

Asymptomatic Gall stones, GB Polyp

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Introduction

- Common in western population

- Prevalence in USA – 6% males and 9% females

Gastroenterology. 1999, Gut 1991

- Indian data –

- Prevalence – 6.12% (Gut 1989)
- In 80% patients with GB cancer
- Nature of stone - north India - cholesterol/mixed vs South India - pigment stones

(PGI, SGPGI, 2019)

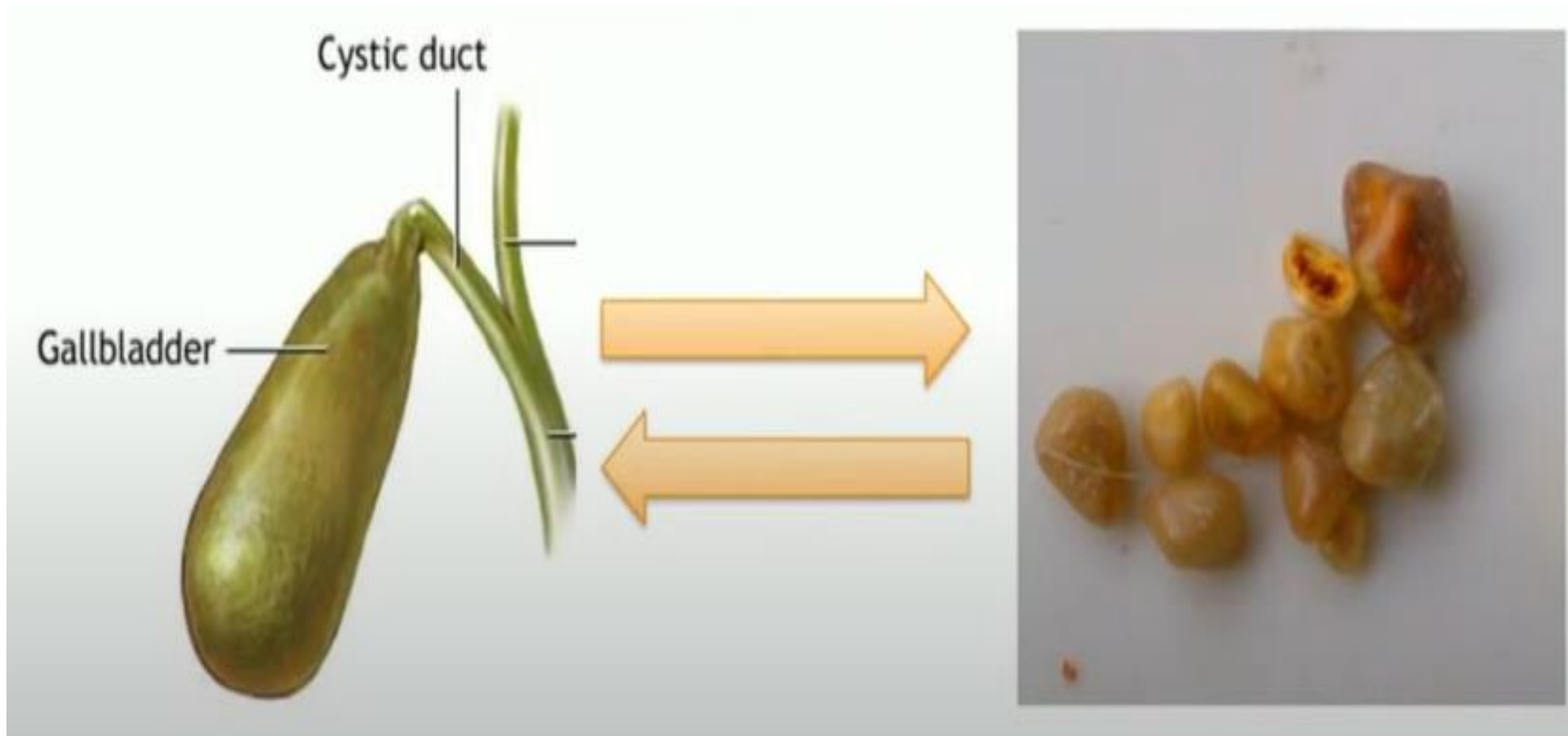
- Increasing gall stones patients- Increasing awareness

Imaging

- Asymptomatic at the time of diagnosis - 22.6%- 80%
- This group of patients are still at life-long risk of developing symptoms and complications
- The current standard practice is to recommend cholecystectomy only after symptoms or complications occur
- Prophylactic cholecystectomy may have some benefits in selected groups of patients

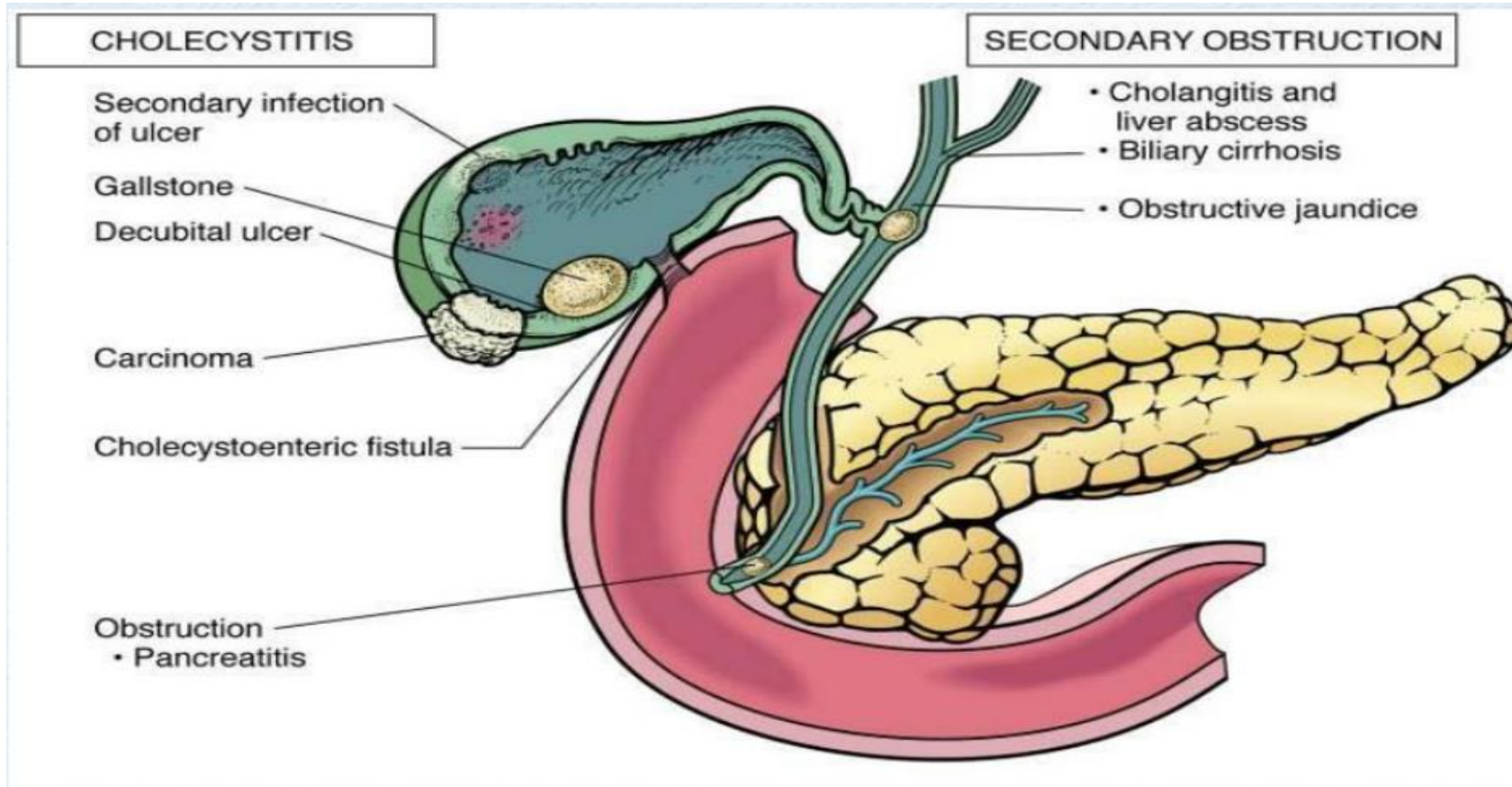
GB and Gallstones

It's a two way unhealthy relationship



Asymptomatic Gall stones

May be silent, but can be sinister



complications

0.7–2.5% of patients with asymptomatic gallstones develop symptoms every year.

- The annual incidence of complications is 0.1–0.3%
 - Acute cholecystitis
 - Acute pancreatitis
 - Obstructive jaundice
 - Cholangitis

Risk factors for a higher likelihood of having symptoms

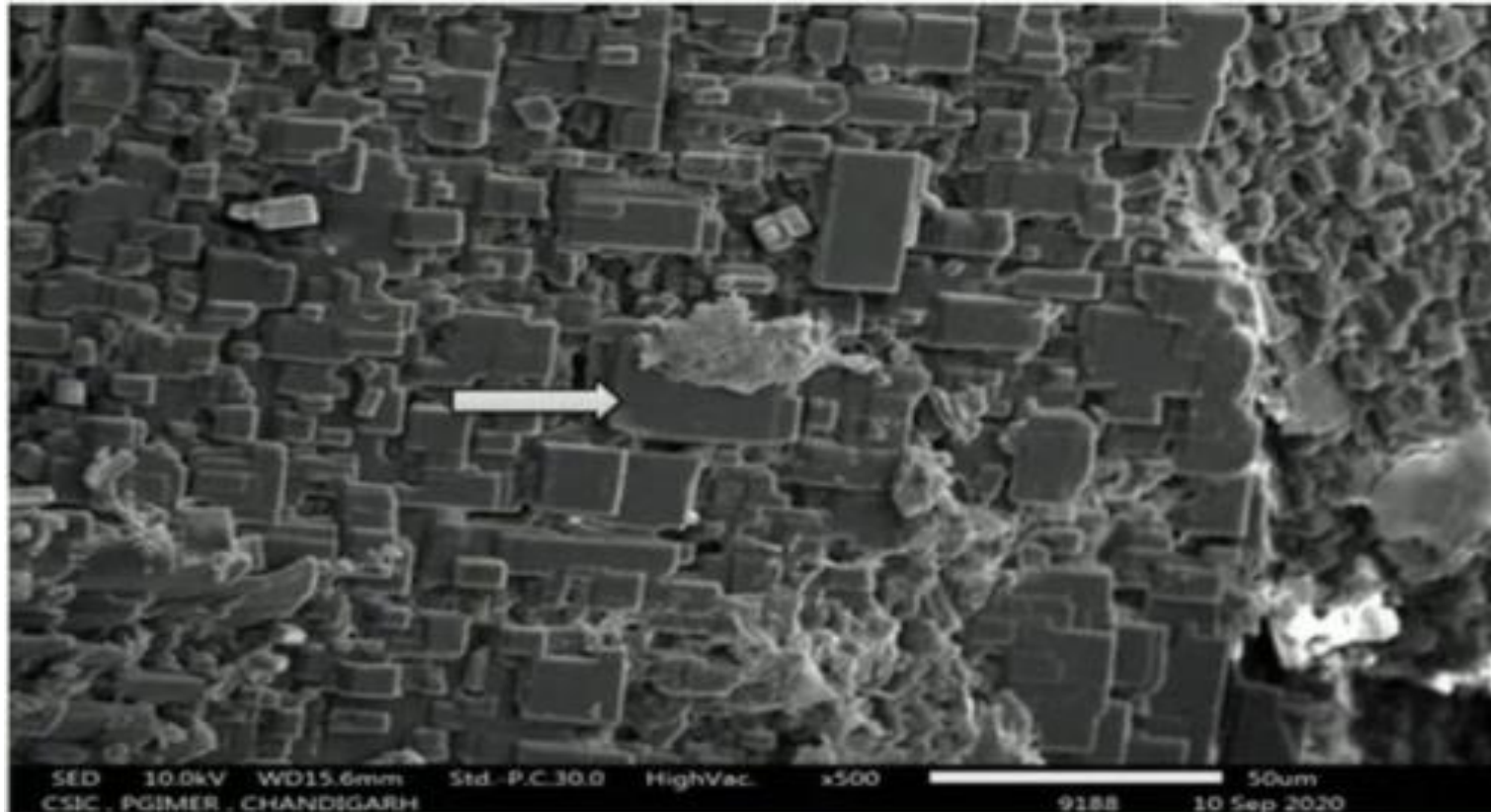
- Patients who are < 55 years old or with > 20 years' life expectancy,
- Female gender
- Smoking history
- High BMI
- Presence of three or more stones, floating gallstones,
- Gallstone > 2 cm in diameter
- Gallstone < 3 mm size with patent cystic duct, and nonfunctioning gallbladder

Asymptomatic Gall stones

Does not mean absence of disease

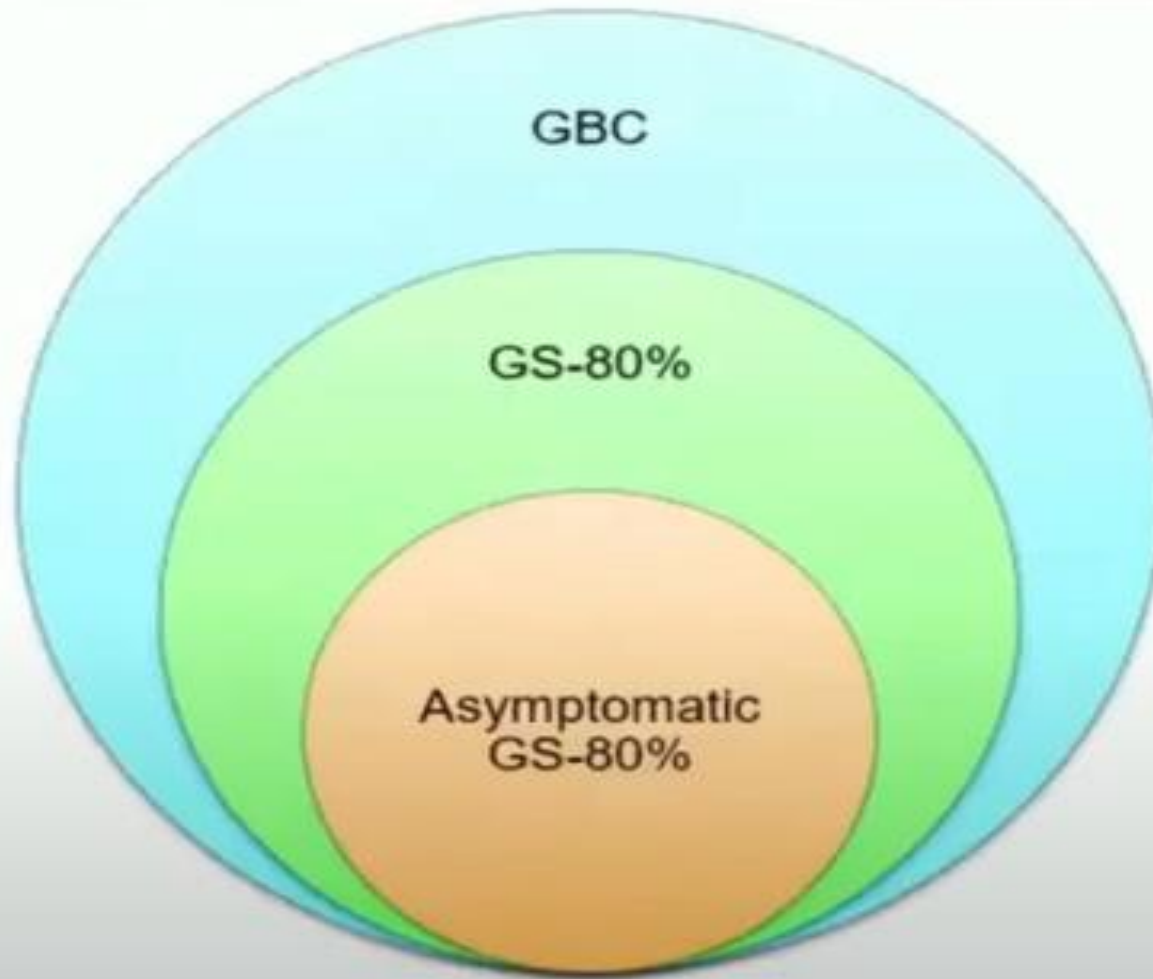
- Its presence reflects diseased
 - Human being: Metabolic syndrome, Hemolysis
 - Gallbladder: GB stasis, Bacterial nidus
 - Bile: Imbalance, Infection
 - Gut: Dysbiosis, Inflamed

Stones have bacterial colonies

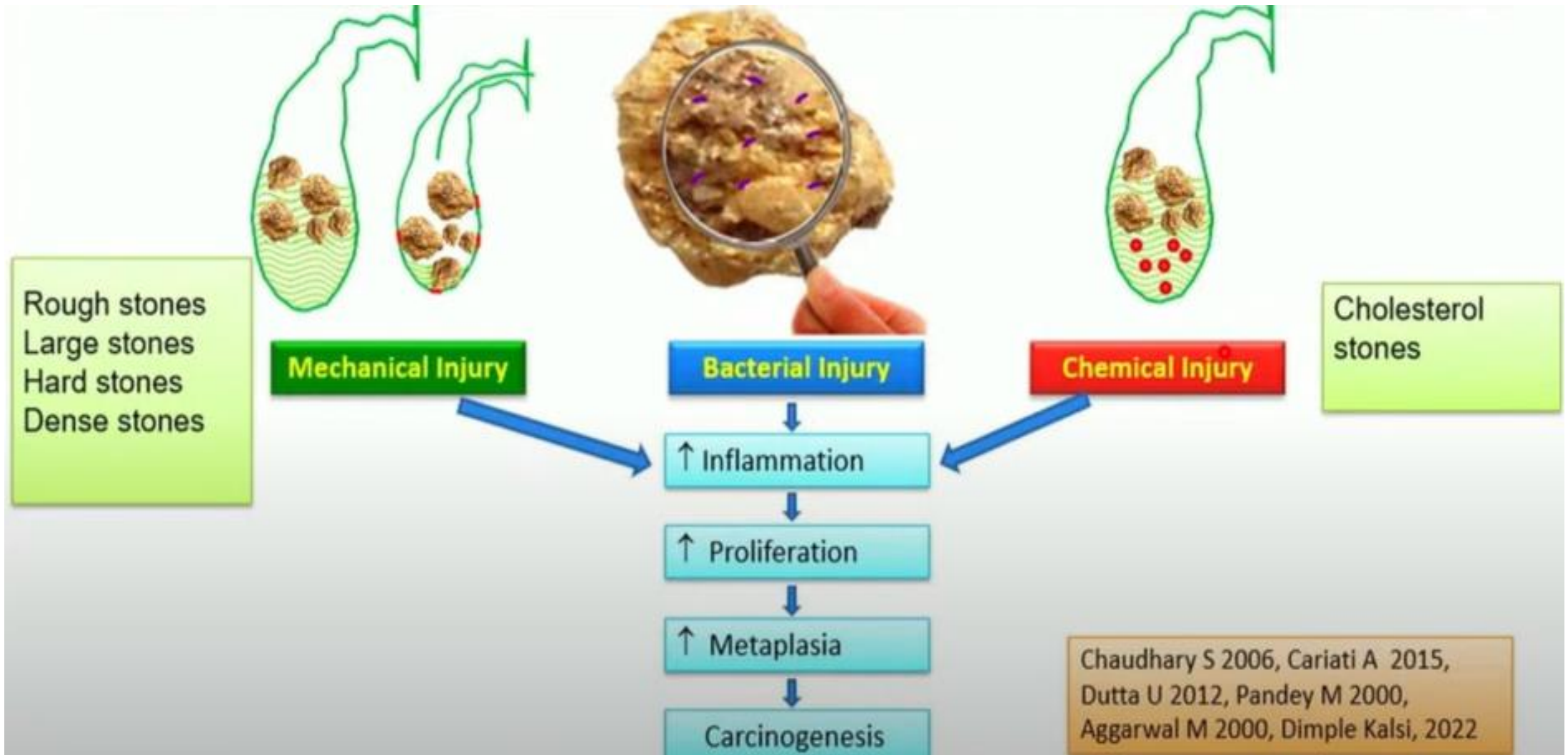


SEM analysis of GS showing Presence of bacterial biofilm at 500x

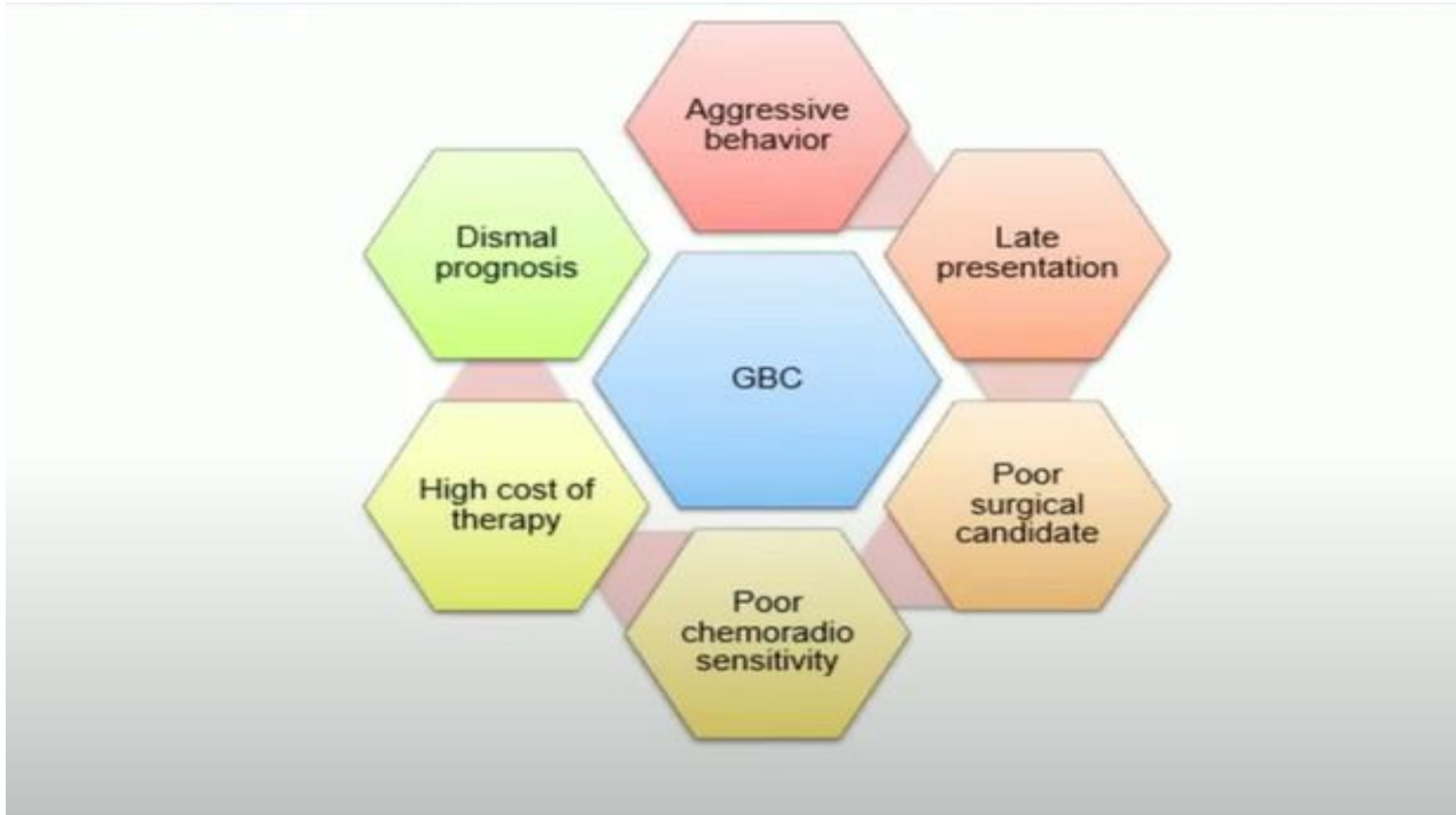
Gall Bladder CA and Asymptomatic GS



GS causing GB mucosal injury



Why GBC should be prevented rather than be treated



Natural History of Asymptomatic GS

[Indian J Surg.](#) 2012 Feb; 74(1): 4–12.

Published online 2011 Dec 3. doi: [10.1007/s12262-011-0376-5](https://doi.org/10.1007/s12262-011-0376-5)

Asymptomatic Gallstones (AsGS) – To Treat or Not to?

[Anu Behari](#) and [V. K. Kapoor](#)[✉]

Series	Patients	Years of follow-up	Biliary pain (%)	Biliary complications (%)	Annual risk of biliary pain
Gracie and Ransohoff [6]	123	15	18	2	2
McSherry et al. [9]	135	4	10	0	–
Friedman et al. [7]		20	18		2.5–5
Cucchiaro et al. [14]	125	5	25	3	–
Wada and Imamura [12]	680	13	20	–	–
Haldestam et al. [13]	123	7	6	4.8	–

Asymptomatic GS and risk of GBC

Series	Number of patients	Follow up	No. of GBC
Ransohoff and Gracie [46]	$n = 1,000$ AsGS	7,000 patient years	No GBC
Maringhini et al. [47]	$n = 2,583$ AsGS	13.3 years	5 GBC
GREPCO [2] 1995	$n = 118$ AsGS	10 years	1GBC

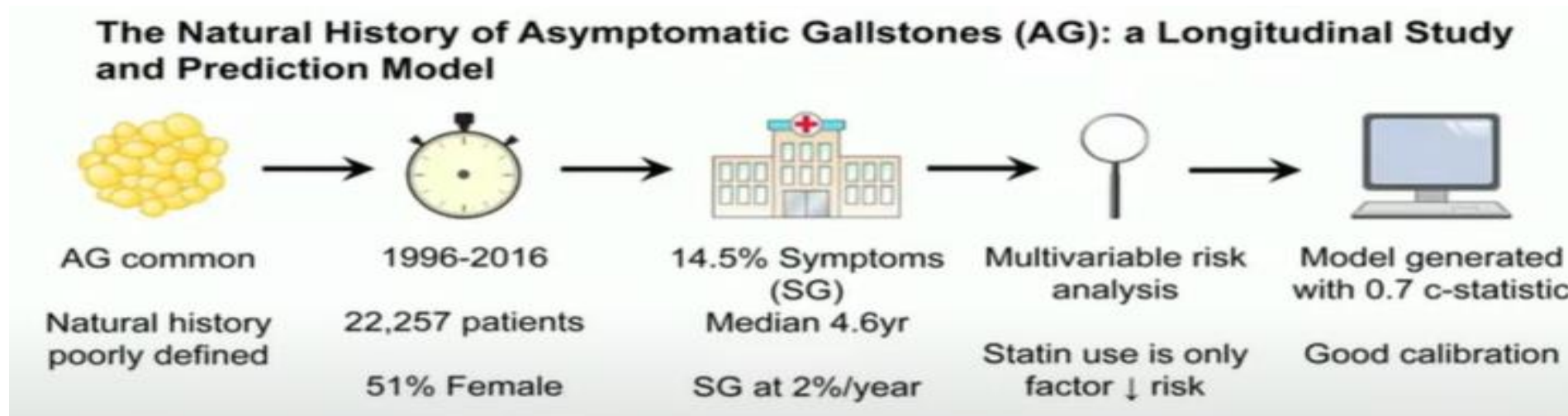
Q1

AsGS asymptomatic gallstones, GBC gallbladder cancer

> Clin Gastroenterol Hepatol. 2023 Feb;21(2):319-327.e4. doi: 10.1016/j.cgh.2022.04.010.
Epub 2022 May 2.

The Natural History of Asymptomatic Gallstones: A Longitudinal Study and Prediction Model

Gareth Morris-Stiff¹, Shashank Sarvepalli², Bo Hu³, Niyati Gupta⁴, Pooja Lal⁴, Carol A Burke⁵,



Cumulative incidence of being symptomatic

At 5 years-10%

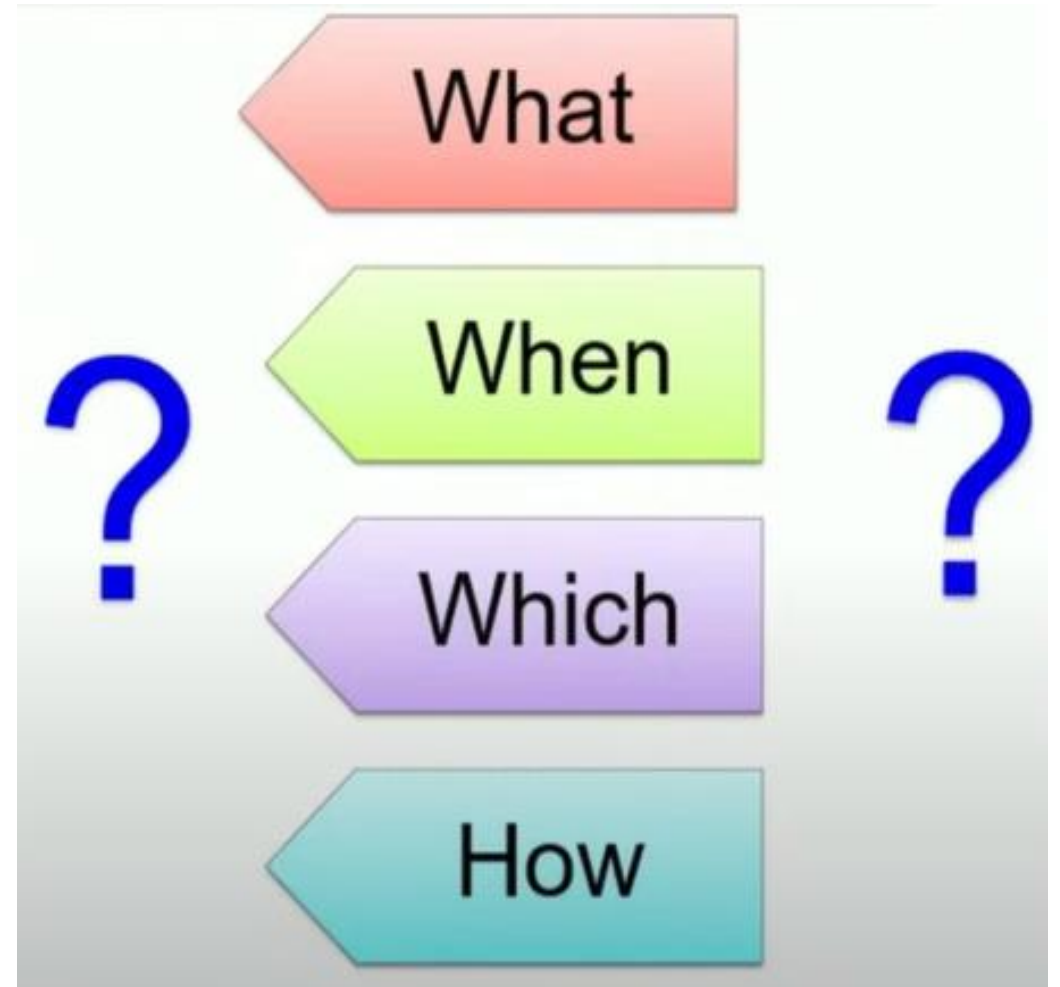
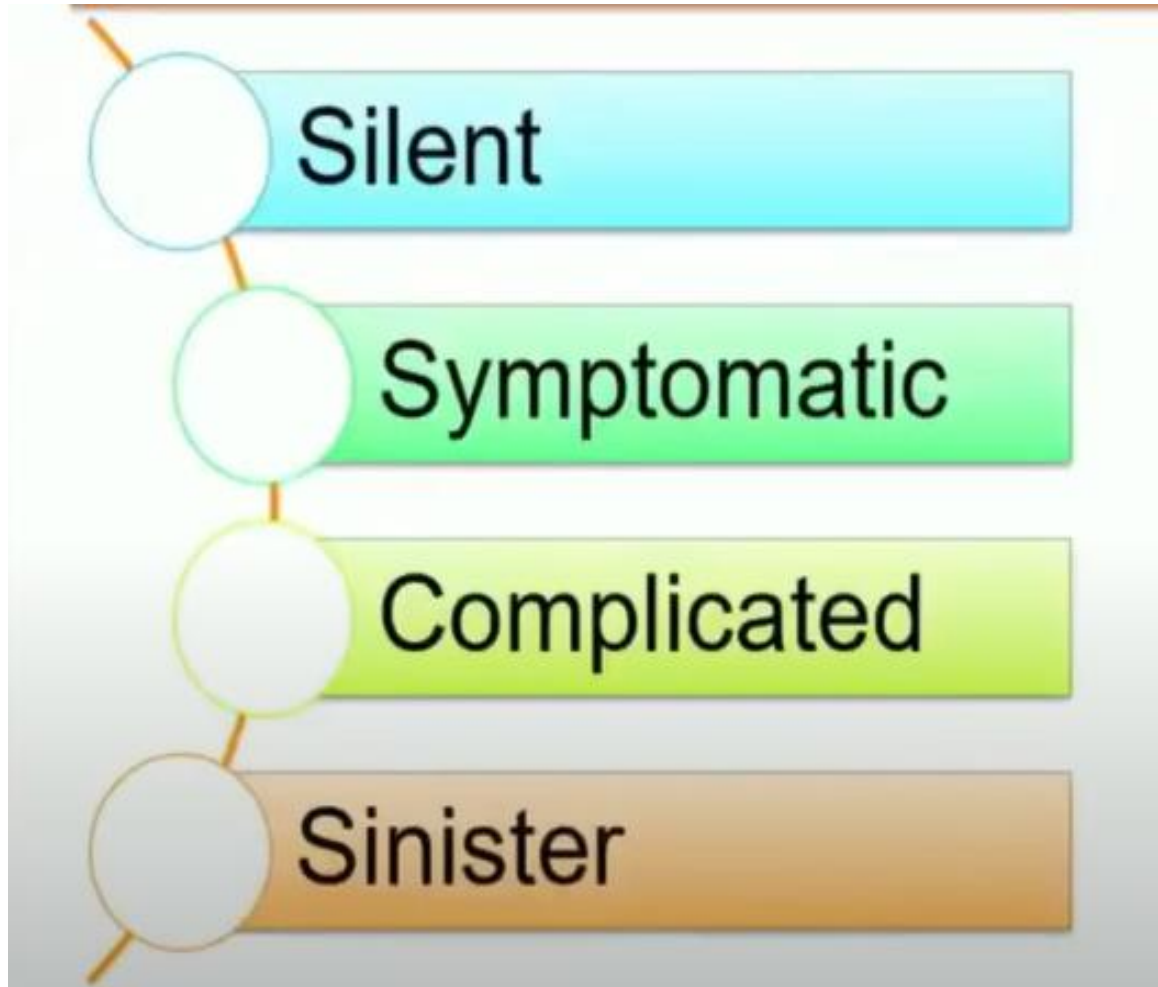
At 10 years – 20%

At 15 years- 30%

Risk of waiting for AG Patients to turn symptomatic

- Higher risks of performing emergency associated with higher mortality rates
- Higher conversion to open cholecystectomy
- **Steiner et al** reported that laparoscopic cholecystectomy led to a 33% relative risk reduction in operative mortality than open cholecystectomy
- Rate of open conversion is low in asymptomatic patients (1.5%), as compared to symptomatic gallstones (5.9%-9.2%)

Asymptomatic Gall stones



Why Asymptomatic GS important in India

- India is the GBC capital
- Rising incidence of Gall stones
- Most studies regarding prevention are from western countries
- No Indian guidelines on prophylactic cholecystectomy
- No larger cohort from india

Cholecystectomy- Removes the risk in its entirety

- Laparoscopic cholecystectomy
- Game changer for GB
- Lower morbidity more patient friendly
- Reasonably safe procedure
- Cost effective



Preventing BDI(bile duct injury)

Country	% BDI	Author
SA	0.5%	Flum et al.
Sweden	0.4%	Waage and Nilsson
Finland	0.9%	Karvonen et al.
Netherlands	1.09%	Gouma and Go
Italy	0.4%	Nuzzo et al.
Kolkata	0.39%	Tantia et al.
Chandigarh	0.64%	Kaushik et al.
Lucknow (SGPGIMS)	1%	Pottakkat et al.

Easier to do Cholecystectomy in Asymptomatic GS

Tropical Gastroenterology 2018;39(2):62-67

Original Article

*Original
Article*

Cholecystectomy for Asymptomatic Gallstones: Clinicopathological Study

Mohammad Ibrarullah¹, Manas R Baisakh², Ambika Prasad Dash³, Asutosh Mohapatra⁴, Sangram Keshari

- Less technically demanding
- Lesser conversion rate to open cholecystectomy
- Lesser complications
- safely performed in patients with asymptomatic gallstones

Indications of cholecystectomy in AG

Should patients with asymptomatic gallstones be treated?

- No RCTs assessing the benefit of cholecystectomy in asymptomatic patients.
- The treatment (open or laparoscopic cholecystectomy) of asymptomatic patients with gallbladder stones does not increase their life expectancy
- The risk of surgery (mortality and morbidity) outweighs the probability of complications

EASL Clinical Practice Guidelines on the prevention, diagnosis and treatment of gallstones[☆]

European Association for the Study of the Liver (EASL)*

Recommendation

Should patients with asymptomatic gallstones be treated?

Routine treatment is not recommended for patients with asymptomatic gallbladder stones (**very low quality evidence; weak recommendation**)

Exceptions

Porcelain gallbladder

- High percentage of patients develop gallbladder carcinoma without prophylactic cholecystectomy.
- Earlier studies found carcinomas in up to 20% of all calcified gallbladders.

Type of calcifications

- Homogeneous wall calcification (carcinoma rate very low)
- cholecystectomy may be avoided in patients with homogeneous wall calcifications

Recommendation

Is cholecystectomy indicated in patients with porcelain gallbladder?

Asymptomatic patients with porcelain gallbladder may undergo cholecystectomy (**very low quality evidence; weak recommendation**)

Patients with existing conditions

Hereditary spherocytosis

- Gallstone prevalence increases from 5% to 40–50% by 10 and >50 years of age respectively.
- Splenectomy is treatment
- Prophylactic (laparoscopic) cholecystectomy is advisable at the time of splenectomy

sickle cell disease

- high risk of pigment stone formation.
- Prophylactic cholecystectomy during abdominal surgery for other reasons is advised in patients with sickle cell disease and asymptomatic gallstones as to avoid diagnostic uncertainty in case of sickle cell crises

Recommendation

- Cholecystectomy should be considered in patients with hereditary spherocytosis and sickle cell disease and concomitant asymptomatic gallstones at the time of splenectomy.
- In patients with sickle cell disease and asymptomatic gallstones, an additional reason for prophylactic cholecystectomy during other abdominal surgery is to avoid diagnostic uncertainty in case of sickle cell crises (very low quality evidence; weak recommendation)

Is cholecystectomy recommended to patients undergoing other surgery?

- The risk of gallbladder stones becoming symptomatic and of complications developing after **malabsorptive/ restrictive obesity surgery** is 10–15%

- Patients w
symptom:
- Prophylac
asymptom
although

Should prophylactic cholecystectomy be performed during bariatric surgery in obese subjects undergoing rapid weight loss?

Prophylactic cholecystectomy is not routinely indicated during bariatric surgery (**very low quality evidence; weak recommendation**)

develop

ons,

- Prophylactic cholecystectomy reduces mortality and cost-effective in asymptomatic patients with gallbladder stones after **heart transplantation**
- Solid organ transplantation → Risk of treatment is comparable to the general population

Recommendation

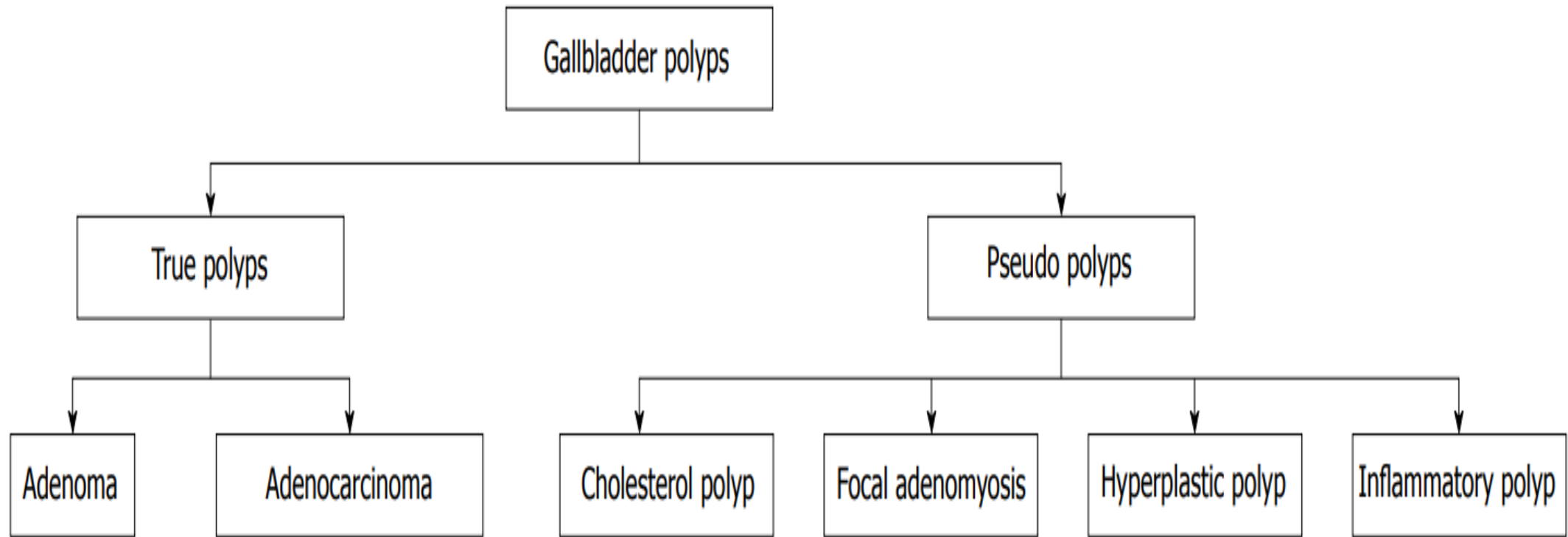
- ❑ Cholecystectomy is not routinely recommended for patients with asymptomatic stones during abdominal surgery including bariatric surgery and in those undergoing kidney, lung or pancreas transplantation (very low quality evidence; weak recommendation)

- ❑ In patients in the early phase after heart or lung transplantation with symptomatic gallbladder stones, cholecystectomy should be deferred whenever possible
(very low quality evidence; weak recommendation)

Gall bladder Polyp

- Gallbladder polyp is an elevation of the gallbladder mucosa that protrudes into the gallbladder lumen.
- Prevalence in adults of between 0.3%-12.3%.
- Only 5% of polyps are considered to be “true” gallbladder polyps, meaning that they are malignant or have malignant potential.
- The prevalence of adenomas (which are considered to be premalignant) is under 5%
- Transabdominal ultrasonography used for diagnosis and surveillance
- EUS improve diagnostic accuracy.

Types of GB polyps



Risk factors and malignant gallbladder polyps

Risk factor	Direction of association	Strength of association	Related notable findings
Age	Positive	Probability of malignancy was 20.7% in those patients older than 50	This systematic review studied polyps less than 10 mm only
Sessile morphology	Positive	Probability of malignancy was 13.9% in sessile compared to pedunculated polyps	This systematic review studied polyps less than 10 mm only
Presence of gallstones	Inconclusive	Aldouri <i>et al</i> ^[47] found increased risk of malignancy with gallstones (HR = 3.2, 95%CI: 1.42-7.22) but Park <i>et al</i> ^[39] found no difference ($P = 0.27$)	There is no strong evidence to suggest there is a definite association
Indian Ethnicity	Positive	HR = 12.92 (95%CI: 3.77-44.29) This shows a significant HR but the width of the CI's are noted.	This is the only study to compare risk between Indian ethnicity and Caucasian race
Primary sclerosing cholangitis	Positive	40%-60% of polyps in patients with PSC were malignant	33% of those with benign polyps had associated dysplasia

How to differentiated from GB stones

- Changing the patient's position .
- More than one polyp favours a diagnosis of **cholesterol polyps** rather than adenomas.
- Vessels in the polyp base are typical for adenomas
- EUS demonstrated more precisely than with transcutaneous sonography (87–97% vs. 52–76%)

Polyp ≥ 1 cm

- Should undergo cholecystectomy
- In several large studies polyps ≥ 1 cm in diameter had a clearly increased probability of adenomas.
- Up to 50% of polyps ≥ 1 cm in diameter carry carcinoma

Polyps $>18-20$ mm

- Open cholecystectomy \rightarrow malignancy risk

Polyp Size 6-10mm(intermediate polyps)

- Majority of **intermediate polyps** (6–10 mm) show a benign natural course
- Asymptomatic polyps ≤ 5 mm, no follow up required
- follow up by ultrasound (in non-obese patients) or EUS performed initially every 3 to 6 months and later annually, if **polyp size** does not increase
- EUS may be helpful to differentiate gallbladder polyps of 6–10 mm in size that are suspicious of gallbladder cancer

- A systematic review based on 10 observational studies noted that the **rate of growth of polyp** may not be a good predictor of a neoplastic polyp

Gallbladder polyps PSC patients

- Cholecystectomy , irrespective of size of polyp
- Frequently malignant
- High incidence of intraepithelial neoplasia

EASL Clinical Practice Guidelines on the prevention, diagnosis and treatment of gallstones[☆]

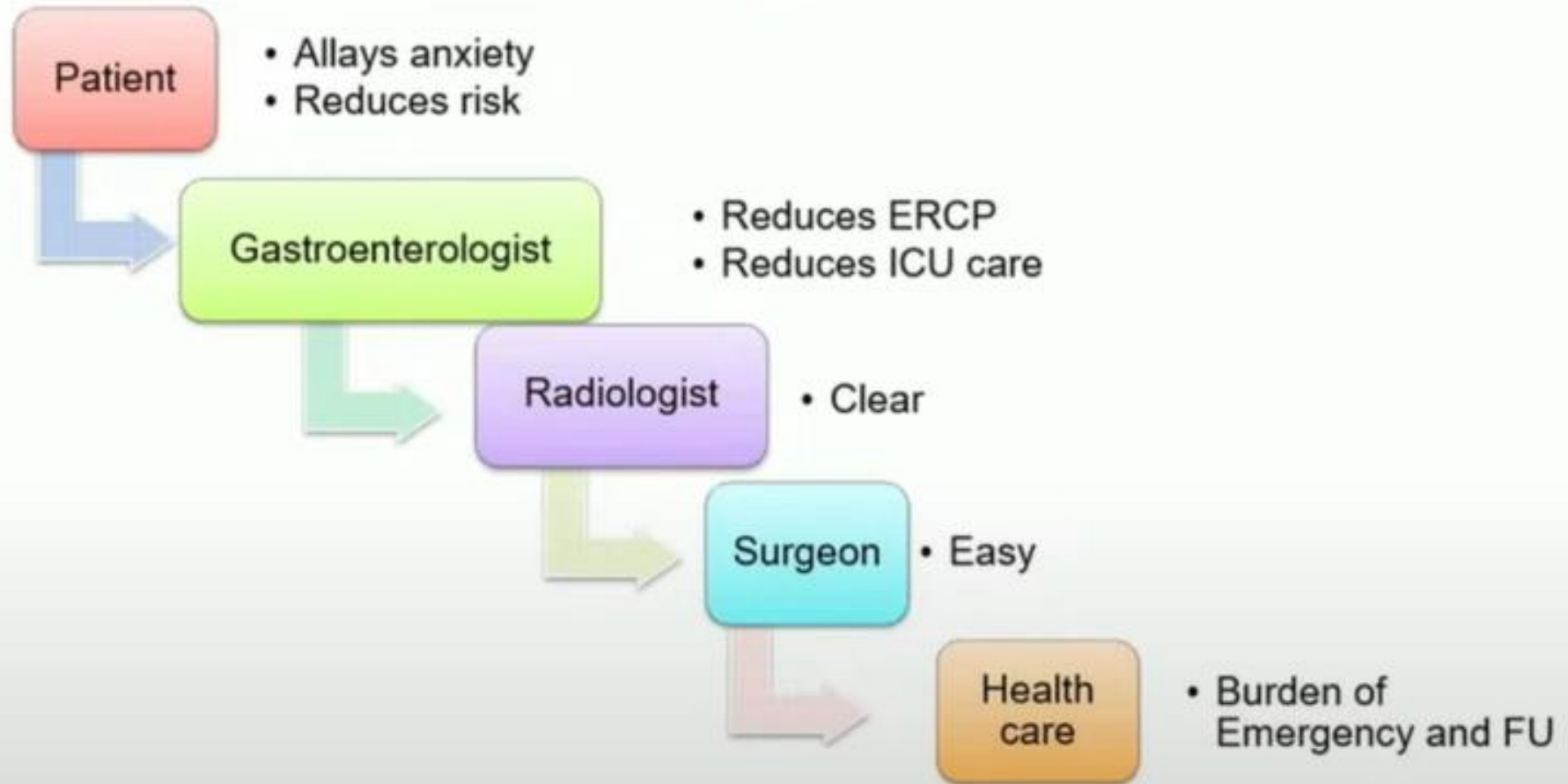
European Association for the Study of the Liver (EASL)*

Cholecystectomy should be performed in patients with

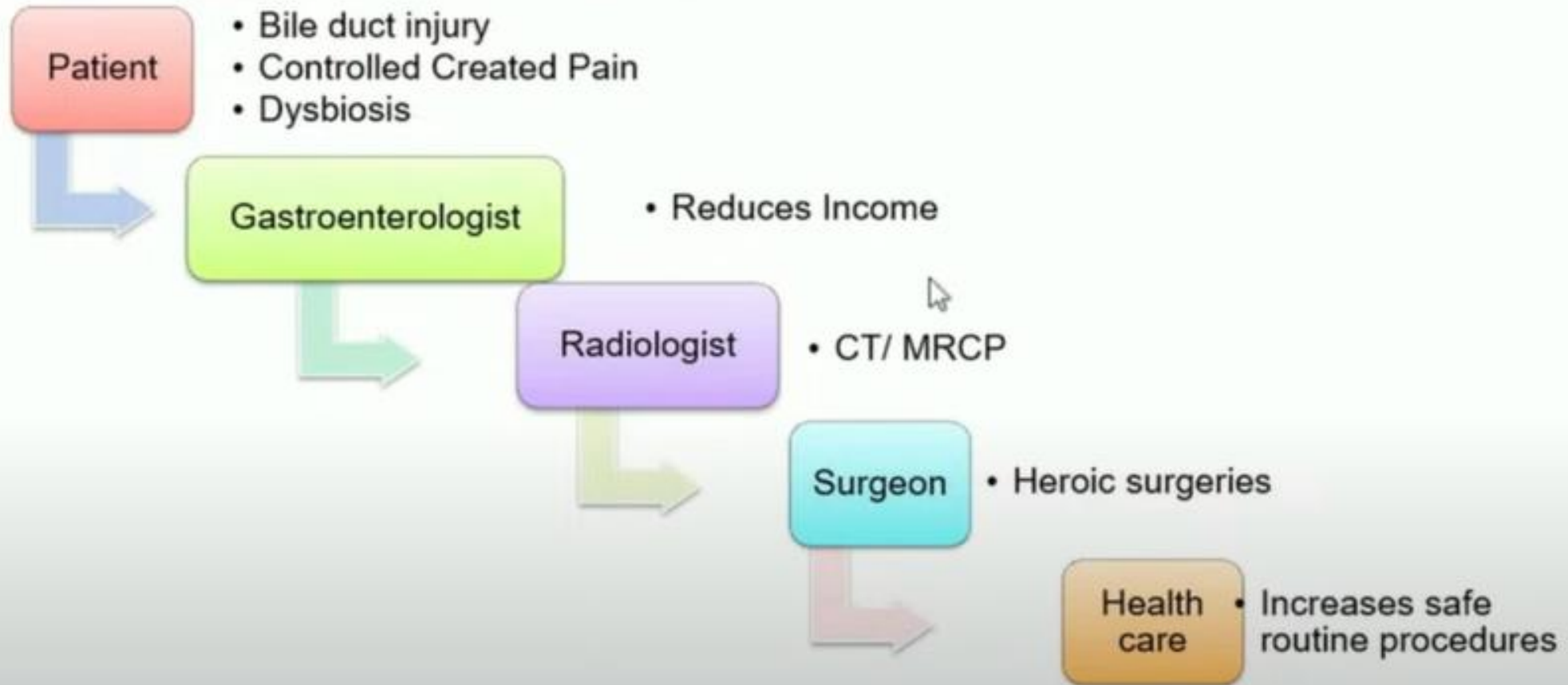
- Gallbladder polyps ≥ 1 cm without or with gallstones regardless of their symptoms
- Asymptomatic gallbladder stones and gallbladder polyps 6-10 mm and in case of **growing polyps**
- Cholecystectomy is not indicated in patients with asymptomatic gallbladder polyps ≤ 5 mm

(moderate quality evidence; strong recommendation)

Benefits



Risk

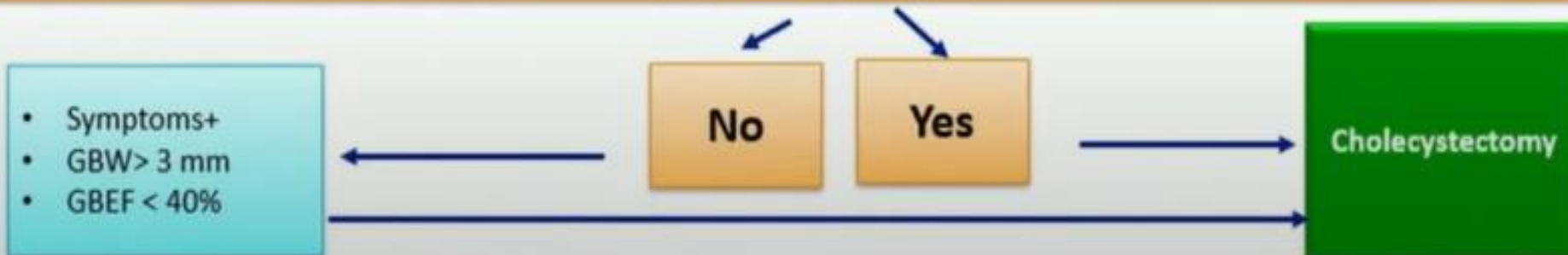


Conclusion

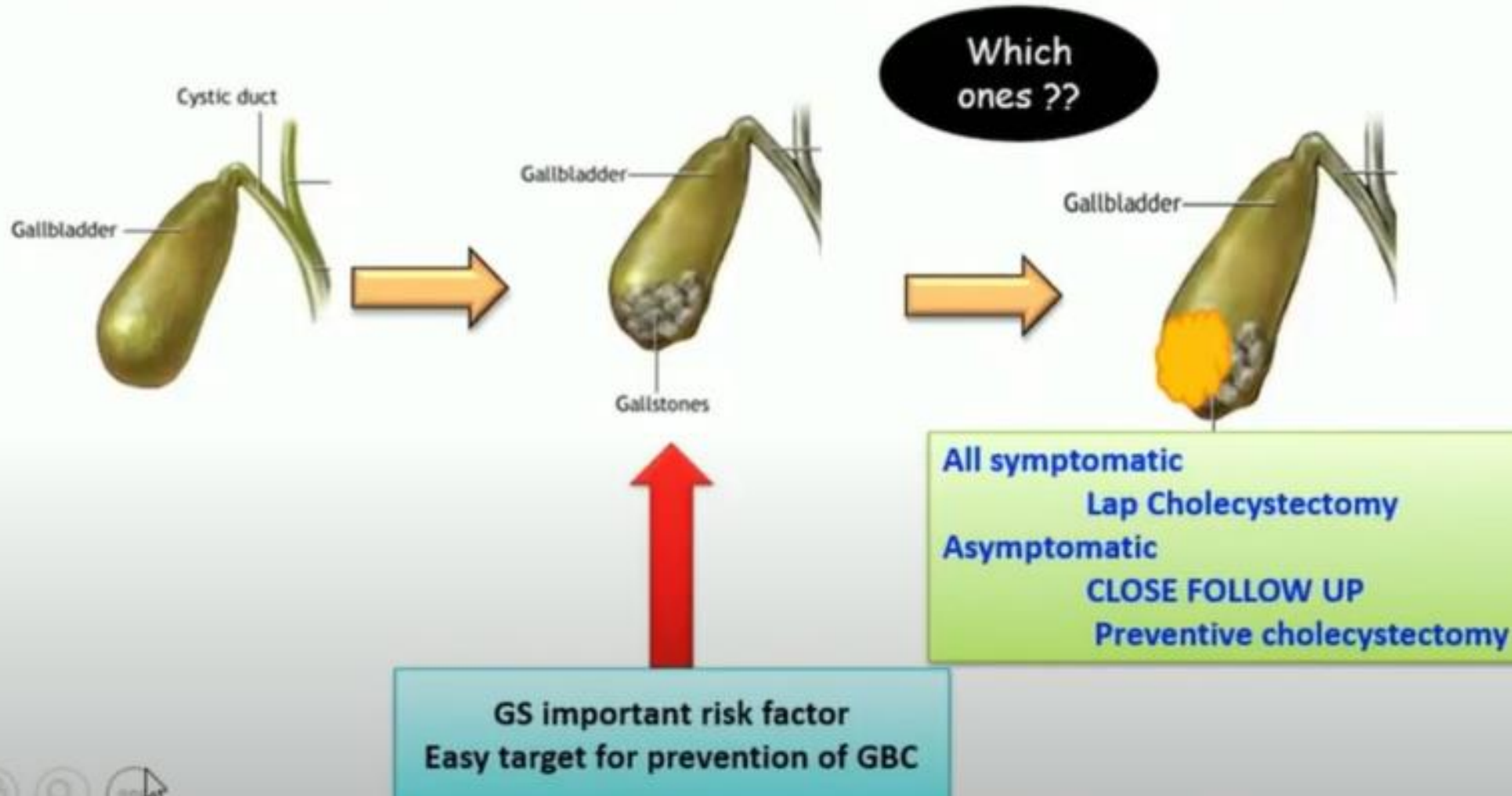
- Option of cholecystectomy should be discussed with all asymptomatic gallstone patients.
- Disclosure of material information is essential for patients to make an informed choice for prophylactic cholecystectomy.
- It is for the patient to decide on watchful waiting or prophylactic cholecystectomy, and not for the medical community to make a blanket policy of watchful waiting for asymptomatic gallstone patients.
- Patients with high-risk profiles, it is clinically justifiable to advocate cholecystectomy to minimize the likelihood of morbidity due to complications.

Asymptomatic Gall stones

Stones : Stone size > 1cm; Stone volume > 6 ml; Stone duration > 20 yrs
GB: Gall bladder polyp, Porcelain GB, Typhoid carrier
Host: F/ H GBC, Genetic mutations, Hemolytic anemia, Comorbidites
Environment: High risk area, Pesticides, Insecticides
Bile duct: APBU
Access: Remote area, Low SES, Astronaut, Traveler to isolated locations



Preventing GBC in india



Gall Stones - Mini Times bombs

