

Asymptomatic Gallstones: What We Should Do?

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Abstract

Cholelithiasis is common (10-25%) in the general population, with the majority (70-80%) being asymptomatic at the time of diagnosis, and only few (10-20%) produce symptoms or complications in life time. Cholecystectomy, either open or laparoscopic, is straight forward for symptomatic gallstones, unlike the controversies in asymptomatic or silent gallstones. Stones with true biliary 'colic' (and not the vague dyspeptic symptoms) are considered symptomatic. Patients on long-term parental nutrition and liver cirrhosis have high prevalence of asymptomatic stone formation. Transient gallbladder sludge or stone formation is common in children treated with high doses of ceftriaxone or in pregnancy. Diabetic patients with asymptomatic stones are no longer considered at being at high risk of developing symptoms or complications. In case of an asymptomatic gallstone together with a common bile duct stone, endoscopic treatment of the ductal stone is sufficient, leaving the gallbladder in situ. Most of the transplant patients with asymptomatic gallstones can safely undergo cholecystectomy when their asymptomatic stone turns symptomatic. On the other hand, good risk patients undergoing abdominal surgery may undergo concomitant cholecystectomy for asymptomatic gallstones. Certain geographical areas with high incidence of cholelithiasis and gallbladder malignancy may have a relaxed policy for cholecystectomy. Except in high-risk groups, most of the studies favor a 'wait and watch' policy for asymptomatic gallstones. Aim of this comprehensive review is to analyze the available evidence to help both clinician and patients to make a decision in case of asymptomatic or silent gallstones.

INTRODUCTION

Cholecystectomy is the definitive treatment for symptomatic gallstones and is generally a straight-forward decision. However, there are controversies in management of asymptomatic or silent (both terms are used for the similar explanation, and hereafter in this review, for the ease of reading, the term 'asymptomatic' will be used) gallstones^[1,234]. The opinion varies, from one extreme in which only typical biliary pain is considered the deciding symptom, to another extreme, in which any gastrointestinal symptom is exaggerated to remove the gallbladder. And it is true that few surgeons put effort to differentiate a truly symptomatic patient and predict the functional outcome of cholecystectomy. Surgical treatment has been simplified and encouraged to some extent by the introduction of minimally invasive laparoscopic surgery.

More people are diagnosed with gallbladder stones, with ever increasing frequency, in our daily clinical practice due to widespread use of routine ultrasonography (USG) for evaluation of various abdominal or pelvic complaints which may well be unrelated to the gallstone disease. Cholelithiasis is common world-wide; so much so that it is the commonest cause of hospitalization and surgery in most of the hospitals. Prevalence of gallstones is 10-25%^[5678910111213141516171819202122]

and it increases by age, approximately by 1% per year, reaching as high as 60% by the age of 80 years^[1623].

The majority of gallstones, up to 70-80%, is asymptomatic at the time of diagnosis and only about 10-20% produce symptoms in a life time^[5624]. Management of such incidentally discovered asymptomatic gallstones is a real dilemma for doctors and patients alike. Based on the natural history of asymptomatic gallstones, they should not be disturbed and watchful waiting is the management^[125152526272829303132] except in certain conditions when indication of surgery may be liberalized, for example in increased risk of malignancy, and other special circumstances.

In this review, the available evidence is extensively researched and thoroughly analyzed, to draw a clearer picture to help both clinician and patient to be able to critically make a decision in case of asymptomatic gallstones.

THE ASYMPTOMATIC GALLSTONES

Asymptomatic gallstones may be defined as those having caused no symptoms or the ones detected incidentally during investigations in the absence of gallstone-related symptoms

(biliary colic) or complications (cholecystitis, cholangitis and pancreatitis)^[717]. Vague or non-specific abdominal symptoms, for example dyspepsia, epigastric discomfort, flatulence or nausea are not considered gallstone-related^[192225] as they are common in the general population with or without other gastrointestinal problems^[8333435]. Moreover, in a controlled prospective study, neither biliary pain nor any other gastrointestinal symptom was consistently related to gallstone disease^[36]. Furthermore, it would be simply impossible to operate on every patient diagnosed with gallstones and very few patients and community at large may actually benefit from this unwarranted surgery.

THE SYMPTOMATIC GALLSTONES

Why do some patients with asymptomatic gallstones develop symptoms, what is the latent period and what is the common first symptom? Obviously there is no simple answer. Development of symptoms may be by chance, like movement and impaction of a stone, stasis, infection etc. Most of the studies on long-term follow-up of asymptomatic gallstones point out that uncomplicated biliary pain is the commonest (up to 90%) initial symptom^[37], followed by acute cholecystitis as presenting symptom and a low incidence of pancreatitis^[253839]. Gallstone-related complications are rare and do not present without first having at least one episode of biliary colic^[52640].

Traditionally, the gallstones accompanied by dyspeptic symptoms have not been considered asymptomatic stones and termed as ‘gallstone dyspepsia’. However, it is not surprising and most clinicians, as from observation in our clinical practice, will agree that almost half of all cholecystectomies are performed for dyspeptic symptoms. Recently, numerous studies have demonstrated that dyspeptic symptoms occur in equal frequency in both the groups, with or without gallstones, meaning there is no gallstone-specific dyspepsia. So, not the ‘asymptomatic-gallstone’, but ‘gallstone-dyspepsia’ is a myth^[19222541].

IS THE ASYMPTOMATIC GALLSTONE A PROBLEM?

The answer may well be ‘NO’, if we consider the asymptomatic nature of such gall stones, BUT, the ‘controversy’ surrounding it is definitely a problem for both the clinician and the patient. The problem may further complicate, when we consider the social, medico-legal and financial implication of the unwarranted surgery for this benign condition.

When an individual after a routine ultrasonography is given the report ‘cholelithiasis’, not only that individual is burdened but we, the service provider, are equally in a tight spot to provide decision whether to ‘ignore’ or ‘offer’ surgery. A whole range of professional and ethical issues are at stake. Simply giving these people the news that they have stones, may burden them to ‘give-in’ for the unnecessary surgery. Similarly, the question may be raised, if we do not disclose the risk, which is a distant rarity, for example of the ‘carcinoma of the gall bladder’! The matter becomes even more complicated when we consider the morbidity and/or mortality due to surgery for ‘asymptomatic’ stone which will never have caused problems till one dies a natural death!

This comprehensive review on natural course and observations of asymptomatic gallstones will, hopefully, provide ground, to update ourselves and patients so as we can give the patients best possible advice.

NATURAL HISTORY OF ASYMPTOMATIC GALLSTONES

What is the percentage of general population who will show gallstones on random USG screening and how many of them with this incidentally detected asymptomatic gallstones will develop symptoms and complications to require treatment?

The epidemiological studies have shown the prevalence of gallstones to be 10-25%, with the higher incidence in old age, especially in women^[42434445].

A century ago, in 1904, Mayo wrote ‘there is no innocent gallstone’, but today we know there are plenty of evidences to support that not only there are asymptomatic gallstones but most of these incidentally found stones remain asymptomatic throughout life, and do not require treatment^[122225262829303742464748495051].

Gallstone disease is a benign condition because 70-90% of patients remain asymptomatic. Several studies have shown that the natural history of incidentally discovered gallstone is not only benign but even when they do develop complications, it is usually preceded by at least one episode of biliary pain^[81526375253].

Gastrointestinal symptoms (nausea, belching, vomiting, bloating before or after meal, dull or colicky pain in the abdomen, central or right-sided or of other location) and blood lipid levels do not differ between individuals with or without gallstones and in individuals untreated or treated for gallstone-related complications^[424445]. It would be interesting

if we can identify individuals with asymptomatic gallstones, as ‘who’, in particular, will develop symptoms or complications of acute cholecystitis, pancreatitis or gall bladder cancer^[465054].

Studies on long-term follow-up of individuals with asymptomatic gallstones have shown that over a 20-year period only 20% will develop biliary pain and the mean probability of developing pain is only 2% during the 1st five years, 1% during the 2nd, 0.5% in the 3rd and 0% during the 4th five years^[27152640535455565758]. In other words, the longer the stones remain asymptomatic, the less likely it is that complications will occur^[2]. In about 30%, patients who have had pain do not have further episodes of pain^[1]. Thus, for persons with asymptomatic gallstones, the natural history is so benign that not only treatment but also a regular follow-up is not recommended^[153].

Furthermore, in a controlled prospective study, neither biliary pain nor any other gastrointestinal symptom was consistently related to gallstone disease; therefore, indication of elective cholecystectomy cannot be simply based on the presence of biliary pain alone and relief of pain should not be attributed to a successful cholecystectomy alone^[6]. Also, in a randomized clinical study, the symptomatic, non-complicated gallstones have been managed safely by watchful waiting with a very low risk of developing complications^[59]. Thus, in a significant number of cases, the reason of removing gallbladder may well be just common practice rather than evidence-based medicine.

Certain special conditions, like patients on long-term parental nutrition have an increased incidence of both calculous and acalculous cholecystitis^[60]. End-stage renal disease is another risk factor for cholelithiasis and up to 28% of patients on regular dialysis develop gallstones. Like naturally occurring asymptomatic stones, 80% of these stones remain asymptomatic^[61].

Age, in itself, is a risk factor for gallstones, as prevalence of asymptomatic stones reaches as high as 60% by the age of 80 years^[1623], but the longer the patients remain asymptomatic, less likely they will develop symptoms and the probability of developing symptoms fall steadily over time^[25562].

SPONTANEOUS DISSOLUTION OF STONE

Does a gallstone disappear spontaneously without treatment?
- The answer is a definite ‘yes’!

Reversible, asymptomatic biliary sludge or stones, more commonly referred as ‘pseudolithiasis’ (in 12-45%), have been reported in pediatric patients treated with high doses of ‘ceftriaxone’, especially after surgical procedures or when there is restriction of oral diet. Up to 40% of ceftriaxone is excreted unchanged into the bile and has high calcium-binding affinity which may form a salt and finally biliary lithiasis. These stones, however, disappear spontaneously on follow-up scan within 2 weeks to 4 months of cessation of ceftriaxone and thus unnecessary cholecystectomies should be avoided^[6364656667].

Biliary sludge (in 31%) and stones (in 2%) occur frequently during pregnancy (i.e. first trimester until immediately post partum), and disappear spontaneously, with sludge disappearing faster than stones (5 versus 9.7 months). Sludge usually does not cause pain while stones may cause biliary pain in up to 28%. Also, patients having sludge earlier have increased risk of developing new stones during pregnancy^[68].

WHICH ASYMPTOMATIC GALLSTONES DEVELOP SYMPTOMS?

From both the patient’s and the physician’s point of view, it would be very useful, medically and legally, to recognize the subgroup of asymptomatic gallstone patients who will develop symptoms or complications. However, there is simply no shortcut and it is not possible to pinpoint factors, either local (number, size, nature of stones, wall thickness and contractility of gall bladder) or general (age, gender, associated co-morbidities) to predict who or when one will develop symptoms or complications.

There have been attempts to classify asymptomatic gallstones into low-risk (functioning gallbladder with small stones 3-20mm, without co-morbid conditions) and high-risk groups (large stones >2.5cm and multiple tiny stones <3mm^[697071], obliterated cystic duct^[8]). Patients with at least 1 gallstone smaller than 5 mm and a number of stones over 20, each have a more than 3-fold increased risk of presenting with acute gallstone pancreatitis, as observed in Korean patients^[72].

Contrary to the traditional belief, age, sex and associated diseases such as diabetes or organ transplantation are not predictive of symptoms or complications; thus in the majority of asymptomatic gallstones, there is not only no need of treatment but also no need of regular surveillance.

ASYMPTOMATIC GALLSTONES AND LAPAROSCOPIC CHOLECYSTECTOMY

Has laparoscopic cholecystectomy changed the view of the surgeons or physicians and the patients towards asymptomatic gallstones? Unfortunately, the answer is 'Yes'. After the introduction and widespread use of laparoscopic cholecystectomy, a significant change has been observed possibly due to the attitude of surgeons to relax the indication of surgery, including for asymptomatic gallstone, resulting in an increase (of up to 60%) in cholecystectomies worldwide^[315737475767778]. Laparoscopic cholecystectomy in young patients with uncomplicated, asymptomatic gallstones is safe with greater patient acceptance^[798081], and this approach in early age eliminates the need for problematic surgery at a later date when the patient is older, with associated diseases or with complications.

The increase in laparoscopic cholecystectomy, especially in asymptomatic stones, may also be due to counseling by the primary physician (and many a time surgeon) with warning the patients about future complications causing anxiety and fear without exploring in depth the natural history of asymptomatic gallstones. Another reason may be whether more patients with gallstones are willing to undergo cholecystectomy with the availability of laparoscopic surgery^[8283].

It is important that not only the referring physicians and the patients, but also the surgeons should take into consideration the natural history of asymptomatic gallstones, together with the associated morbidity and mortality of the major operation under general anesthesia. Not only this, but we must also think of the increased burden and cost to the society and health care system because of this unnecessary major surgery while counseling patients about this controversial condition of asymptomatic gallstone^[5484].

ASYMPTOMATIC GALLSTONES IN SPECIAL CIRCUMSTANCES

Some patients demand special attentions in managing asymptomatic gallstones, some of them are

DIABETES

Traditionally, asymptomatic gallstones in patients with diabetes have been thought to be at higher risk of developing symptoms and complications like infection, gangrene and perforation^[38858687], possibly because of autonomic neuropathy in such patients which may mask the pain and features of acute cholecystitis^[88] causing delay in diagnosis.

And therefore, prophylactic cholecystectomy has been recommended in the past in diabetic patients with asymptomatic gallstones^[81786].

However, this dictum has been challenged by several studies and observation of natural history, that, as in general population, asymptomatic gallstones in diabetics do not carry higher risk and in these patients the surgical morbidity and mortality is comparable to non-diabetics once other co-morbidities such as cardiovascular or renal disease are taken into consideration^[858990919293].

Since few patients with asymptomatic gallstones with diabetes mellitus develop pain or complications over time^[94], these patients can be managed expectantly like the general population^[2949858991949596] and prophylactic cholecystectomy is not necessary. However, unlike in general populations, early surgery is advised once symptoms develop^[8].

PREGNANCY

Female sex hormones are causally related to (cholesterol) gallstones, and the risk increases with the use of exogenous female sex hormones and with pregnancy. While oral contraceptives do not pose a greater risk for gallbladder disease, oral estrogen in postmenopausal women is associated with gallbladder disease and women harboring asymptomatic gallstones should not receive exogenous estrogens (pills or hormone replacement therapy HRT) because of the possibility of developing cholecystitis^[97].

Asymptomatic biliary sludge develops frequently (26% to 31%) during pregnancy, and spontaneously disappears after delivery. New gallstones occur less frequently (2-5%) during pregnancy but these stone may disappear after delivery^[98].

The high prevalence of sludge (mostly cholesterol monohydrate crystals) and gallstones in pregnant women may be due to greater bile lithogenicity (due to estrogen) and gallbladder hypo-motility (due to progesterone). Pregnancy may increase the symptoms in women who are unaware of the existing asymptomatic gallstones^[99].

Surgery should be performed only for complicated non-resolving symptomatic gallstones during pregnancy as in over 90 per cent of patients the acute process will resolve with conservative management^[100]. Traditionally, laparoscopic cholecystectomy has been of concern in pregnancy but there have been several successful reports of laparoscopic cholecystectomy in the literature^[97101].

GALLBLADDER CARCINOMA

Gallbladder carcinoma is rare and has a very poor prognosis, with less than 5% five-year survival^[102]. As early gallbladder carcinoma does not have specific symptoms, the debate continues on the 'silence' of asymptomatic gallstones. There is no straight-forward answer because of the relationship of gallstones and gallbladder cancer, especially in different groups of population in different geographical areas. Gallbladder cancers have coexisting gallstones, specially large stones (≥ 3 cm) in 75-90% of cases^[18102103104105]; however, only 1 or 2% of patients with stones develop cancer^[102].

It is believed that people from certain geographical areas, for example, Maori from New Zealand and people from Chile, northern and central India and Karachi (Pakistan) probably have lithogenic genes which cause high incidence of gallstones at early age resulting in high frequency of gallbladder cancer (incidence of gallbladder cancer in Delhi is 21.5 and in Karachi 13.8/100000)^[33106]. Similarly, porcelain gallbladder has high incidence (13-25%) of carcinoma^[9107108109]. But, when we consider the risk of developing cancer in 'all' of the patients with asymptomatic gallstones, it is less than 0.01%, which is less than the mortality associated with cholecystectomy^[15]!

Mirizzi syndrome, the obstructive jaundice caused by compression of the common hepatic duct by an impacted stone in the gallbladder neck, is a rare complication of long-standing cholelithiasis and may be associated with gallbladder cancer. Elevated CA 19-9 in this syndrome is indicative of a coincidental gallbladder malignancy^[105110]. However, the increase in the number and size of the stones in patients with gallbladder carcinoma may not have any particular chemical or physical influence but may be simply a reflection of the long-term presence and an effect of aging^[111].

Thus, both patient and surgeon should acknowledge these facts and take into consideration that prophylactic cholecystectomy is not a therapeutic strategy (except in very selected subgroups) to prevent the development of gallbladder cancer^[1838102].

CONCOMITANT OR INCIDENTAL CHOLECYSTECTOMY

What should be done when asymptomatic gallstones are diagnosed either preoperatively or intraoperatively during a planned abdominal operation? Ideally, all patients with

abdominal surgery should have preoperative ultrasonography to detect presence of gallstones so as to counsel the patient and plan before a decision is taken^[102113114115]. Several studies have shown development of symptoms postoperatively in an otherwise asymptomatic gallstone requiring cholecystectomy within a year of initial laparotomy, possibly due to postoperative stasis of bile causing cholecystitis^[113114116117118].

In stable and healthy women undergoing gynecological major surgery, the concomitant cholecystectomy is safe and appropriate^[115119], if there is no compromise in exposure of gallbladder.

The traditional belief and concern of increased incidence of graft or prosthesis infection, for example, mesh in hernia repair and graft in aortic aneurism, has been disputed by most of the studies^[116].

On the other hand, the incidence of acute cholecystitis complicating abdominal aortic aneurysm (AAA) repair varies widely from 0.3 to 18 per cent, unlike that of endovascular repair of AAA, which does not predispose the patient to the development of symptomatic cholelithiasis during the perioperative period. Thus, pre- or per-operative finding of gallstones does not necessitate cholecystectomy and these patients may safely undergo surgery should they develop symptoms^[120].

Incidental cholecystectomy during laparoscopic antireflux surgery (fundoplication) is safe and does not influence the clinical outcome^[121]. There may be increase in new gallstone formation after gastric bypass; however, most of these new stones are asymptomatic and prophylactic cholecystectomy is not indicated^[122].

The sickle cell disease (SCD) patient undergoing splenectomy should have concomitant removal of the gallbladder even if the stones are asymptomatic because such stones have a high incidence of developing symptoms and complications^[123124]. Similarly, patients on long-term parental nutrition are prone to develop calculous and acalculous cholecystitis and cholecystectomy should be considered in these patients at the time of laparotomy performed for different reasons^[60].

COLON CANCER

After cholecystectomy, the secondary bile acids (deoxycholic acid, lithocholic acid) which are carcinogenic to large bowel increase in bile and feces due to increased

enterohepatic circulation and bacterial degradation of primary bile acids^[17125126]. Cholecystectomy increases the risk of intestinal cancer, a risk that declines with increasing distance from the common bile duct and the right colon is the most affected part^[17125126127128129130131]. However, some earlier studies done in the 80s have failed to demonstrate increased association^[132133]. Nevertheless, this extra hazard should be kept in mind when advising unnecessary cholecystectomy in asymptomatic patients.

TRANSPLANT SURGERY

Studies have demonstrated a relatively high incidence of gallstones in adult solid-organ transplant recipients who are on cyclosporine-A immunosuppression^[134]. Management of incidentally found asymptomatic gallstones in solid-organ transplant recipients may be either a prophylactic cholecystectomy (either pre- or post transplantation) or expectant management.

Prevalence of cholelithiasis in the heart transplant population is high, up to 42%^[134], simply because of advanced age; but only a minority of these patients with asymptomatic gallstones ever becomes symptomatic. Prophylactic cholecystectomy or regular screening with USG is not indicated in such patients because when they do develop symptoms, cholecystectomy can be safely performed^[135136137138].

Treatment of gallstones carries low risk and does not represent any significant increase in risk of complications in patients following renal transplantation^[139]. Prophylactic cholecystectomy in asymptomatic patients before kidney transplantation is not justified^[134]. Similarly, there is no evidence of increased morbidity due to cholelithiasis after renal transplantation. As in the general population, the risks associated with asymptomatic cholelithiasis do not appear to warrant prophylactic cholecystectomy for patients awaiting renal transplantation^[140].

CIRRHOSIS OF LIVER

Gallstones occur more commonly in patients with cirrhosis. The incidence increases with the severity of liver disease, and the majority remain asymptomatic. When symptoms do occur, morbidity and mortality are much higher than in non-cirrhotic patients.

Asymptomatic gallstones in cirrhotic patients are best managed conservatively with close follow-up and surgery only in well-compensated liver disease, if symptoms occur^[141142143144145]. And, the risk of developing symptoms is

significantly lower in men in comparison to cirrhotic women with positive family history^[146].

Elective surgical treatment of asymptomatic cholelithiasis at the time of portal diversion does not increase risk and in such a situation, cholecystolithotomy is easier and probably safer than cholecystectomy^[147].

COMMON BILE DUCT (CBD) STONE

When patients present with an asymptomatic gallstone together with a CBD stone, then the management of these biliary stones requires special consideration because the presence of a CBD stone is a risk factor for severe complications in up to 50% of patients.

After endoscopic stone removal, a cholecystectomy may be offered in younger patients (< 50 years) but a 'wait and see' policy is justified in poor-risk elderly patients^[148].

However, the traditional approach of combined endoscopic-laparoscopic treatment in patients with cholecysto-choledocholithiasis^[149150151] may not be justified because less than 10% of patients with gallbladders left in situ after endoscopic retrograde cholangiopancreatography (ERCP) management of CBD stones ever return with further biliary complications, and expectant management of wait and see is probably a better alternative^[152].

NON-HAEMOLYTIC PAEDIATRIC PATIENTS

As in the general population, with the widespread use of diagnostic USG there is an increase in the number of pediatric patients diagnosed with asymptomatic gallstones. In 60-80% of children, the cause of gallstones is idiopathic with equal prevalence in both sexes^[153154155].

Unlike adults, children can not give clear and timely clinical history and need slightly different management to prevent complications. In an asymptomatic child younger than 3 years of age, if echogenic shadows are present for at least 12 months following resumption of oral feeding or when the gallstones are radiopaque or true stones with echogenic shadowing (not echogenic sludge), these children should undergo surgery^[155].

Fetal biliary echogenic material or sludge is found in 0.45 % of pregnancies, with no link to maternal factors or perinatal abnormalities. In postnatal follow-up, only a few neonates will have persisting asymptomatic biliary sludge and in further follow-up USG, most are normal. Incidentally diagnosed neonatal cholelithiasis usually has a benign course

with about a 50% chance of spontaneous resolution during the first 6 months of life and for persistent asymptomatic gallstones no treatment is needed and they can be safely followed without complications^[156157158159].

HAEMOLYTIC PEDIATRIC PATIENTS

Gallstones are common in sickle cell disease (SCD), as high as 57%. Even though 30% of these stones are asymptomatic, elective cholecystectomy, preferably laparoscopic, is recommended because of the increasing longevity and to simplify medical management by eliminating the diagnostic confusion between acute cholecystitis and sickle cell crisis (abdominal or hepatobiliary). Also, asymptomatic stones in SCD have a high incidence of developing symptoms and complications^[160161162163164165166167168]. In case of splenomegaly, the SCD patient should undergo routine USG to combine cholecystectomy together with splenectomy^[161167].

Patients with mild hereditary spherocytosis (haemolysis without anaemia) and chronic hemolytic anaemia have an increased risk of asymptomatic gallstone formation. Prophylactic splenectomy and cholecystectomy provides substantial gain in quality-adjusted life expectancy^[165169].

SPECIAL PROFESSION, E.G. AVIATION/AIR FORCE

Traditionally, the U.S. Air Force aero-medical policy for asymptomatic cholelithiasis required the aircrew to undergo cholecystectomy prior to being considered for return to flying duties. However, the policy review concluded that overall incidence of acute cholecystitis in aircrew would not be changed by cholecystectomy performed on aviators with incidentally detected asymptomatic cholelithiasis^[170].

In another study to examine the aero-medical outcomes of aviation personnel with asymptomatic cholelithiasis, in a 12-year period (1988-2000), out of 23 individuals with cholelithiasis, 11 were granted waivers and none were revoked during the study period because of development of symptoms or complications^[171].

ACCESS TO EMERGENCY SURGICAL FACILITY

This special situation arises when patients with asymptomatic stones are from remote places with lack of healthcare service or unavailability of an experienced surgeon to provide emergency service in case symptoms or complications occur. In such cases, surgery for asymptomatic gallstones may be justified.

COSMESIS

This could be an issue for patients living in an area remote of laparoscopic services, especially young females, concerned about cosmesis, and candidates for complications in case of acute inflammation; then prophylactic laparoscopic surgery at asymptomatic or early symptomatic stage can be offered.

PATIENT'S WISH

This is probably the most difficult situation whether to proceed to surgery in asymptomatic gallstones simply because the patient wishes to be operated. Factors which may be taken into consideration include various special situations discussed above, patient's and surgeon's attitude together with medico-legal issues. Normally, the patient should not dictate the management, even upon herself or himself, since the surgeon alone (and the institution) will have to bear the consequences of the complications, should one arise, in a procedure which was not indicated in the first place, as this will be difficult to defend in the court. Also, the patients may be ill-informed in the very first place by the primary physician or peer so that they have fear of developing severe complications, namely cancer. In such circumstances, the example of the 'appendix' which has an almost similar chance of developing symptoms (about 15%, like asymptomatic stones becoming symptomatic) may be helpful as an argument. Similarly, in the question of developing malignancy, one may mention cautiously the example of breast cancer, as 'having breast' is 'the' risk factor of developing cancer, yet we do not generally think of removing it fearing one day it may develop cancer.

CONCLUSION

Controversies in optimum management of asymptomatic or silent gallstones persist. Consulting physicians, treating surgeons and patients alike all should take into account the natural history of asymptomatic gallstones before making a decision to proceed to cholecystectomy, and laparoscopic surgery should not broaden or relax the indication for asymptomatic gallstones. All concerned should be fully informed that the majority of asymptomatic patients rarely develop symptoms or complications without at least one 'warning' biliary 'colic'. Cholecystectomy, with modern facility and safe anesthesia, can be performed safely when an asymptomatic gallstone turns symptomatic, with almost equivalent result to routine elective surgery.

Asymptomatic or silent gallstones, except in certain high-risk groups and under special circumstances, should be left 'silent' with 'wait and watch' policy, and active involvement

of the patient in the process of decision making.

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