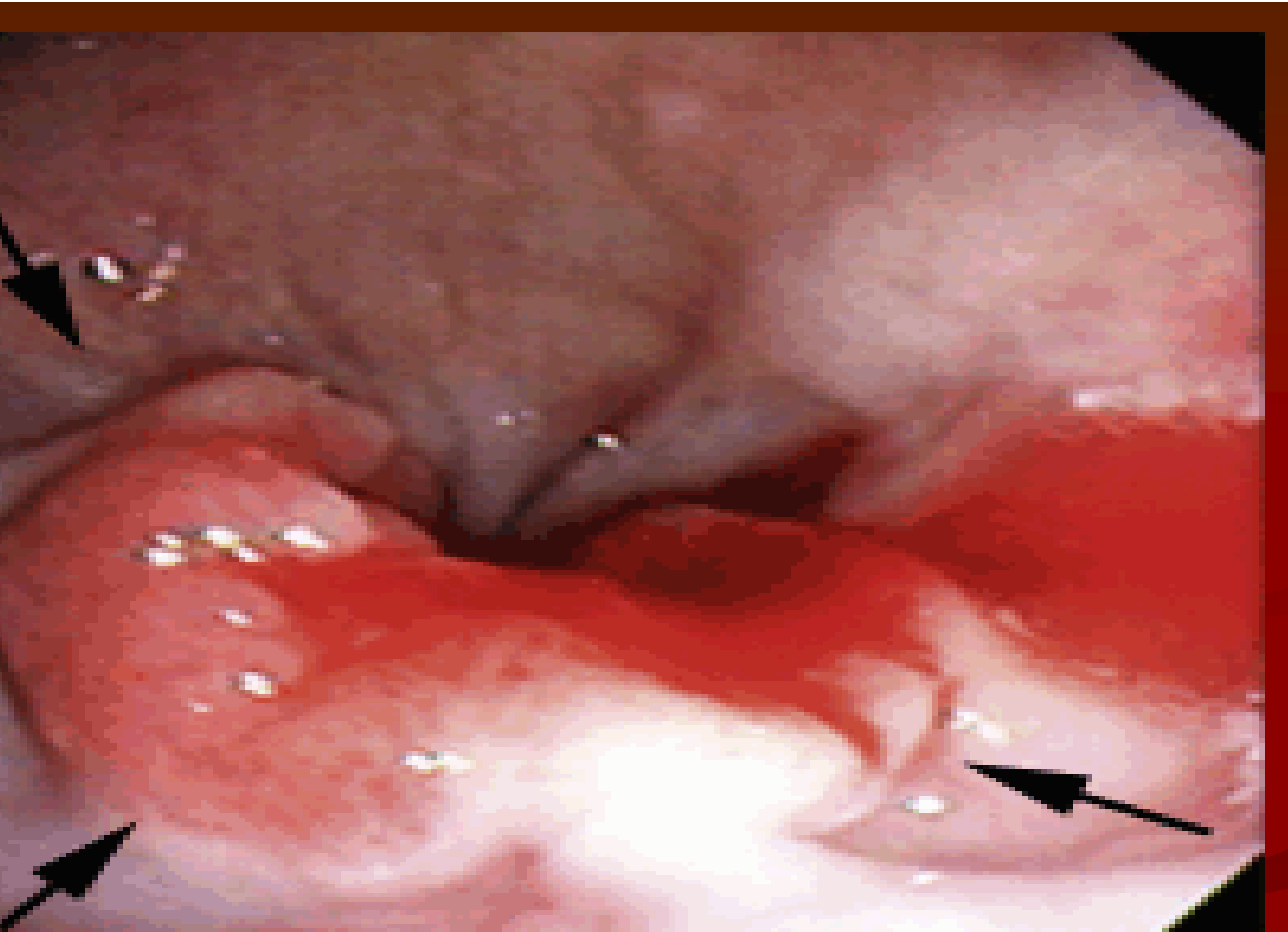
**Hemodynamic instability (orthostatic check)**

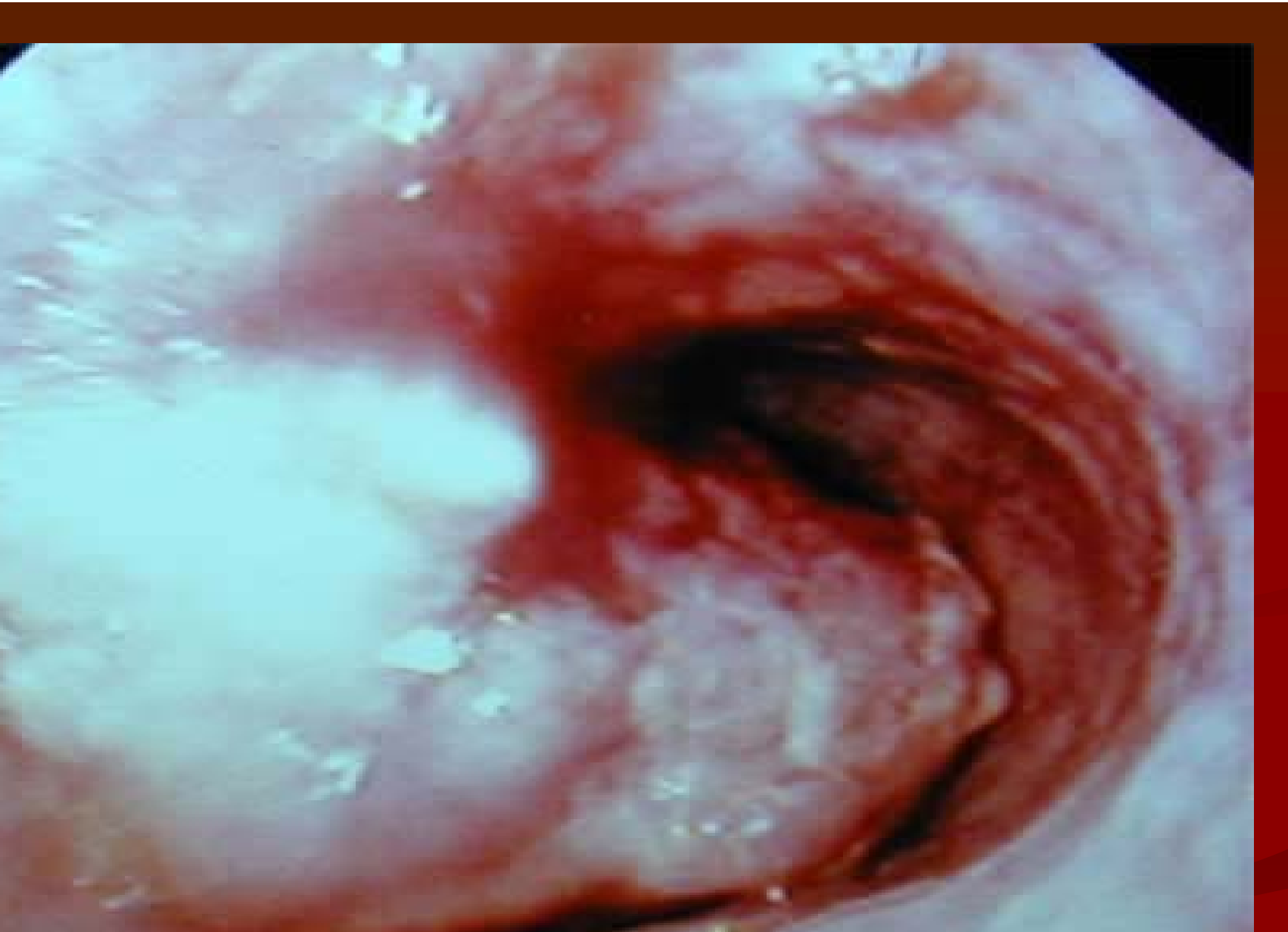
## FACTORS FOR EARLY REBLEADING AND MORTALITY AFTER ENDOSCOPIC TREATMENT OF BLEADING OESOPHAGO-GASTRIC VARICES.

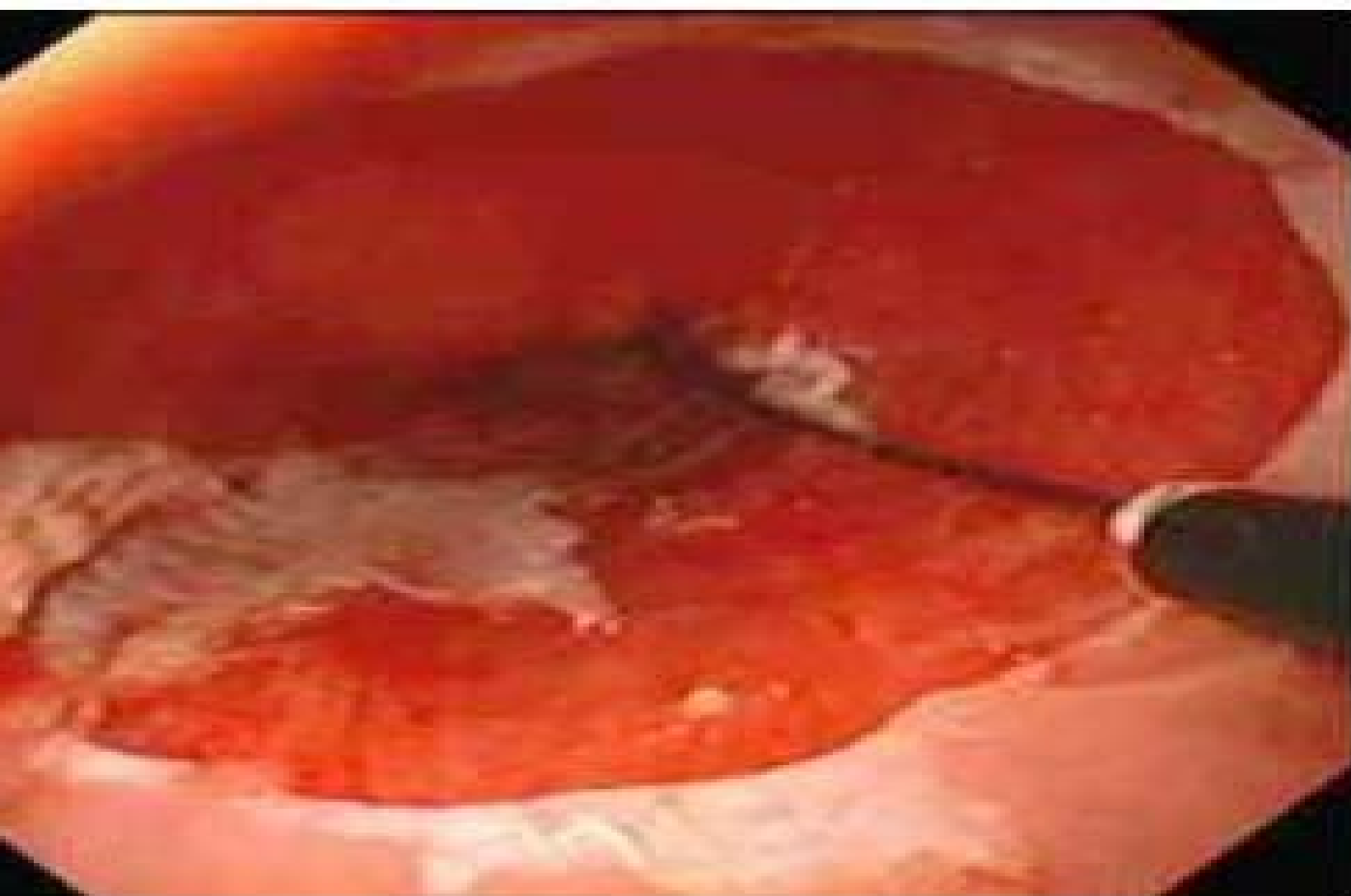
Elkhatib, H. Elasklany and S. Salem. *Hepatology*,2001,34:24 ,Ab.1345)

<b>Rebleeding</b>	<b>Early Mortality</b>
Hepatitis C infection . Child class C . Leucocytosis . Diabetes mellitus . High serum creatinin. Active bleeding at endoscopy . Gastric varices .	- Child class C . - leucocytosis . -High serum creatinin.- Hepatic encephalopathy. - Active bleeding at endoscopy .







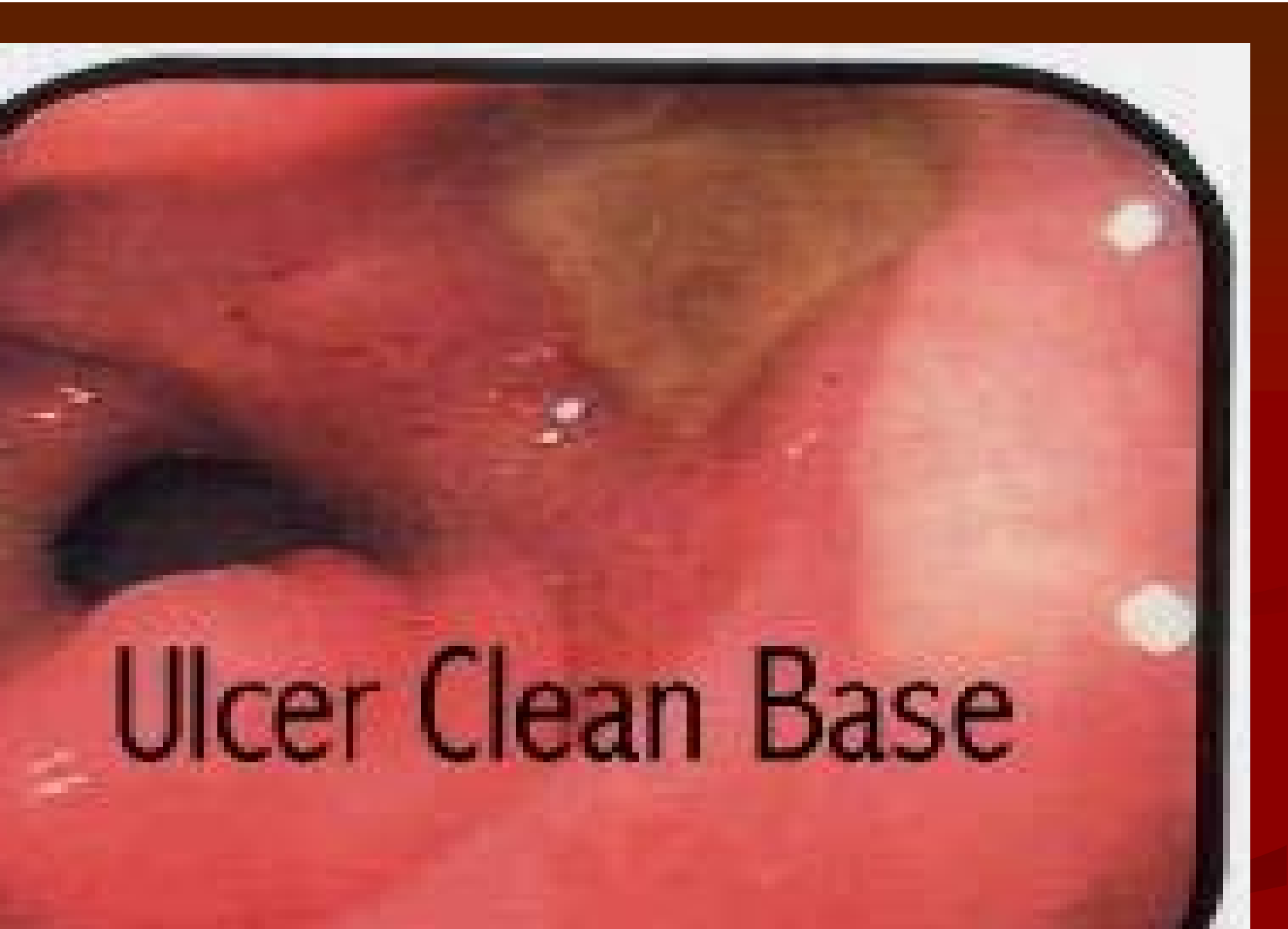


Endoscopic view

## Prognostic feature at endoscopy

Prevalence and outcome of bleeding ulcers without endoscopic hemostasis according to stigmata of active hemorrhage. (N.Engl.J.Med.1994,331:717).

Description	Forrest Class	Prevalence %	Rebleeding%
Visible vessel	IIA	17	43
Adherent clot	IIB	17	22
Spot	IIC	20	10
Non-bleeding base	III	42	5
Hidden	IA (occult)	18	55

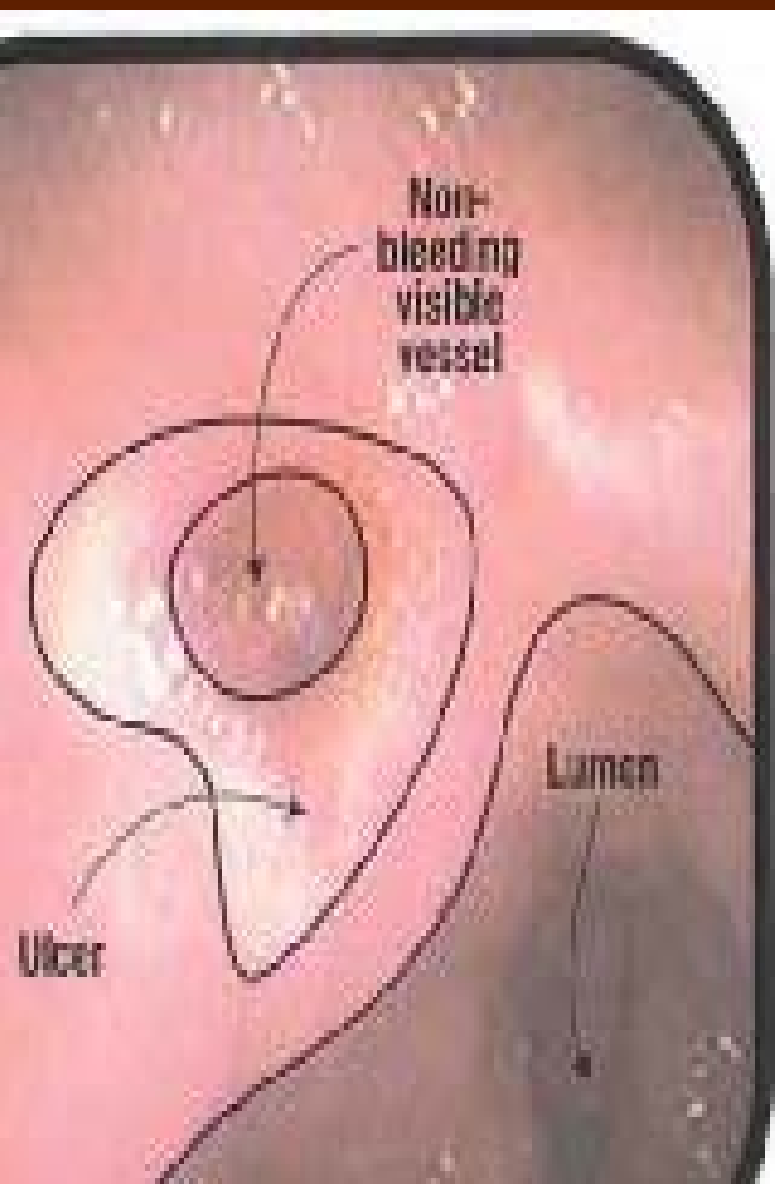


Ulcer Clean Base





ulcer covered by  
blood clot







# Indication for endoscopic therapy in patient with bleeding ulcer according to stigmata of recent hemorrhage

(Saito, *Gastrointest Endoscopy Clin N Am.*,1997,7:559-574).

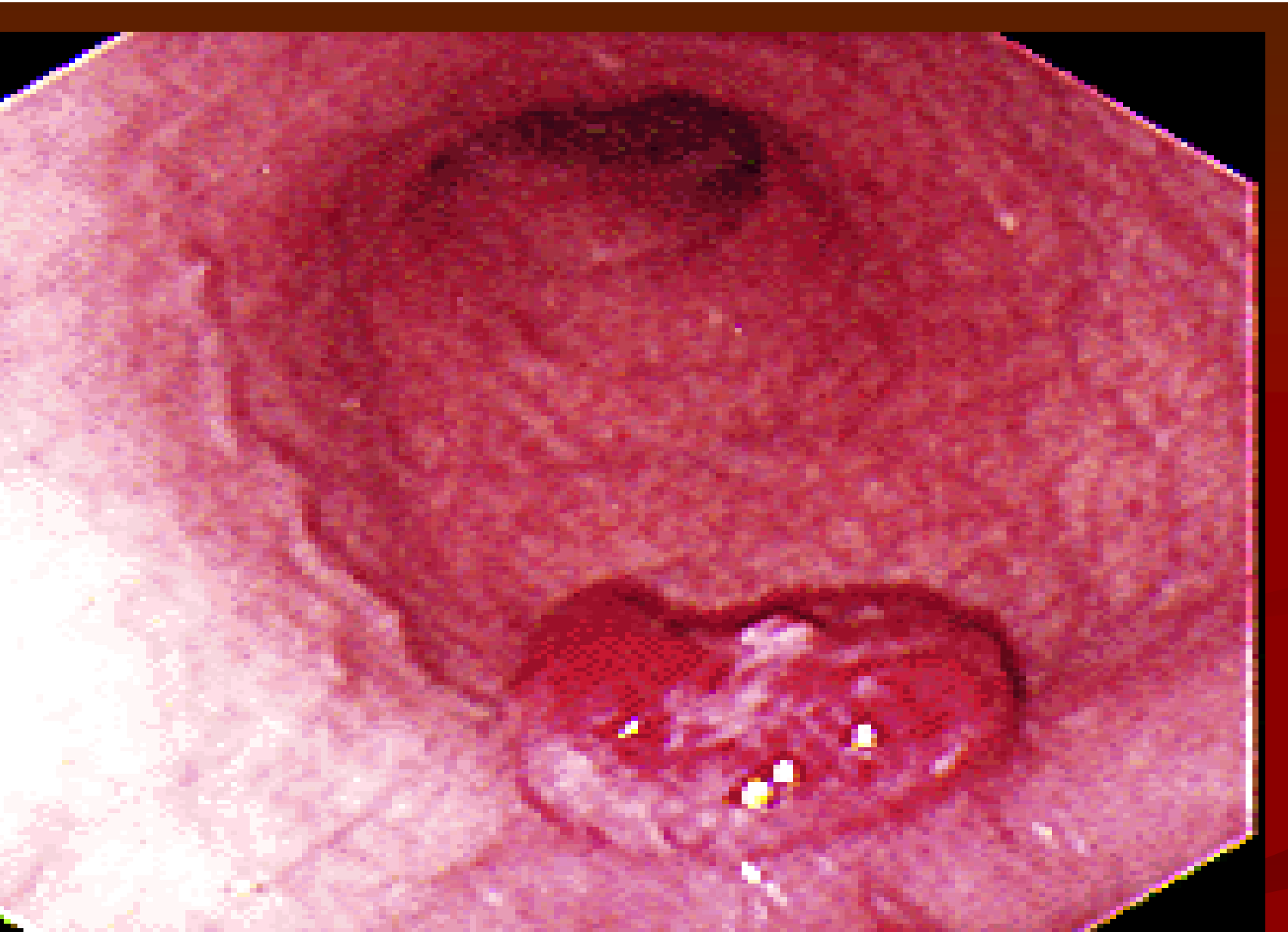
Stigmata	Endoscopic hemostasis
Active bleeding	Yes
Non-bleeding visible vessel	Yes
Adherent clot	Controversial
Spot	No
Flat base	No

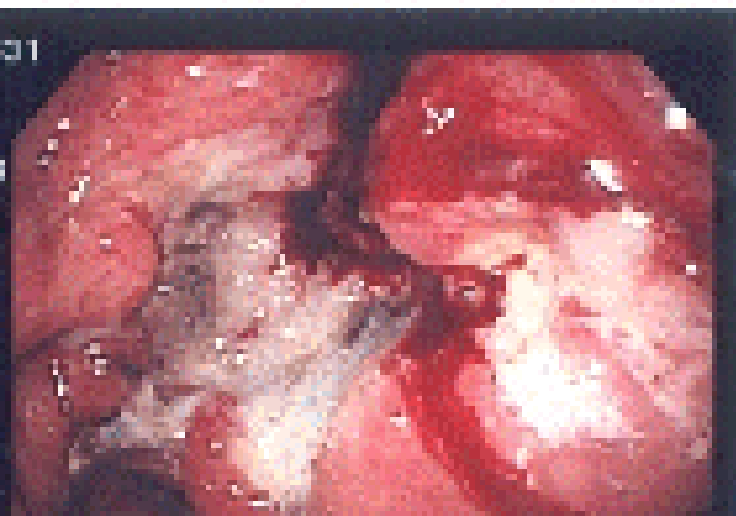
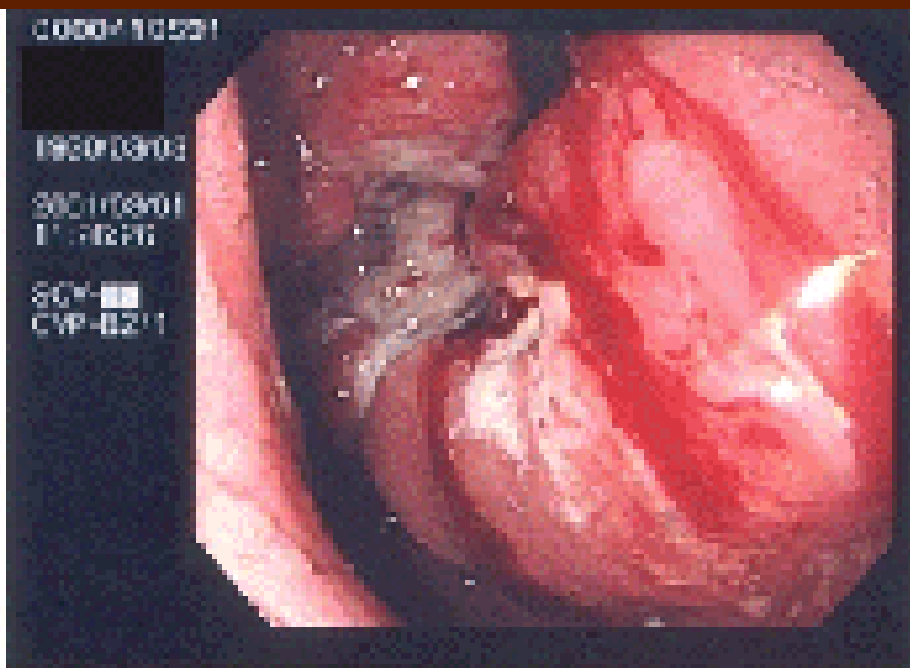
**Factors of ulcer rebleeding without endoscopic therapy** (Freeman, *Gastrointest Endoscopy Clin N* 1997,7:559-574).

<b>Clinical</b>	<b>Endoscopic</b>
<b>Rebleed</b> <b>Shock</b> <b>Low hemoglobin</b> <b>Large transfusion need</b> <b>Hematemesis</b>	<b>- Major stigmata</b> <b>Active bleed</b> <b>Visible vessel</b> <b>Adherent clot</b> <b>Blood in stomach</b>
<b>Failed healing</b> <b>In-hospital bleeding</b> <b>Comorbid illness</b> <b>Coagulopathy</b> <b>Old age</b>	<b>- ulcer location</b> <b>Posteroinferior bulb</b> <b>High gastric</b> <b>Large size/depth</b>

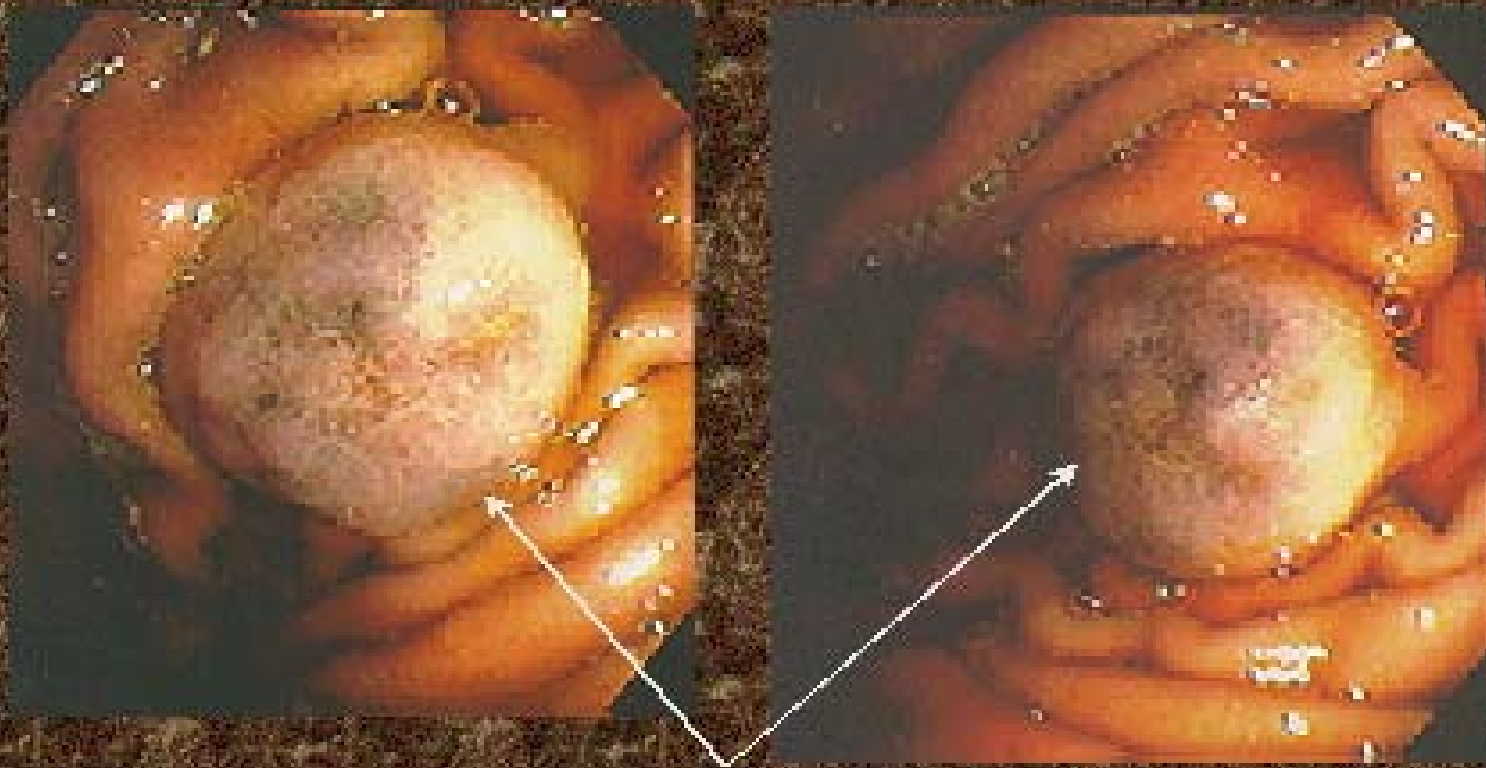
**Assessment after ulcer bleeding . Gut 38:316,1996**

<b>Score</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
	<b>&lt;60</b>	<b>60-79</b>	<b>&gt;80</b>	<b>-</b>
	<b>None</b>	<b>Tachycardia (pulse &gt;100)</b>	<b>Hypotension (sys.&lt;100)</b>	<b>-</b>
<b>Morbidity</b>	<b>No major comorbidity</b>	<b>-</b>	<b>-Cardiac failure -IHD, any other.</b>	<b>Renal/hepatic failure. Disseminated cancer.</b>
<b>Causes</b>	<b>Non, Mallory Weiss tear or no stigmata</b>	<b>All other DX</b>	<b>Upper GI malignancy.</b>	<b>-</b>





# Metastatic Lung Cancer to Stomach



## CONCLUSION

Diagnosis of upper gastrointestinal bleeding can be **done by** history, examination and investigation in hemodynamically **stable** patient, however in hemodynamically **unstable** patient, resuscitate first, then diagnose.

Diagnosis of upper gastrointestinal bleeding should **include** exact cause of bleeding, exclusion of hemoptysis, drug-induced black stool and bleeding



Diagnosis of upper gastrointestinal bleeding should include **prognostic** indicators of the patients.

**Upper endoscopy** is the **initial** procedure of choice for the evaluation of acute UGIB.

