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Cholecystectomy for gall stones

A good thing if they cause symptoms

Langenbuch described the first successful cholecystectomy for gall stones in 1882, and it has now become one of the safest and commonest major operations.[1,2] More recently reliable and uninvasive investigations have shown that gall stones are very common but that they cause symptoms infrequently. So who should be advised to undergo cholecystectomy for gall stones and when should the operation be performed?

Gall stones are common in economically advanced countries: they were found in 6·2% of men and 12·2% of women aged 45-69 by cholecystography in Wales[3]; in 12·4% of men and 23·7% of women of all ages in a necropsy study in England[4]; and in 8·2% of male and 9·4% of female Italian civil servants in an ultrasonographic study[5,6]. These studies all included people who had had a cholecystectomy. Two thirds or more of stones in the Italian studies had caused no symptoms, and only a 10th of people with stones in the English study had had a cholecystectomy. In the Italian studies upper abdominal pain was strongly associated with gall stones, but non-specific symptoms such as epigastric burning, bloating, belching, heaviness, nausea, vomiting, and intolerance of fatty food were not. Hence we must conclude that gall stones are common, that most cause no symptoms, and that when they do they cause pain or acute cholecystitis but not non-specific dyspepsia.

How likely are asymptomatic stones to become symptomatic? Previous beliefs that symptoms developed frequently were based on studies of patients who had already had symptoms or whose gall stones had been diagnosed in hospital and who may therefore not have been entirely without symptoms.[7,8] Gracie and Ransohoff more recently reported a study of 123 truly symptomless people found to have gall stones at routine medical examination and showed that the cumulative probability of developing biliary pain over 20 years was about 18%.[9] Ransohoff and his colleagues subsequently examined prophylactic elective cholecystectomy for asymptomatic gall stones using these data, published death rates from cholecystectomy, and life tables and concluded that the operation carried no advantage.[10]

So a conservative approach seems sensible, though prophylactic cholecystectomy is reasonable when gall stones are found incidentally at laparotomy in a fit patient. Elective operation may also be considered for patients at particular risk of severe complications from gall stones, such as those with diabetes mellitus or those being treated with immunosuppressive drugs or long term parenteral nutrition. The occasional patient found to have a porcelain gall bladder should be advised to have cholecystectomy as the condition is strongly associated with gall bladder carcinoma.[11]

Once biliary pain occurs the chances of further trouble are much higher. Lund found that about half of 526 such patients developed severe symptoms or complications of gall stones within five to 20 years.[7] Wenckert and Robertson followed 781 patients who had remained well for one year after gall stones had been diagnosed, and a third developed severe biliary pain and a fifth acute cholecystitis or other serious complications over the next 11 years.[8] The mortality in those with such further complications was 4-5%. Patients who develop biliary colic or acute cholecystitis should therefore be treated by cholecystectomy. Biliary colic cannot always be differentiated easily from acute cholecystitis, but in biliary colic no more than mild right upper quadrant abdominal tenderness occurs, whereas in acute cholecystitis tenderness is more severe with or without a local mass or peritonism and the patients are generally ill with fever and leucocytosis.

Once their pain has been relieved patients with biliary colic should be offered elective cholecystectomy as soon as is feasible. More debate has surrounded the timing of operations in acute cholecystitis, but increasingly agreement has been reached. Previously, acute cholecystitis was treated medically with analgesics, antibiotics, and correction of fluid and electrolyte imbalance. Occasionally emergency surgery was required for complications such as empyema or perforation, but almost all patients recovered and were advised to undergo a late (elective) cholecystectomy about three months later. This approach was based on the low mortality of acute cholecystitis, the wish to avoid operating with inadequate diagnostic information, and the view that operating during the acute phase was hazardous. Essenhigh, however, challenged this view, finding that the mortality in 117 patients operated on within a week of admission to hospital (8 deaths) was much the same as that in 302 patients treated conservatively (13 deaths), though 16% of cases had been misdiagnosed.[12]

Misdiagnosis should now occur in fewer than 5% of patients owing to improvements in ultrasonography and radionuclide imaging.[13,14] Moreover, several case studies and controlled trials have shown that cholecystectomy within a week of admission to hospital carries a mortality of around 0·1-4%

and a morbidity no greater than that for elective cholecystectomy.[15-21] Additional benefits include the prevention of recurrent attacks of acute cholecystitis, which occur in 10-25% of patients, and the need for only one admission to hospital. Furthermore, a 10th of patients do not come back for late elective cholecystectomy and continue at risk of further trouble from their gall stones. Hence early urgent cholecystectomy during the first week has been adopted as the best treatment for acute cholecystitis. Lithotripsy may alter these recommendations in due course,[22] but cholecystectomy looks as though it will remain an important operation well into its second century.

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Medical testing and health insurance

Complex tests may increase the uninsured

A recent report from the Office of Technology Assessment in Washington spells out the problems that increasingly complex and accurate predictive medical tests are creating for those who must depend on medical insurance for their health care.[1] Those in the United States, for instance, who are found to be infected with HIV may have great difficulty finding insurance cover at any price. Finding employment may also be difficult for those infected because employers increasingly provide health insurance for their employees. Similarly, the results of other tests may create great difficulties for some people because they show that they are at greater than average risk of serious disease. These problems are likely to become increasingly relevant in Britain, particularly if the Prime Minister's review of the health service promotes private insurance.

There are several objections to private health insurance, put forward especially by economists, which make it an inefficient option for financing health care. As well as the "problem of the third party payer," which encourages overconsumption when coupled with an incentive by a private provider to overprovide, the problem of "adverse selection" is central. Those who apply for health insurance or membership of a health plan may be able to conceal that they are ill, are likely to become ill, or have a higher than average risk of chronic disease. In consequence health insurance plans that do not discriminate between people who enrol on the basis of price may become unviable as those of higher risk consume more health care and force up premiums for everybody. In response to this insurers have attempted to identify those at higher risk and charge them higher premiums. In the United States this has become commonplace both in health insurance and in setting premiums for membership of health maintenance organisations.

Medical testing may be used to evaluate an applicant for insurance, and diagnostic and predictive tests are likely to be used much more by insurers and employers as they become more available and more accurate. In the United States individual insurance is much less common than group health insurance (predominantly available through employers). Although adverse selection is a particular problem for the individual insurance market, medical testing may become more salient in the group insurance market as containment of health care costs continues, with employers at the forefront of the battle. The Office of Technology Assessment before producing the final report surveyed the use of testing by commercial insurers, Blue Cross and Blue Shield plans (which are non-profit), and health maintenance organisations.[2,3] In the commercial sector about a fifth of individual applicants for insurance were granted only policies that included exclusions or higher premiums or both; about 10% were judged uninsurable and denied coverage. Blue Cross and Blue Shield produced similar results. Federally qualified health maintenance organisations often have to accept applicants at a standard rate or deny membership altogether. The survey included the 50 largest health maintenance organisations in the United States, and they denied membership to about a quarter of individual applicants. Most commercial insurers either screened or planned to screen individual applicants for HIV infection; 11 of the 15 Blue Cross or Blue Shield plans did so; and over half of the health maintenance organisations also screened for HIV. (Some of those that did not screen were prohibited by state law from doing so.)

Medical testing by employers may be linked to evaluation for employment as well as to health insurance. Employers commonly use a general physical examination that includes various medical tests. They may also include genetic testing, drug testing, and tests for HIV.

The overall consequence of the more discriminating insurance that results from such tests may be the need for greater public finance and state action to insure the otherwise uninsurable. Though still at an early stage, complex medical