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

KEYWORDS
Gallstones, Cholecystectomy, Laparoscopy, Epigastrium

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 focussed 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 unrelied 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. The feeling of dread that patients usually feel (and surgeons often see); cholecystectomy if and when patient becomes symptomatic; selective cholecystectomy (in some cases) or routine cholecystectomy (in all cases).

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-
illness 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 supplicative 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 GSs, 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 necessary 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