HBV and HIV
HIV and HBV

VG Naidoo
Gastroenterology

HIV – infectious disease

HBV – gastroenterology

} Internal Medicine

Co-infection = Co-operation

However, few sub-specialists & lots of patients

What does a gastroenterologist do?

Upper GI endoscopy (Dx, Rx eg. band ligation, EMR)

Colonoscopy (polypectomy, EMR)

ERCP (therapeutic)

Endoscopic ultrasound

Manometry etc etc

→ Interventional + Cognitive

Oesophagohepatogastroenteropancreaticocolonologist

Focus on HBV

HIV-HBV co-infection

Managing the liver disease

HBV

350-400 million people chronic HBsAg carriers

Variable disease progression

Inactive carrier / Chronic HBV → Cirrhosis / HCC

HCV, HIV, Alcohol

Modes of transmission

Sexual

Vertical

Parenteral (blood-to-blood)

Horizontal through close contact / sharing of infected items (early childhood)

Diagnosing HBV - Simple

What is the HBsAg ?

HBsAg negative / HBsAg positive

Clinical context

LFT (Albumin, Bilirubin, ALT), INR, Plt count

Ultrasound

Confusion

HBeAg : replication, high HBV loads

Antibodies

anti-HBs: vaccination, previous exposure

anti-HBc IgM: acute infection, flare

anti-HBc IgG: occult HBV (if HBsAg -), false +

HBV-DNA Viral Load

HBsAg is key

HBeAg (not that important, pre-core mutants)

ALT, Cirrhosis

HBV-DNA Viral Load

Liver biopsy in very selected cases

Goals of HBV Treatment

Prevent progression to cirrhosis

Prevent HCC

What are my targets with Rx?

1st prize: clear HBsAg

2nd prize: clear HBeAg

3rd prize: suppress HBV-DNA load

Viral failure (V/L) → Biochemical failure (ALT) → Histology

HBV - Natural History

Dynamic process

Acute HBV infection (adults / children)

Immune tolerant phase : Normal ALT, High V/L (?)

Immune reactive (eAg+/-) : Increase ALT, Lower V/L

Inactive HBV carrier : Normal ALT, Low V/L

HBsAg negative phase, Occult HBV

Liver Biopsy

Nice to have but RISK vs BENEFIT

?Unclear cases eg. high V/L, mild ALT elevations

Sampling error (patchy disease)

Standardized Scoring (METAVIR score) of activity & fibrosis

Non-invasive methods to evaluate fibrosis (Fibroscan, APRI)

Accelerated Progression to Cirrhosis

Alcohol (yes, you can!)

HIV

HCV

Steatohepatitis

Treatment - HBV

- Pegylated Interferon
- Tenofovir
- Entecavir

(Lamivudine, Emtricitabine, Telbivudine, Adefovir)

HIV and HBV

All HBV patients tested for HIV

All HIV patients tested for HBsAg and anti-HBs

Consider Vaccination (sAg & anti-HBs negative)

- lower response (25% in CD4 < 200)
- ART then vaccinate
- anti-HBs < 10iu, revaccinate

Easy Decision to Treat in HIV-HBV

CD4 < 350 / symptomatic HIV → ARV indicated

Tenofovir, Lamivudine

Signs and/or laboratory tests indicating cirrhosis

No signs of cirrhosis, CD4>350 but ALT elevated and

HBV-DNA > 2000IU/ml or HBeAg+

Pegylated Interferon

Lower HBV-DNA, Elevated ALT (>2xULN)

HBV-HIV: durable response rare

No resistance issues, limited treatment duration (48wks)

Appreciable side-effects (counselling, support)

?CD4 > 500 before HIV treatment needed

18 subjects, HIV-HBV co-infected and Rx naive

PegIFN + HAART (48wks)

(EFV/Lopinavir-Ritonavir + TFV / Emtricitabine)

Median CD4 112

HBV-DNA 20 200 000 IU/ml, All eAg+

HIV-RNA undetectable (24 and 48wks): 100%

HBeAg seroconversion in 16 patients at 48wks

HBsAg seroconversion in 6 patients at 48wks

PegIFN plus HAART was well tolerated and exhibited high viral effectiveness in HIV/HBV treatment-naive co-infected patients.

JA Mata-Marin et al.
J Int AIDS Soc. 2010; 13(S4):P207

HIV-HBV co-infected needing HBV Rx

HBeAg + and/or HBV-DNA > 2000 IU/ml

(or HBV-DNA with cirrhosis)

AND

Elevated ALT (>2x ULN)

(or histologically active disease with normal ALT)

HBV-DNA < 2000 IU/ml

AND

Elevated ALT (around 2x ULN)

Consider liver biopsy to guide treatment decision!

Fibroscan if available!

Normal ALT : <19 females, <31 males

Co-infected Not requiring HIV / HBV Rx

CD4 > 350, no HIV related symptoms

AND

HBV-DNA < 2000 IU/ml

Normal ALT

Histology (if biopsy done, not essential)

→ Mild / non-progressing HBV disease

Monitor

CD4 count every 3 to 6 months

?HIV symptoms every 3 to 6 months

ALT every 3 to 6 months

Tenofovir

Creatinine Clearance

- > 50ml/min, 300mg dly
- 30-49ml/min, 300mg every 48hrs
- > 10-29ml/min (or dialysis), 300mg every 72-96hrs

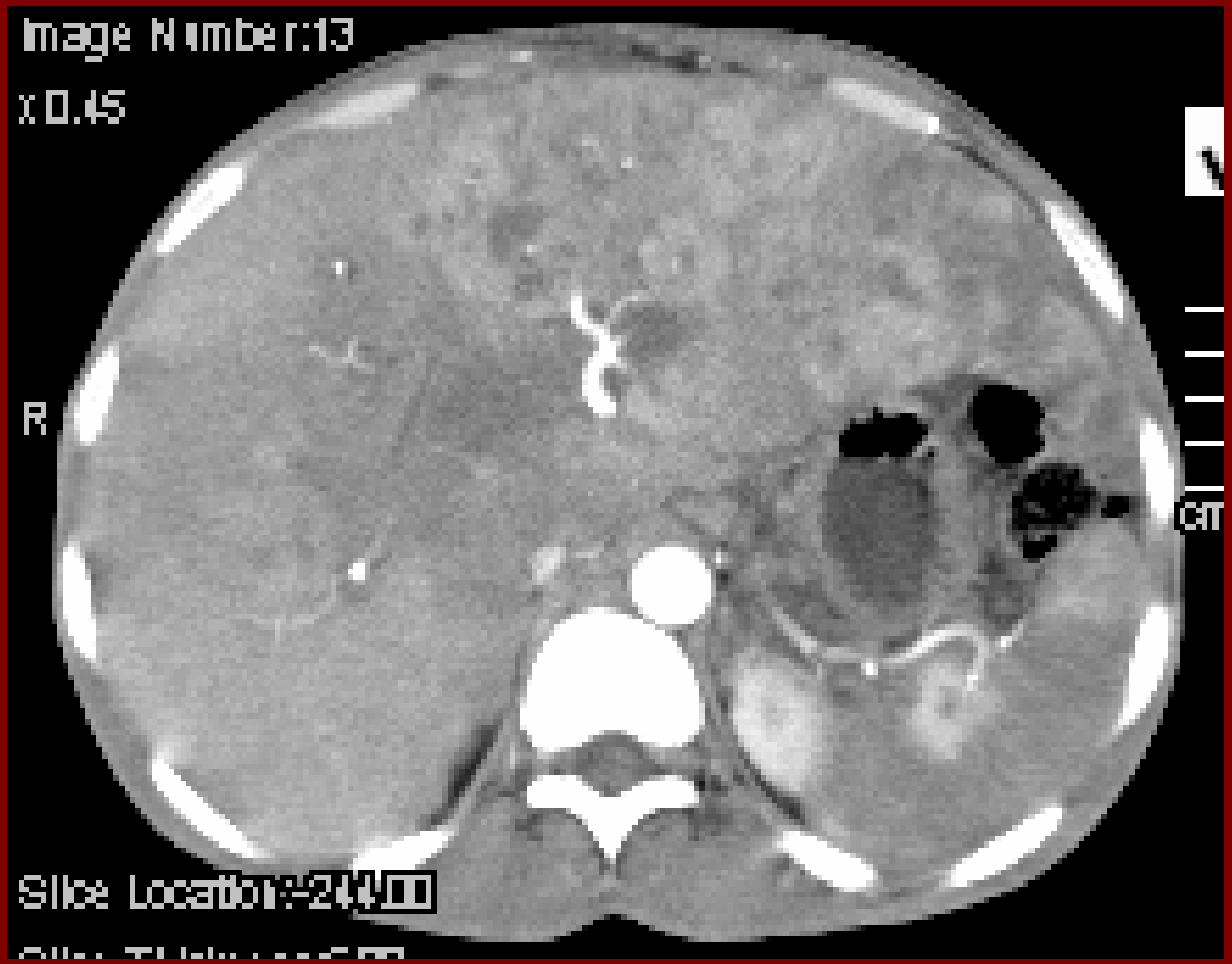
Liver Disease - HBV

Clinical diagnosis of cirrhosis

Portal hypertension

Management of ascites and varices

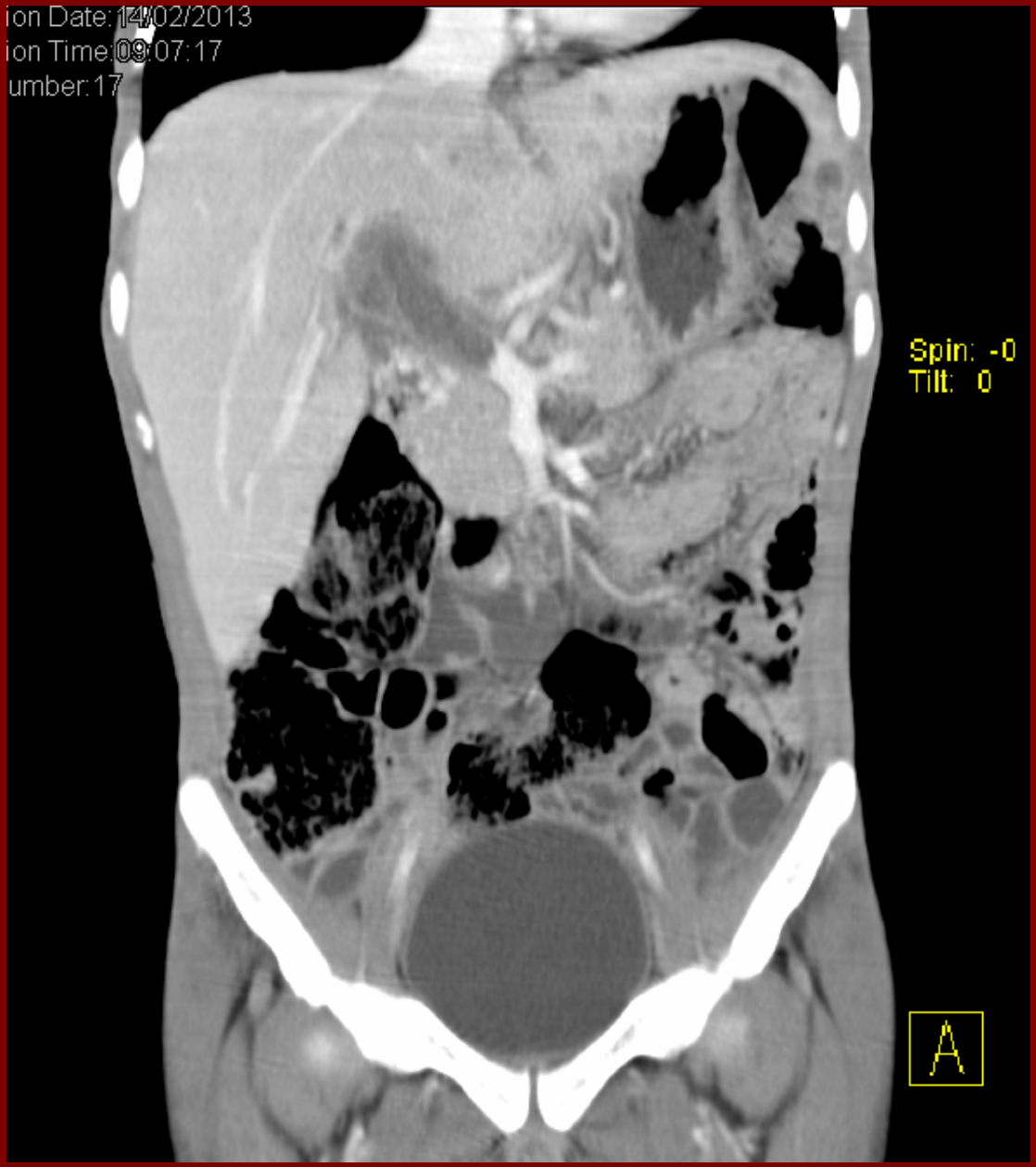
HCC screening: US and AFP every 6/12



HIV, HBV

On ARVs

AFP > 7000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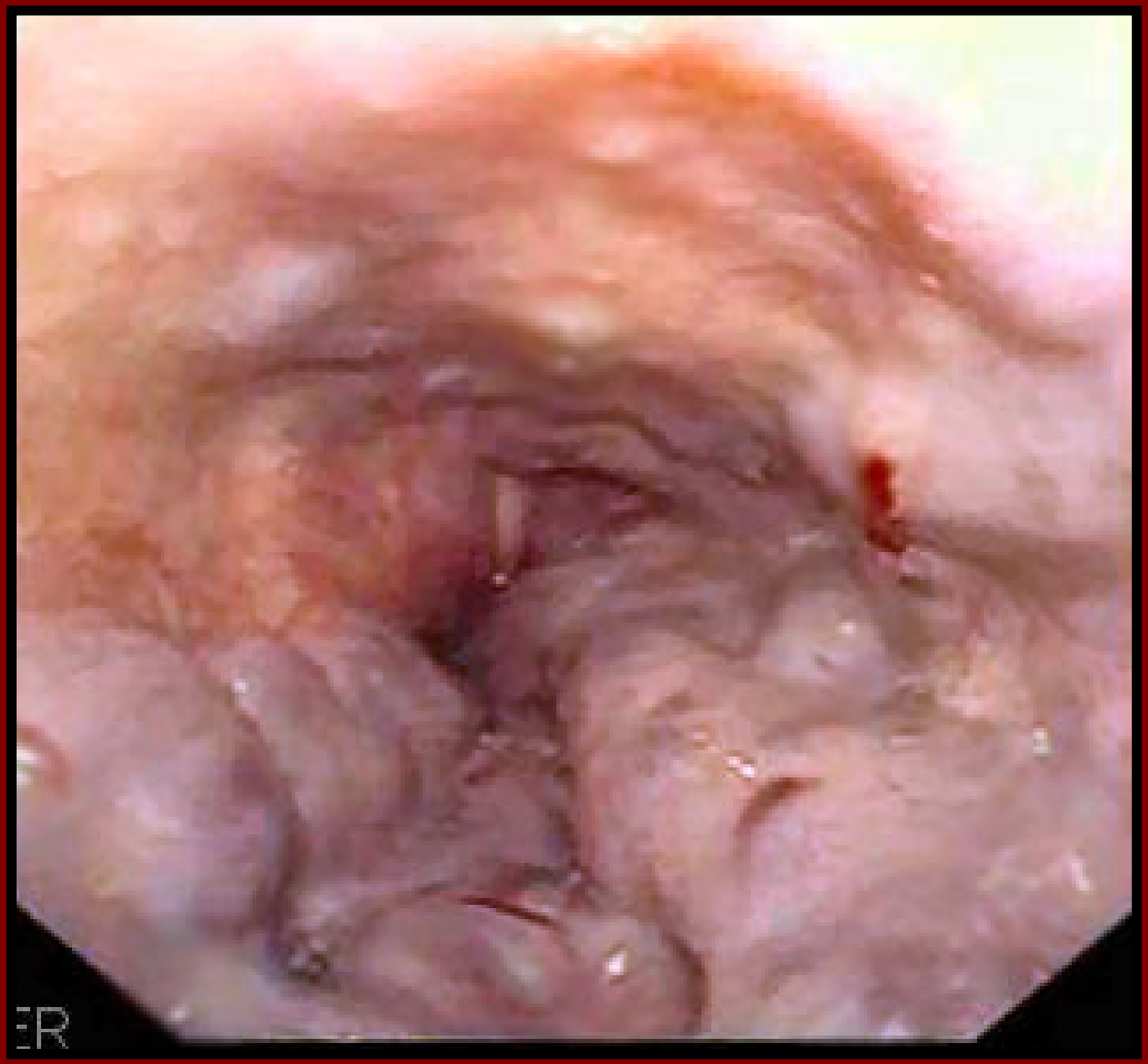
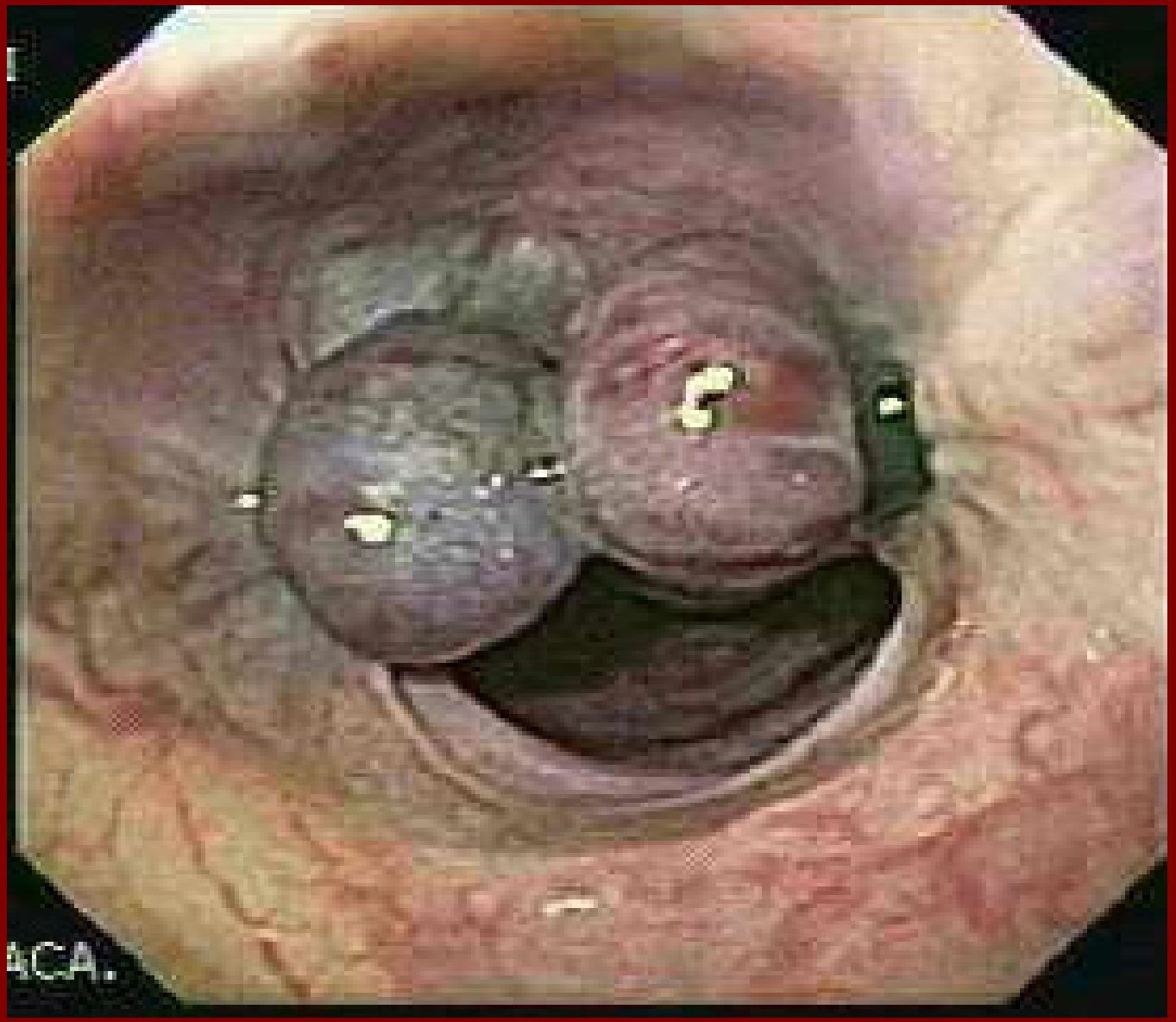


Oesophagus

UGIB

Varices +

Fibrin Clot



Endoscopic Variceal Band Ligation

Concluding Remarks

HbsAg and ALT drives the decisions

HBV-DNA useful but expensive (don't repeat and repeat)

Histology – useful, limitations, not always necessary

ARV – 2 anti-HBV drugs in co-infected - easy

?Role of PegIFN in co-infected

?Role of HBsAg quantification and genotyping

Saving hepatocytes, Preventing neoplastic hepatocytes