Surgical Problems Among the Elderly in Malaysia

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According to the 1991 population census, just under a million Malaysians are elderly. By universal convention the elderly are people who are above the age of 65 years. They comprise 3.7% of our population. To make a comparison, in the United States the elderly comprise 13% of the population and are expected to increase to 16% by the year 2025. They are, in that year, expected to consume 25% of the US medical budget. It was in 1900 when the elderly in the US comprised 4% of the pupulation. Our Malaysian population is therefore comparatively young but with better nutrition and health the proportion of the population who are elderly in Malaysia will invariably rise.

Not only is that so, the elderly in Malaysia will also have more medical needs than the general population. In the Taiping Hospital in 1996 the elderly accounted for 11.8% of surgical outpatients, 10.1% of surgical admissions and 9.3% of patients who underwent an operation. In my own practice over the last 4 years the elderly accounted for 13.3% of all patients and 9.8% of patients who underwent operations.

The Problem of Ageing

Although the age of 65 years is used to defined the elderly it is increasingly recognised that it is not the chronological age that defines the peri-operative risks in the surgical evaluation of a patient. The considerations more pertinent to the surgeon consists rather of the physiological changes aging brings. No individual is spared the physiological deterioration that occurs with the passage of time but it is obvious some people seem to and in fact age slower than others.

Ageing decreases an elderly patient's response to surgical stress and has the potential to cause life threatening complications in the peri-operative period. It is therefore imperative surgeons understand the changes in physiology that occur in the various body systems that accompany ageing and to recognise them in their patients.

Nearly 50% of all post-operative deaths occurring in the elderly are attributed to cardiovascular disease[1,2]. Atherosclerotic disease and cardiac dysrhythmias are common in the elderly although these can be viewed as pathological conditions with avoidable causes rather than part of the normal ageing process. Ageing also produces stiffening and decreased distensibility of systemic arteries and the cardiac wall. This contributes to a higher systolic blood pressure in the elderly despite a normal mean arterial pressure which could impair coronary perfusion to the myocardium under stress conditions, as coronary circulation occurs principally during diastole. The ageing heart is also less responsive to cathecholamine mediated augmentation and more dependent on ventricular dilatation (pre-load) to increase cardiac output[3,4]. In essence the elderly increase cardiac output mainly by increasing stroke volume in comparison to younger individuals who increase cardiac output mainly by increasing heart rate. The elderly therefore tolerate volume depletion less well than young patients[5].

Post-operative deep vein thrombosis is another vascular problem that increases in incidence with age[6]. In hip arthroplasties the rate of venous thromboembolism can reach as high as 50%[7].

Altered pulmonary physiology with ageing gives rise to a poorer ability of the lungs in the elderly to clear infection. In addition to decreases in ventilation and loss of lung parenchyma geriatric patients have poorer immunologic functions[8]. These changes increase the risks of atelectasis and pneumonia in the post-operative period.

Renal function has been calculated to diminish by approximately 1ml/min of glomerular filtration rate a year over the age of 40 years[9]. Drugs eliminated by the kidneys may need dose modification in the elderly.

The gastrointestianl tract suffers from decreased motility, secretion and absorptive capacity with ageing[10,11]. However despite a decrease in gastric acid secretion the incidence of duodenal ulcers increase with age[12] and are an important consideration in the post-operative period. Decreased colon motility gives rise to more frequent constipation and faecal impaction in the elderly. Although changes also occur in the liver, hepatic reserves are so great there is minimal ageing related liver problems. The exorine pancreas is also not measurably affected by age.

The endocrine pancreas, however, produces a higher level of serum insulin with age. But the sensitivity to insulin diminishes resulting in decreased glucose tolerence[13,14]. The thyroid gland shows increased fibrosis, decreased follicle size and atrophy with age. The prevalence of thyroid nodules increases. Up to 4% of the elderly population, it has been estimated, are hypothyroid[15]. The symptoms may not be overt but hypothyroidism can adversely affect the outcome of surgery and ought to be recognised. Adrenal function also changes with age. A diminished response to salt restriction occurs due to alterations in the aldosterone-renin system[16].

It would be very helpful to the surgeon assessing the operative risks of an elderly patient if a patient's 'physiological age' was as obvious as his chronological one. But the ageing process in one person's different body systems may occur at different rates and it is very obvious that they occur differently from one individual to another. It also appears that in general 65-year-olds are physiologically fitter now than they were in the past. Humans are not just living longer they are staying healthy longer and as more people live longer more will live to experience surgical problems. Some of these conditions will be similar to diseases younger patients have, such as trauma or appendicitis. Some will be unique to being elderly, such as prostate hyperplasia or osteoporotic fractures. Many like malignancies are diseases that can occur in younger patients but increase in frequency in the elderly.

Common Surgical Problems in the Elderly in Malaysia

The spectrum of surgical problems in the elderly seen in practice will be different in the different types of medical institutions in the country. A tertiary level hospital will see more rare conditions and specialised complicated surgery. Some surgeons have special interests, and hence see a disproportionately large number of certain conditions. On the other hand a general surgeon with little special interest will have fewer of the cases mentioned above. It would be difficult to present a complete picture of the spectrum of common surgical problems in the elderly in Malaysia. Nevertheless, the experience of a general surgeon probably reflects fairly well the common surgical problems of the population at large. The only data on common surgical problems in the elderly in Malaysia that I am able to present is from my own practice. The data is for a period of 4 years. The experience presented here can be no more than anecdotal and generalisations would not be justified. Nevertheless it presents some interesting features for discussion.

As mentioned, the elderly comprised 9.8% of all those who underwent surgical procedures, excluding diagnostic endoscopic examinations. From a total of 182 operations performed on elderly patients, the five most frequent surgical operations performed in the elderly were, excisions of skin and subcutaneous lesions (32), hernia repairs (22), cholecystectomies (18), open prostatectomies (11) and appendicectomies (7).

Seventy-three per cent of prostatectomies, 20% of choleystectomies and 15.5% of hernia repairs were performed in the elderly. These were the operations in which the elderly were over-represented. On the other hand, the elderly were under-represented in thyroid operations (8%), excisions of skin and subcutaneous lesions (6.8%) and appendicectomies (2.7%).

It is not surprising that most prostate operations are performed in the elderly. Prostate disease is a disease of ageing. Similarly, besides congenital hernias which appear in the first few decades of life hernias in men tend to increase in incidence with age.

It is also generally true that gallbladder surgery is more

common in the elderly. It is the most commonly performed abdominal operation in the elderly[17]. Not only does the incidence of gallstones increase in the elderly, the chance of gallstones causing disease is higher in this age group. Older patients have a higher risk of empyematous cholecystitis[18], gallbladder perforations[19] and septic complications of cholecystitis[20]. They also have a higher incidence of choledocholithiasis and its complications. It is therefore prudent to operate on the elderly when their gallstones cause early symptoms and not delay treatment till the operation needs to be done in an emergency situation. Morrow *et al* have reported that conservative nonoperative therapy failed in patients older than 60 with acute cholecystitis necessitating emergency operations with a higher mobidity and mortality rate[21]. The problem of asymptomatic gallstones in the elderly is a more controversial matter. It is difficult to ascertain the risk such stones may become symptomatic for any particular individual. Ultimately the decision must be tailored to the individual.

With regard to diagnostic endoscopic procedures the elderly made up 156 (28%) out of 564 cases. These consists of 100 (23.2%) cases of oesophago-gastro-duodenoscopy, 43 (44.8%) colonoscopies, and 13 (33.3%) cystoscocpies. These figures merely indicate a higher index of suspicion for pathology in the elderly. Cancers being the type of pathology causing the most concern. As these procedures are safe and produce little morbidity their role in the health care of the elderly is not in doubt. Health financiers, though, may be interested in how such investigations are under-utilised or over-used.

Cancer is an important disease among the elderly. Table I show the list of elderly patients in whom a cancer was diagnosed at or after presentation in my clinic. Table II in comparison is the list of patients under 65 years with cancer. The elderly account for 43% of all cancer patients. This is a small series and it must again be emphasised that the findings cannot be generalised. Cancers that tend to present to physicians, or nasopharyngeal carcinomas that present to otoloryngologists will be under represented. Nevertheless in this series the elderly form the majority in almost all the common cancers. It makes the exceptions, namely the breast, nasopharynx and thyroid

Table I
Number of elderly patients with cancers in elderly

Site of primary	No. of men	No. of women	Total
Colon and rectum	13	7	20
Lung	7	3	10
Skin	6	3	9
Pancreas	5	1	6
Stomach	4	2	6
Breast	–	5	5
Bladder	5	–	5
Oesophagus	3	1	4
Liver	4	–	4
Mouth	2	1	3
Prostate	2	–	2
Penis	2	–	2
Other (chordoma)	1	–	–
Total	54	23	76

Table II
Number of non-elderly patients with cancer

Site of primary	No. of men	No. of women	Total
Breast	–	40	40
Colon and rectum	11	6	17
Skin	7	2	9
Nasopharynx	8	–	8
Lung	4	1	5
Thyroid	1	3	4
Mouth	1	2	3
Oesophagus	2	1	3
Liver	1	1	2
Pancreas	–	2	2
Stomach	–	1	1
Phyrynx	–	1	1
Larynx	1	–	1
Bladder	1	–	1
Prostate	1	–	1
Bone	1	–	1
Soft tissue	1	–	1
Total	40	60	100

a point of interest. It is always humanly more tragic when cancers affect the young. In no cancer does the younger patients outnumber the elderly more than in breast cancer, in which there are 8 times as many women under 65 years old compared to the elderly. This is not unexpected. Although Western countries have an age-related increase in incidence of breast cancer making it the most important cancer in elderly woman[22], Asian countries record a decline in breast cancer incidence after menopause[23].

It is in surgical oncology, perhaps, that the peri-operative risks of ageing are most relevant. Cancer subtracts more from the physiological status of a patient already weakened by ageing. Furthermore, since the incidence of some cancers increase with age, the patient we often have is much older than 65 years.

The Octogenarians – The Frail Elderly

Although many of the elderly are physiologically fit enough to undergo major surgery no differently from younger adults the very elderly, above 80 years old, who might be called the 'nursing home population' almost certainly have significant ageing related factors that need to be considered seriously. What are their common surgical problems? In the Taiping Hospital there were 35 patients above 80 years old who underwent surgery in 1996. There were 24 males and 11 females.

In my 4 year experience in private practice I have operated on 37 octogenarian patients, 18 women and 19 men. Eight of these operations were excisions of skin lesions such as papillomas, but include rarities like a malignant eccrine tumour. Seven patients had laparotomies. These include colon resections, bowel anastomoses and closure of peptic ulcer perforations. Cancer was usually the underlying pathology. Five patients had operations for abscesses, necrotic wounds and carbuncles. Five patients had hernia repairs, a cholecystectomy was performed for 3 and appendicectomy performed for 2 patients. The remaining were miscellaneous cases. These were selected patients because not all patients who needed an operation were operated on, and there was no post-operative mortality except for a patient with severe pressure sores who died soon after desloughing.

This data does not reflect the common surgical problems in this age group. The operations performed were often done in an urgent or emergency situation. There is not much chance to avoid surgery when a patient presents with bowel obstruction or acute appendicitis. However, there is a greater reluctance on both the part of the surgeon and the patient and his relatives to opt for surgery in other situations, such as a patient fairly well with a non-obstructing oesophageal or colonic tumour. Such patients often prefer to accept their disease in resignation thinking they have reached a ripe age to die. Without good evidence that their life expectancy and symptoms would benefit from surgery, persuasion cannot be applied forcefully.

In this regard I think we need to consider whether there is a role for some surgeons to specialise in geriatric surgery. It would also involve anaesthetists and intensive care physicians with a similar special interest. In fact as orthopaedic and cardiothoracic surgeons and even transplant surgeons require such anaesthetic expertise, geriatric surgery would principally be based on anaesthesia. There are hospitals in Malaysia with a large enough patient load to make this practical. A specialised team will not only be able to deal with the perioperative risks of ageing better it will gain experience in order to be able to know how to tailor how extensive an operation should be in each patient. It can meet the need to weigh the life expectancy of the patient against the expected gain from surgery. In other words, a specialised team would learn not only how to operate but when to do so. As such, these elderly patients can then be both better advised and persuaded towards their optimum therapy. We ought to have a vision for geriatirc surgery in mind for the future of surgery in Malaysia.

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