

Assessing Frailty in elderly undergoing spine surgery

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There has been a significant increase in elderly population undergoing spine surgery. This is likely because of improved anesthetic and surgical techniques. Recent literature suggests spine surgery even in older population is safe. With an increase in life expectancy, awareness of recent advances and desire to improve quality of life, many elderly patients opt for surgery. Surgeons are not hesitant to offer surgery in the elderly in view of improvements in the perioperative care. Despite advances in medical care, and being medically "fit", a small subset of patients suffer from adverse postoperative events. There is a lacuna to identify these high risk individuals and predict postoperative adverse outcome. Older age and pre-existing comorbidities are known predictor of postoperative adverse outcome. However, these are not accurate. Recently Frailty assessment has emerged as independent predictor in various surgical procedures of postoperative morbidity, length of ICU stay, length of institutional stay and mortality [1].

In spine surgery we are often faced with clinical dilemma in terms of offering spine surgery in few scenarios like in elderly patients with degenerative pathology severely hampering daily activities and quality of life or in elderly patients with tuberculous spondylodiscitis where chemotherapy is the primary line of management, but presenting with neurological involvement and/or instability warranting surgery etc. In such situations many questions arise like whether to operate or not and let

patient live with disability? If we operate then what is the risk and is there any method of predicting it? Therefore careful assessment of risk –benefit ratio in terms of morbidity/mortality post-surgery should be adequately done for preoperative counselling and predicting outcome. Frailty scoring can be useful in terms of quantifying preoperative risk factors and identify potential modifiable risk factors in such settings. Patel et al [2] concluded that modified frailty index is helpful in predicting mortality in patients with fracture neck of femur. Frailty refers to a condition or syndrome characterized by multisystem decrease in reserve capacity. It encompasses complex issue of disability, comorbidity, cachexia and sarcopenia. Frailty has proven to be associated with mortality and morbidity in short term and long term basis. The prevalence of frailty in patients of all ages presenting for surgical procedures is quoted between 4.1% and 50.3%. Frailty scoring has been successfully used in gastrosurgery, hepatic surgery, cardiovascular surgery, neck of femur fracture surgery etc. Its use in spine surgery is not validated [1,3].

The ideal tool for measuring frailty should serve two purposes: quantify risk and point out modifiable risk factors. The measurement of frailty has been done with various tools like grip strength, gait speed, Edmonton frail scale, comprehensive assessment of frailty score etc. Modified frailty index developed from Canadian study of health and aging has been successfully used in orthopedic setting. Modified frailty index

[2] consists of 19 clinical deficits based on 70 potential deficits described in Canadian study of health and aging. It includes parameters like cerebrovascular events, Cardiac diseases, congestive heart failure, psychosis, depression, cognition, diabetes, syncope, recurrent falls, ambulation, seizures, malignancy, Parkinson's disease, urinary incontinence, renal disease, respiratory disease, decubitus ulcers and myocardial infarction. This is fairly detailed information about most important body systems, however it may be too detailed for spine surgery patients. However similar but more concise scoring system is required to identify high risk individuals in spine surgery.

There is variable amount of physiological capacity in elderly presenting for spine surgery. Therefore predictive models like frailty scoring appear to be useful in predicting morbidity and mortality. Such scoring can potentially help in better preoperative counselling, aggressive physiotherapy, more frequent visits by primary care physician, better optimization of patient prior surgery and affect economics in treatment.

References

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