Editorial

Gastrointestinal surgery in the elderly

One of the most challenging clinical problems for surgeons today is management of elective and emergency surgical conditions in the elderly. In the 1990's more than 40% of Americans will reach the age of 80 years and will live on average for a further eight years.[1] By the year 2,000 more than 50% of all patients will be elderly (i.e over 65 years)[2], of which 16% will be older than 80 years.[3] This will have an impact on the activity of general surgeons.[4,5] Geriatric patients have an increased incidence of gastrointestinal malignancies, gastric ulcers, biliary pathology, diverticular disease, angiodysplasia and abdominal wall hernia.[6] Approximately 136 surgical procedures per 100,000 population are performed for people ages 45 to 64 years, but this increases to 190 procedures per 100,000 in patients aged 65 years and older.[7] Therefore it is obvious that this ageing population will utilize the services of general surgeons at a higher rate than their younger counterparts.

While a general physiological decline occurs in the cardiovascular, pulmonary and immunologic systems with ageing alterations in the anatomical structure and physiological functions of the epithelium of the gastrointestinal organs with increasing age are minimal.[8] By contrast age-related changes in the connective tissue elements may become manifest as in colonic diverticular disease and angiodysplasia.[9] A degree of immunocompromise does occur in elderly patients due to a decline in both cell and humoral mediated immunity.[10] Evaluation and management of digestive problems in these patients may be complicated by pre-existing cardiovascular disease or polypharmacy malnutrition.[11] Indeed diagnosis may be delayed due to blunting of symptoms and signs, due to concomitant medical problems, delayed presentation or cognitive disorders.[12]

Surgery should not be withheld from an elderly patient because of mistaken underestimation of life expectancy. The average 70 year old male in the western world will live to be 81, and his 70 years old wife to be 84.[13] A decision as to whether or not to operate on any patient should hinge on the procedure likely benefits outweighing the possible risks. The mortality rate for surgery in the elderly is higher than for younger patients, especially if the procedure is abdominal[14], and emergency.[15] However, an elderly patient who survives surgery has a similar survival period to his chronological peers who did not have surgery.[16] The major aetiological factors responsible for perioperative mortality in elderly surgical patients are cardiopulmonary, septic and embolic.[17] The elderly are particularly vulnerable to basal atelectasis and hypoxia because of a progressive age-related loss of lung elastic recoil pressure.[18] It has been clearly documented that the risk of deep venous thrombosis is increased with advancing age; and that prophylaxis is necessary in all elderly patients undergoing abdominal surgery.[19]

The pre-operative history, physical examination and use of the American Society of Anaesthesiology (ASA) classification systems will enable high risk patients to be identified. In a series of patients aged over 80 years who underwent surgery, less than 1% of ASA class II patients died, while 25% of class IV patients died perioperatively.[20] Similarly, active patients, defined as those who"normally left their homes as a result of their own efforts at least twice weekly" have a dramatically decreased mortality rate perioperatively relative to inactive elderly patients.[21] The surgeon should confirm with both patient and family the benefits and risks of the procedure so that the patient and family may reach an informed decision. This task is usually more time consuming in the aged patient. Operations should be scheduled to minimize waiting time, anxiety and fasting. An active geriatric service, for both management advice and postoperative convalescent care and placement makes for optimal care of the elderly surgical patient.

Oesophageal reflux stricture is a serious complication of long standing gastro-oesophageal reflux and so usually occurs in elderly patients. Resection is only necessary in approximately 5% of such patients, and this may entail a colon bypass graft.[22] Elderly patients with reflux strictures may usually be managed by continued endoscopic dilatation and intensive medical therapy. Oesophageal cancer carriers a high mortality risk especially when the patients are elderly, if the critera of selection for surgery are not strict.[23] As the majority of patients requiring oesophagectomy for malignancy are old, and thoracotomy may be required, prediction of postoperative pulmonary complications to identify high risk patients is essential.[24] Transhiatal oesophagectomy, if feasible, carries physiological advantages in the elderly, often frail patients with oesophageal malignancy.[25]

Over the past two decades, the incidence of peptic ulcer disease requiring surgery and the mortality from such ulcers have decreased in all age groups, apart from the elderly.[26] An increasing prevalence of gastric ulcers in the geriatric population is well documented.[27] Many older patients are entirely asymptomatic prior to developing an ulcer-related complication that may prove fatal.[28] Indeed the most frequent cause of mortality in our surgical practice from benign disease is massive upper gastrointestinal bleeding.[29] Ingestion of nonsteroidal anti-inflammatory drugs is responsible for over 25% of all upper gastrointestinal bleeding in elderly patients with a mortality risk of 10%.[30] In elderly patients presenting for surgery with gastric malignancy, there is a higher than average incidence of proximal cancers and twice as many patients with advanced lesions. The results of an analysis of 406 patients aged over 70 years with gastric malignancy treated surgically justifies a practice of gastric resection if no major contraindication exists.[31] The profile of the prospective candidates for biliary surgery has altered over the last two decades so that now an increasing number of elderly patients are presenting.[32] These patients carry a higher risk of adverse outcome, possibly due to the large number of emergency presentations and choledochal calculi.[33] Elderly patients with acute gallbladder disease may present with deceptively benign symptomatology. The increasing prevelance of acalculus cholecystitis in elderly patients, especially male (6% to 67% of all cases, relative to 3% in younger patients), means that increasing numbers will have empyema or biliary peritonitis at the time of surgery.[34] Early elective surgery for symptomatic gallstone disease is the ideal in the fit elderly patient, as elective surgery carries a mortality of 1% relative to 11% in emergency cases.[35] Laparoscopic cholecystectomy should offer advantages in these patients, from the viewpoint of decreasing the morbidity of wound access, especially pulmonary and possibly thrombotic.

Fortner and Lincer evaluated the possible effects of ageing on recovery from hepatic resection in 453 consecutive producers over an 18 year period and concluded that a major

liver resection may be performed in the elderly with a low, but somewhat increased mortality risk.[36] The perioperative mortality rate increased incrementally with age. The peak incidence of pancreatic carcinoma occurs in the sixth and seventh decades. Currently pancreatic surgeons advocate that a major pancreatic resection should only be performed with a mortality risk of under 5%. The results of two recent reports [37,38] support the contention that age alone should not be a limiting factor for a potentially curative pancreatic resection.

With advancing age the incidence of colonic diverticular disease rises progressively, from 5% in the fifth decade to 50% in the ninth decade.[39] While a high fibre diet prevents many of the complications of diverticulosis, those who do present as emergencies need expert resuscitation and resection by experienced surgeons if a high mortality is to be avoided.[40] Vascular ectasia are most likely a degenerative disorder associated with ageing, found throughout the gastrointestinal tract, but most especially in the right colon. Peroperative colonoscopy is often of value in visualising the bleeding points, which may be multiple.[41] The presentation of inflammatory bowel disease in the elderly is not substantially different from younger patients, a second peak in incidence occurring in the sixth decade.[42,43]

Age alone is no longer considered to be a major prognostic factor in determining perioperative mortality risk[15] after elective resection of a colorectal tumour. Abdominoperineal resection has been regarded as the principal radical treatment for cancers of the mid and lower rectum. It has now been demonstrated that a sphincter-saving resection affects neither survival or local recurrence rates, provided that a clear distal resection margin of at least two cm is achieved.[44] A sphincter saving resection has similar postoperative and oncological results relative to abdominoperineal resection[45] with the advantage of obviating a permanent colostomy, which may be difficult to manage and poorly accepted in elderly patients. In aged patients, even with very low tumours, good oncological and functional results may be obtained following coloanal or colorectal reconnection.[46] Perioperative manometric evaluation of the anal sphincter mechanism is of great value to offset a potential poor functional result and predict postoperative continence.[47] Periopertive mortality in patients with colorectal malignancy is significantly increased in the elderly patient presenting as an emergency.[48,49]

Elderly patients are often not referred early for consideration for elective surgery, because they are viewed as too high a risk. Linn et al[15] in a collective review of 108 published manuscripts covering over 50,000 elderly patients, established that in this age group the mortality rate for emergency procedures averaged three times greater than rates for similar elective procedures. When an elderly patient presents with an acute abdomen, the presentation is frequently delayed. They often have concomitant underlying disease and occasionally a desire on both the patients and the relatives part to avoid perceived unnecessary tests and surgery. The diagnosis of the acute problem may be further complicated by a relative lack of physical findings due to the patient's lack of pain perception. Most commonly surgical problems in aged patients tend to be more life-threatening than in younger patients, and therefore rapid diagnosis is mandatory to offsetting perioperative complications.

Overall 5% to 10% of all cases of acute appendicitis occur in the elderly.[50] Over 50% of deaths associated with appendicitis occur in the elderly age group.[45] The mortality rate in patients older than 80 years is 23 %.[52] This higher mortality from appendicitis in geriatric patients may be attributed to delay in seeking medial advice, occasional atypical presentation[48] concomitant disorders, and a faster progression of the disease to perforation and appendicitis.[53] A high index of suspicion and early surgical intervention remain the optimal methods of reducing perioperative mortality and morbidity in all elderly patients presenting with an acute abdomen.

Elderly patients represent a unique patient subgroup with several distinctive features. Age alone should not necessarily be a major predictive factor in determining perioperative mortality. It is well known that chronological and physiological age may be disparate. We must strive to find methods to better define physiologic as compared to chronologic age. Patient selection for operative intervention is at present based upon clinical judgement and available data. The increasingly older age of patients who are referred for gastrointestinal surgery is a fact of modern surgery. Operating on elderly patients does not represent misguided clinical enthusiasm.[54] It is an appropriate response to the increasingly elderly percentage of our population. A surgeon's aim should be to make a better quality of life for patients, regardless of the extent of life that may be left for these patients.

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