



## Current Perspective of Geriatric Surgical Diseases

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### Introduction

In the modern world, the proportion of older population is increasing day by day due to better health care systems, improved life standards, advances in medicines and reduction in mortality rate. The physiological changes which occur as a result of aging are very obvious which led to development of a special branch-Geriatrics. The term geriatrics deals with the health of elderly people. Overall population  $\geq 60$  years of age is considered as geriatric population.

### Physiological Changes with Aging

Increasing age will have its affect on all systems. Decreased cardiac output, systemic hypertension, diffuse atherosclerotic changes, conduction abnormalities are the major cardiovascular changes noted with increasing age. Changes like decrease in chest wall compliance and lung elasticity, decreased FVC & FEV1 and increase in risk of aspiration are seen in respiratory system. Renal physiological changes include decrease in the function of nephrons; decrease in renal blood flow, creatinine clearance is reduced risk of urinary tract infection increases with increase in age. Incidence of gall stone formation increases with age. Neurologic changes like age related cerebral atrophy, diminution of cognition and dementia increases with age. There is reduced insulin action, increase in adipose tissue, decrease in lean body mass and bone mineral density. These changes lead to decreased physiological reserves which are used by the body in times of stressful situation.

As one grows older, comorbidities start developing and increase with age. Hypertension, diabetes mellitus type II and coronary artery diseases are the most common comorbidities associated with increasing age. The incidence of multimorbidity increases as age increases and these are to be optimized before undertaking for surgery.

### Common Surgical Conditions

Common surgical diseases which need surgery in the elderly population are cholelithiasis, hernias - recurrent, incisional, inguinal and various cancers. Many of these conditions present lately in elderly people and are associated with increased complication risks. For example, the incidence of cholelithiasis is known to increase as age progresses. Studies showed that incidence of cholelithiasis was about 5% for women <40 years of age, the incidence rises to 30% for women >80 years of age. Because in older people, gall bladder motility is decreased as do cholesterol metabolism which are implicated in gall stones formation.

### Our Concern

In general, during stressful conditions like surgeries, the physiological reserves are in use and maintain homeostasis. In elderly population, these reserves are fewer to meet those stressful challenges. And this was the reason behind increased morbidity and mortality in elderly population who needs medical intervention to alleviate their disease. This necessitates special care and treatment mainly when they undergo surgery to overcome the disease condition.

Presence of the comorbidities is a major concern to surgeon as these comorbidities need to get controlled before taking for surgical intervention so as to have favourable post-operative outcomes. The nutritional status of elder patients is of utmost concern for surgeons as it is one of the major factors which determine the postoperative recovery. Generally, nutrition in elderly may be unsatisfactory due to poor dentition, decreased absorption, gastroesophageal reflux etc. Atypical and delayed presentations in elderly patients may lead to overlook the severity of the disease condition and may mislead in making a proper decision thereby deteriorating the condition and be a reason for increased morbidity and mortality as the window period for intervention is less.

### Steps to Follow

To reduce high morbidity and mortality in elder patients with decreased reserves, a comprehensive

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approach has to be followed which includes preoperative care, intraoperative care and post-operative care.

Preoperative care includes proper history eliciting, identification and optimization of comorbidities, counseling the patient, evaluation of build and nutritional status of patients. Intraoperative care includes vigilant monitoring, use of low dose sedatives, preference of neuraxial techniques with good analgesia over general anesthesia, invasive arterial blood pressure monitoring to detect hypotension early, central venous catheterization, preventing fluid overload, prevention of hypothermia, use of warm fluids, forced warm air devices. Postoperative care includes goal directed fluid supplementation, rigorous monitoring of blood pressure, urine output, avoiding bedsores, deep vein thrombosis prophylaxis and low threshold for any unfavorable outcomes.

In the past, surgeons were hesitant to operate on elderly patients because of high morbidity and mortality. Current trend is to identify

the disease condition and treat it at the first site. To operate early on detection of disease is preferred so as to avoid complications associated with the disease and also the surgery through a comprehensive approach. Common diseases like gall stones and hernias are to be treated electively when presented so as to reduce the morbidity when compared with emergency surgeries. It is known that performing surgery promptly would be of critical importance in geriatric patients for asymptomatic gallstones as presentation is delayed and is associated with high complications later if not treated. Like-wise for hernias, studies in the past have shown that if elderly patients were not offered elective surgery, due to a comorbid condition or older age, they have higher morbidity and mortality rates when they undergo emergency surgery in obstructed hernias. Now a days the dictum is to consider operation when and where it is indicated for diseases so as to alleviate the symptoms and have good outcomes and to improve quality of life of the elderly patients.