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Editorial

Asymptomatic gall stones: "Is the verdict for cholecystectomy out?"

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Sir William Osler believed that most gallstones caused no symptoms[1] and William Mayo regarded "innocent" gallstones to be a myth.[2] In the middle of 20th century, a study by Colcock and McManns, suggested that every gallstone must be surgically removed.[3] They assumed that all asymptomatic gallstones would eventually become symptomatic.[4] In that era and thereafter proponents always told the patients about the risks involved in not getting the "diseased organ" removed rather than the risks of surgery or safety if left alone. That the gallstones may be associated with cancer of gallbladder was always conveyed to the patients in last few decades.

Asymptomatic gallstones are detected incidentally in patients who do not have any abdominal symptoms or have symptoms that are not thought to be due to gallstones.[5] Use of ultrasonography for the investigation of a wide range of abdominal symptoms has resulted in the increased diagnosis of asymptomatic gallstones.[6] It is reported that 10–20% of population in most western countries have gallstones, and among them up to 70% are asymptomatic at the time of diagnosis. Asymptomatic gallstone disease has a benign natural course; the progression of asymptomatic to symptomatic disease is relatively low, ranging from 10–25%.[7] The majority of patients rarely develop gallstone-related complications without first having at least one episode of biliary pain. Before the advent of laparoscopic cholecystectomy, open cholecystectomy was performed only for symptomatic disease. Laparoscopic cholecystectomy has become the gold standard in the management of the gallstone disease due to its ease of performance, safety involved, short hospital stay, less pain, rapid resumption of post operative activity and almost no long term complications.[8] Minimally invasive surgery has given easy excuse to surgeons to get rid of the asymptomatic gallstones. Does this imply, we advise laparoscopic cholecystectomy for all asymptomatic gallstones ignoring the risk of bile duct injury and patient related complications which may result in increased mortality; even while conclusive evidence of benefits of cholecystectomy is lacking?[4]

The risk of biliary symptoms, cholecystitis and cancer must outweigh the benefits of wait and watch approach for us to advise prophylactic cholecystectomy to a patient. How frequently do we pause to contemplate and assess the accuracy of our decisions whether gallstones are responsible for any of the symptoms the patient experiences or which patients with asymptomatic gallstones are at risk to progress and develop symptoms? How many times have we left behind gallstones at surgery deciding that they were irrelevant and harmless to the patient's health?

According to the 1992 NIH Consensus Conference report,[9] 10% of patients develop symptoms during the first year after diagnosis and 20% by 20 years. The Italian (GREPCO) study suggests an annual complication rate of 0.3 - 1.2% if the stones are initially asymptomatic and 0.7 - 2% per annum if the stones are initially symptomatic.[10] The risk benefit calculations given by World Gastroenterology Organisation (WGO) are as follows: out of 10,000 patients with asymptomatic stones, 200 patients will develop acute complications over 10 years with a

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death rate of 2.5% (5 patients) and 100 will develop acute pancreatitis with a 10% death rate (10 patients). Thus 15 patients will die from gallstone complications. If all 10,000 underwent surgery, between 10 to 50 would die from complications of the surgery. The follow up deaths are spread over 10 years, whereas the operative deaths would occur immediately.[5] Here again the authors have reiterated whether it is correct in extrapolating statistics to a given patient on the operating table when gallstones are discovered per-operatively and the surgeon is challenged to decide the actual risks involved for the patient. The epidemiology of gallstones and the risk of complications and cancer tend to vary in heterogeneous populations across countries, as also in India. The overall mortality risk of cholecystectomy varies from 0.14-0.5% in different series depending on the age and fitness of the patients. There is now evidence that cholecystectomy leads to a slightly increased risk of right sided colon cancer in women after 15 years. There is also an increase in post-cholecystectomy gastro-oesophageal bile reflux and diarrhoea in patients with irritable bowel syndrome and loose stools. Studies have indicated that in 1-2% of post-cholecystectomy patients a dysfunctional apical sodium-dependent bile acid transporter (ASBT) results in chronic diarrhoea and requires bile acid sequestrants for its management.[5] In addition to the overall mortality risk of cholecystectomy there is an ongoing and perhaps increasing problem of bile duct injury with its associated long term morbidity and often goes unreported. This is a compelling argument against laparoscopic cholecystectomy for asymptomatic gallstones. The rate of complications for asymptomatic gallstones is 0.2-0.8 % and when this is balanced against the risks of cholecystectomy, expectant management is a more beneficial option.[11]

The presence of gallstones is a co-factor in the development of gallbladder cancer.[12] There are certain factors which increase the risk of developing gallbladder cancer and these include a calcified (porcelain) gallbladder,[13] presence of gallstones greater than 3 cm in diameter,[14] and presence of gallbladder polyps greater than 10 mm in size.[15] It is recommended that patients at increased risk of gallbladder cancer are considered for cholecystectomy. This policy has been implemented in other primary care trusts (PCTs) across UK.[16-20] Nevertheless the risk of developing cancer in all patients with asymptomatic gallstones is less than 0.01%, less than the mortality associated with cholecystectomy. However, in high risk groups like central Americans, north American Indians and Maoris from New Zealand, prophylactic cholecystectomy may be considered.[7] In north India the prevalence of gallbladder cancer is very high (23:10,000)[21] and may warrant prophylactic cholecystectomy for gallstones. However, how many gallbladder cancers are linked to gallstone disease remains to be quantified.

Cholecystectomy is recommended in patients awaiting solid organ transplantation.[22] The patient is more likely to become symptomatic within the 2 years post transplantation[7] and complications may become more difficult to diagnosis once the patient is immunocompromised.[22] Therefore patients who are immunocompromised should be considered for cholecystectomy for asymptomatic gallstones. Patients suffering from chronic haemolytic syndromes are at increased risk of development of gallstones.[7] Cholecystectomy should be considered in these patients as an early onset of gallstone disease increases their lifetime risk of biliary complications and are symptomatically difficult to distinguish from vaso-occlusive crisis.[7] Therefore patients with chronic haemolytic syndromes should be considered for cholecystectomy for asymptomatic gallstones. Complications from gallstones can be serious and fatal. It is therefore important to identify patients at risk of complications due to asymptomatic gallstones and evaluated for cholecystectomy. Indicators of this include choledocholithiasis, gallstones greater than 2 cm in diameter, gallstones less than 3 mm in diameter with a patent cystic duct or a non-functioning gallbladder.[7] Diabetes alone is not an indication for prophylactic cholecystectomy.[23]

Advocating prophylactic cholecystectomy for asymptomatic gallstones without attendant risk factors finds no justification. There is no clear cut evidence of increased risk of malignancy if such patients are managed with a wait and watch strategy. A Cochrane review published in 2009 concluded that there is not enough quality evidence to recommend or refute cholecystectomy for asymptomatic gallstones.[24] However there are certain situations where prophylactic cholecystectomy may be justified. The author agrees in principle to the summary of recommendations given by WGO practice guidelines for asymptomatic gallstone disease[5] and with the evidence briefing for cholecystectomy for asymptomatic gallstone policy by NHS Suffolk.[25]

Indications for prophylactic cholecystectomy would be:

a. Patients who have gallstones and may be living in a part of the world that is very remote from the nearest medical facility, should they get a complication.
b. Cholecystectomy in asymptomatic patients should be considered in individuals living in high risk areas for gallbladder cancer.[7,21]

c. Patients with immune suppression e.g. after transplantation may have a far higher risk should they develop a complication such as cholangitis. Cyclosporin A and tacrolimus (FK-506) are prolithogenic because of decreased bile salt export pump function (BSEP).
d. Patients with insulin-dependent diabetes do not have a higher prevalence of stones, but when elderly, have a higher risk should they develop inflammatory complications.
e. Patients with rapid weight loss, weight cyclers.
f. Increased risk of gallbladder cancer (indicators of this include a calcified gallbladder, presence of gallstones larger than 3 cm in diameter or presence of gallbladder polyps greater than 10 mm in size)
g. Patients with chronic haemolytic syndromes.
h. Patients at an increased risk of developing other complications of gallstone disease. Indicators of this include the presence of gallstones greater than 2 cm in diameter, the presence of choledocholithiasis, gallstones smaller than 3 mm in diameter with a patent cystic duct or a non-functioning gallbladder.[7]

In conclusion, it may be said that there is no strong evidence for prophylactic cholecystectomy for asymptomatic gallstones but there is a case for making exceptions. While the jury may debate, it is the judge (surgeon) who has to pronounce 'guilty' in a given case.

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