

Decision-Making in Patients with Gallstones: Therapeutic Modalities

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Introduction

Since decision-making in patients with gallstones is a very common surgical problem, the Permanent Working Party on Clinical Trials (CAS) has chosen it for an experiment for developing practice guidelines in gallstone disease. This experiment combined two methodologies: a carefully planned consensus development conference [1] and the production of a clinical algorithm by an electronically transmitted group response of both the members of the panel and of the general audience [2].

We will present a clinical algorithm for patients with gallstone disease based on aspects of treatment and prognosis of cholelithiasis which are regarded to be important for making a therapeutic decision in gallstone patients: natural course of the disease, perioperative risk analysis, postoperative pain and recovery, the present status of medical litholysis (bile acid therapy - BAT) and extracorporeal shock-wave lithotripsy (ESWL), the aspect of recurrence rate in noninvasive treatment and the role of open cholecystectomy in the laparoscopic era.

Nevertheless, it is absolutely necessary not to lose track of the individual case in connection with the subsequent presentation of the clinical algorithm. Its development for a typical, paradigmatic clinical scenario should not lead to its uncritical and schematic application in individual patients. Thus, the decision for the physician and patient is to prevent a potential future problem, either biliary pain or a biliary complication. To make this decision requires information about prognosis for the outcomes and about the efficacy, safety, and effort of these possible therapies.

Prevalence of Gallstone Disease and Natural Course

Gallstones are very common. The prevalence of cholelithiasis has been shown to be around 10% for females younger than 50 years as against 35% by age 75. In men the figures are 5% under 50 years and 15-20% respectively in the older group [3-5]. The natural course of the disease is shown in figure 1. Two thirds of these persons are asymptomatic and unaware of having gallstones [5, 6]. The annual rate of conversion

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Signs and Symptoms of Gallstones

As we have mentioned before, it is of importance to differentiate between symptomatic and asymptomatic gallstones because the indication for any treatment is based upon the presence of symptoms.

It has been clearly shown that so-called dyspeptic complaints such as unspecified upper abdominal pain, fullness, meteorism, nausea, vomiting, fat intolerance, diarrhea as well as constipation occur in comparable frequencies in patients with and without gallstones [12]. In many such cases, gastrointestinal symptoms are due to irritable bowel syndrome, peptic ulcer, or symptomatic hiatal hernia. Therefore, the term 'symptomatic gallstone' must be defined avoiding all kinds of unspecific upper abdominal complaints. We define a symptomatic gallstone as the cause for severe continuous pain in the right hypochondrium or in the epigastrium, lasting 15 min to 5 h, with often waking the patient at night. The symptoms disappear spontaneously or by spasmolytic therapy. There is general agreement that only patients with symptomatic gallstones are candidates for treatment including surgery or nonsurgical management [5, 13–15]. For persons with asymptomatic gallstones, watchful waiting is the best course because natural history is so benign that treatment is generally not recommended [5, 15].

Obligatory Diagnostics

A patient presenting with clinical signs of gallstone disease nowadays undergoes ultrasound examination as the first step and the best choice of noninvasive diagnostics [16, 17]. It has been shown that the presence of gallstones in the gallbladder is accurately estimated by ultrasound in 74–96% of cases [16, 17]. Besides the information about gallstones, ultrasound provides data about the wall of the gallbladder (acute cholecystitis, > 4 mm in chronic cholecystitis), the contracting function of the gallbladder (important for BAT and ESWL) and gives information about the common bile duct. However, the accuracy in detecting common bile duct concretions appears to be approximately 30% only [16]. The minimum blood or serum analysis in the management of a gallstone patient includes blood leukocytes to check the degree of inflammation, and serum alkaline phosphatase and total bilirubin to see whether the common bile duct is obstructed by additional stones.

If a nonsurgical treatment is considered, an oral cholecystography should be part of the diagnostic work-up to decide if the patient fulfills the strict inclusion criteria for medical litholysis (BAT) or ESWL (fig. 3, 4). If there surgical therapy is considered, preoperative routine intravenous cholangiography is an easy and noninvasive method to select patients for endoscopic retrograde cholangiopancreatography (ERCP), also because of its high accuracy in detecting common bile duct stones in 60–90% of all cases [16] with the possibility to remove them endoscopically prior to the operation. Nowadays many surgeons are in favor of routine intraoperative cholangiography during laparoscopic cholecystectomy. The goal of the examination is no longer the detection of unsuspected common bile duct stones only, but also the visualization of anatomical variations of the bile ducts to prevent bile duct injuries [18]. In this question a controversy persists and the standard management is not yet established.

Natural course and clinical stage

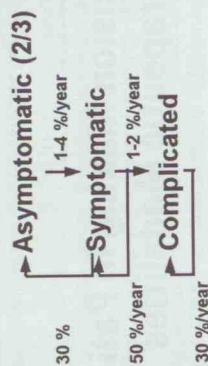


Fig. 1. Natural course and clinical stage of gallstone disease.

Therapeutic choice

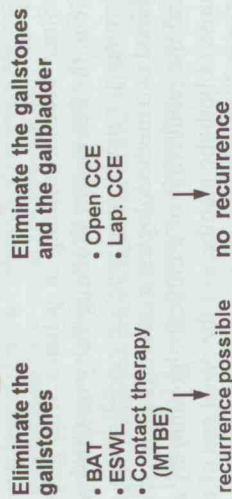


Fig. 2. Therapeutic choice in gallstone disease.

from asymptomatic to symptomatic disease with biliary pain is only 1–4% [7]. 30% of these patients will return to an asymptomatic stage without having further symptoms or complications in the further course of the disease. In contrast, patients having symptoms of gallstone disease have a risk/year of 50% to re-experience upper abdominal biliary pain and show an annual rate to develop biliary complications of 1–2% [7]. Since almost all patients with asymptomatic cholelithiasis develop symptoms before they develop complications there is little evidence and no indication for any prophylactic treatment in the management of asymptomatic gallstones. Exceptions are a calcified gallbladder, which should be removed because of a risk of malignancy that exceeds 25% [8, 9] and, perhaps, gallstones > 3 cm in diameter because of possible higher incidence of gallbladder cancer in these patients [10]. In general, the risk/year of developing a gallbladder carcinoma having an asymptomatic gallstone disease appears to be only 0.01% [11]. In contrast, symptomatic patients should be treated to avoid recurrent biliary pain and complications. Today, many treatments are available. The therapeutic choice is to eliminate the gallstones only with the risk of recurrence or to eliminate both the stones and the gallbladder (fig. 2). This distinction between the two types of treatment is important and will be discussed later.

