



## Asymptomatic Gallstones (ASGS) – To Treat or Not To?

### KEYWORDS

Gallstones, Cholecystectomy, Laparoscopy, Epigastrium

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### ABSTRACT

*The increasingly frequent detection of gallstones (GS) due to ubiquitous availability and use of diagnostic ultrasound for a wide range of abdominal complaints as well as 'routine check-ups', coupled with the recent advent and rapid establishment of laparoscopic cholecystectomy as the gold standard treatment of GS has refocused attention on the issue of asymptomatic gallstones (AsGS).*

*The clinical challenge in decision-making is to balance the projected prognosis of expectant management versus the risk, effort, inconvenience and cost of an immediate treatment 'for a particular patient'. By definition, a procedure is considered appropriate if its health benefits exceed its health risks by a sufficiently wide margin, thus making the procedure worth performing. This review will attempt to summarize the information available in the literature regarding the natural history of AsGS in general as well as in special clinical situations.*

### Definition

GS that cause no GS-related symptoms or complications and are diagnosed during routine ultrasound for other abdominal conditions are called asymptomatic GS. Classically, pain due to GS (often erroneously labelled biliary 'colic') is felt in the right upper quadrant or epigastrium, may radiate to the back or the right scapula, typically develops rapidly, is severe, steady and unrelieved by usual household remedies, change of position or passage of gas. Whether 'dyspeptic symptoms' in the absence of typical biliary pain can be attributed to GS, remains a contentious issue. Complications include acute cholecystitis (which may evolve into empyema, progress to gallbladder (GB) perforation or even gangrene of the GB, cholangitis (due to common bile duct calculi) and pancreatitis. Despite a strong association, proof of a causal relationship between presence of GS and occurrence of gallbladder cancer (GBC) is lacking, and thus one may not club GBC with other complications of GS, but there is no denying the fact that in areas where incidence of GBC is high, including northern India, this possibility does hang like the proverbial sword of Damocles on the treating surgeon's mind. The fact remains that once diagnosed, GBC is a disease with dismal prognosis with cures being rare [3]. The feeling of dread that patients usually feel (and surgeons often second) whenever a possibility of GBC in future is even mentioned in a patient with AsGs, often strongly influences the choice of treatment.

### Burden of the Problem

The overall prevalence of GS disease in most developed nations, including US, UK, Italy and the Scandinavian nations, is between 10% and 20%. The prevalence increases with age in both males and females. At the age of 65, about 30% of women have GS, and by the age of 80 years, 60% of both males and females have GS. The large majority of these (70–85%) are asymptomatic. In India, Khuroo et al. reported a 6.1% (men 3.1% and women 9.6%) prevalence of GS in subjects above 15 years of age

from Kashmir in northern India; 94% of these were asymptomatic at the time of diagnosis.

### Aim of Treatment (Prophylaxis)

When considering treatment of AsGS, one must not forget that the aim is not alleviation of a chronic or debilitating condition, but prevention of a potential future problem – biliary pain or biliary complications (including GBC). Hence, although we use the term 'treatment' what we actually do is 'prevention'. As is true for all prophylactic interventions, the expected risk to the patient should be near zero.

We would like to introduce a subtle difference between the terms 'prophylactic' cholecystectomy (to prevent symptoms and complications of GS, e.g., in reports from the West) and 'preventive' cholecystectomy (to prevent GBC, the issue more relevant in areas with high incidence rates of GBC).

### Treatment Options

From the most conservative to the most aggressive, treatment options may include – expectant management (wait and see); cholecystectomy if and when patient becomes symptomatic; selective cholecystectomy (in some cases) or routine cholecystectomy (in all cases).

### Natural History

**'There is no innocent gallstone'** (William J Mayo, MD, 1904)

More than a century after the above statement, there is now enough evidence that most incidentally discovered, clinically silent GS rarely have clinical significance. In most western countries, majority of patients with AsGS remain asymptomatic throughout their lives and do not require any treatment. Autopsy studies show that more than 90% of autopsied patients with GS died from unrelated causes. Death as the ultimate complication from AsGS is very rare and usually occurs in the elderly as a consequence of bil-

iary or postoperative complications.

According to the National Institute of Health consensus conference report, 10% of patients develop symptoms during the first 5 years and 20% by 20 years.

To summarize, most studies (all from the West with low incidence rates of GBC), mainly conducted in the 1980s, indicate the following:

- Progression from asymptomatic to symptomatic disease is relatively low, ranging from 10–25% over a period of 5–15 years.
- The longer the patients remain asymptomatic, the less likely they are to develop symptoms.
- Majority of patients rarely develop severe, potentially life-threatening complications, such as acute suppurative cholangitis or severe acute pancreatitis, without first having at least one episode of biliary pain.

#### Risk Stratification

Attempts have been made to stratify risk in patients with AsGS to identify patients in whom natural history and evolution may be different and who are at

- increased risk of conversion from asymptomatic to symptomatic disease.
- increased risk of developing complications.
- increased suspicion/risk of developing GBC.

Factors that have been reported to confer a higher risk of progression from asymptomatic to symptomatic disease and/or complications include age <55 years, smoking, female sex, greater body weight, presence of three or more GS, and presence of floating stones]. Other workers have observed that life expectancy >20 years, calculi >2 cm in diameter, calculi <3 mm and patent cystic duct, non-functioning GB and perioperative detection of incidental stones are the risk factors for progression to symptomatic/complicated GS disease

Higher risk of developing GBC has been reported in patients with GS and associated polyps >1 cm, calcified GB (13–22%), large stones >3 cm (10 times risk)], GB packed with stones and ethnic groups in high-incidence GBC areas.

#### Special Subgroups

Chronic haemolytic Syndromes  
Transplant Recipients  
Perioperative Discovery  
Diabetes Mellitus  
Cirrhosis of Liver  
Common Bile Duct Stones  
Gallbladder Cancer  
AsGS Treatment

#### Open Cholecystectomy

Open cholecystectomy (OC) was the gold standard treatment of GS for more than a century before this status was rapidly taken over by laparoscopic cholecystectomy

#### Laparoscopic Cholecystectomy

The charm of laparoscopic cholecystectomy (LC) is related to reduced pain, better cosmesis, early recovery and early return to work; it has become the gold standard treatment of GS without going through the rigors of randomized controlled trials, which most new surgical procedures are usually expected to face. The overall morbidity and mortal-

ity are comparable to OC; however, disconcertingly, even after more than two decades of experience, the rates of BDI after LC are definitely and significantly higher than those after OC.

#### What Should We Do Then?

Taking into consideration the fact that the natural history of AsGS is by and large benign, the incidence of complications is low and one or more episodes of biliary colic usually precede development of serious complications (and thus warn about transition from asymptomatic to the symptomatic stage when treatment is warranted), management of AsGS should be selective cholecystectomy in only high-risk subgroups (*vide supra*). In the absence of any data from our part of the world, this recommendation is necessarily based on data from studies done in the West.

There is, however, an urgent need to explore the geographic/ethnic differences in the natural history of AsGS and to more specifically identify high-risk sub-groups of patients. In the northern Indian context, the issue of GBC (especially because of its dismal prognosis) is especially important and we need to generate our own data on the basis of long-term studies, specifically looking at the rate of development of symptoms, complications and GBC in our population. Hard data from such studies would tell us if it is correct to extrapolate results from one population to another.

Till such data and evidence are available, surgeons and patients together would take a decision depending on their assessment of individual risks and choices. Patients definitely have to be cognizant partners in the decision after being explained the risks of waiting and an intervention that will not have any perceptible, immediate benefit, but has a definite risk of harm. There *MAY* be a case for suggesting preventive (for GBC) cholecystectomy in a young (20s or 30s) patient with a large GS in northern India but, as of today, there is no data or evidence to support it.

#### A recent Cochrane Database Systematic Review (2007) observed the following:

- There are no randomized trials comparing cholecystectomy versus no cholecystectomy in patients with silent (asymptomatic) GS.
- Further evaluation of observational studies, which measures outcomes such as obstructive jaundice, GS-associated pancreatitis and/or GBC for sufficient duration of follow-up, is necessary before randomized trials are designed in order to evaluate whether cholecystectomy or no cholecystectomy is better for asymptomatic GS.

'The availability of laparoscopic cholecystectomy should not expand the indications for gall bladder removal'.

**REFERENCE**

1. Quintana JM, Aróstegui I, Cabriada J, López de Tejada I, Perdigo L. Predictors of improvement in health-related quality of life in patients undergoing cholecystectomy. *Br J Surg.* (2003;90(12):1549–1555)
2. Attili AF, Santis A, Capri R, Repice AM, Maselli S. The natural history of gallstones: the GREPCO experience. The GREPCO Group. *Hepatology.* (1995;21(3):655–660)
3. Batra Y, Pal S, Dutta U, Desai P, Garg PK, Makharia G, Ahuja V, Pande GK, Sahni P, Chattopadhyay TK, Tandon RK. Gallbladder cancer in India: a dismal picture. *J Gastroenterol Hepatol.* (2005;20(2):309–314)
4. Sakorafas HG, Milingos D, Peros G. Asymptomatic cholelithiasis: is cholecystectomy really needed? A critical reappraisal 15 years after the introduction of laparoscopic cholecystectomy. *Dig Dis Sci.* (2007;52:1313–1325)
5. Khuroo MS, Mahajan R, Zargar SA, Javid G, Sapru S. Prevalence of biliary tract disease in India: a sonographic study in adult population in Kashmir. *Gut.* (1989;30(2):201–205)
6. Gracie WA, Ransohoff DF. The natural history of silent gallstones: the innocent gallstone is not a myth. *N Engl J Med.* (1982;307(13):798–800)
7. Friedman GD, Raviola CA, Fireman B. Prognosis of gallstones with mild or no symptoms: 25 years of follow-up in a health maintenance organization. *J Clin Epidemiol.* (1989;42(2):127–136)
8. NIH Consensus Development Panel on Gallstones and Laparoscopic Cholecystectomy. Gallstones and laparoscopic cholecystectomy. *JAMA.* (1993;269:1018–1024)
9. McSherry CK, Ferstenberg H, Calhoun WF, Lahman E, Virshup M. The natural history of diagnosed gallstone disease in symptomatic and asymptomatic patients. *Ann Surg.* (1985;202:59–63)
10. Festi D, Reggiani ML, Attili AF, Loria P, Pazzi P, Scaioli E, Capodicasa S, Romano F, Roda E, Colecchia A. Natural history of gallstone disease: expectant management or active treatment? Results from a population-based cohort study. *J Gastroenterol Hepatol.* (2010;25(4):719–724)
11. Schmidt M, Hausken T, Glambek I, Schleer C, Eide GE, Søndena K (2011) A 24-year controlled follow-up of patients with silent gallstones showed no long-term risk of symptoms or adverse events leading to cholecystectomy. *Scand J Gastroenterol* [Epub ahead of print]