

Head Injury in the Elderly: Is Our Health Care System Ready for the Fall(s)?

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This long cold Canadian winter of our discontent has brought attention to a growing problem for the Canadian health care system: people, especially the elderly, slipping and falling their way into emergency rooms, trauma centres, and neurosurgery wards. Hopefully by the time you read this the snow will have long melted away into spring ... unfortunately the problem of traumatic brain injury (TBI) in the elderly will not. An article in this issue of the *Canadian Journal of Neurological Sciences* entitled "Trends in Hospitalization Associated with TBI in an Urban Level 1 Trauma Centre" clearly draws attention to this¹. The authors retrospectively collected data on 5,642 individuals who had been admitted to the Traumatic Brain Injury Program of the McGill University Health Centre – Montreal General Hospital (MUHC-MGH) from 2000 to 2011. There are a number of interesting findings in the article but perhaps the most important is that regression analysis showed a significant upward trend in the yearly number of TBI cases, (as well as an upward trending by year in the proportion of TBI cases), for patients aged 70 years or more. The trend was significant with the odds of being aged 70 or more and having a TBI increasing by about 9% each year. The authors also looked at the etiologies associated with TBI at their trauma centre. They found an upward trend in the proportion of falls from year to year, with about three times as many falls in 2011 compared to 2000. As well, regression analysis showed that length of hospital stay was significantly longer for older patients. There was also a significant association between mortality rate and trauma mechanism: interestingly mortality rate was highest for patients with falls (13.2%) - greater than for motor vehicle accidents (10.2%), work accidents (6.6%) and assaults (6.0%).

The results of this article seem to fit reasonably well with a typical week of "on-call" for a neurosurgeon: now and then seeing a work related TBI patient on a weekday (as shown in the study), seeing one or more young male TBI patients on the weekend (sometimes due to a motor vehicle accident, sometimes due to an assault, usually in the summer ... as shown in the study) and seeing a fairly steady influx of elderly TBI patients who have fallen or otherwise sustained a blow to head prior to assessment in the emergency room (as shown in the study). Moreover, it is not unusual for these elderly patients to require admission for observation, or in some cases for surgical evacuation of a chronic (or subacute or acute) subdural hematoma. Often elderly patients can be a challenge to rehabilitate and prepare for discharge, resulting in prolonged hospital stays, as shown in the study. It is not unusual for the TBI to serve as means of bringing to attention the multiple medical problems that an elderly patient may have, further prolonging the stay. The appropriate disposition of elderly patients may prove a challenge as family members realize that their loved one may no

longer be capable of living at home. Hospital wards get backed up, emergency rooms get backed up, operations get cancelled, and so everyone's nerves get frayed (and so it goes²).

It is no secret that health care systems, including that of Canada, are subject to growing logistical and financial strain³. The number of elderly Canadians as a proportion of society is increasing⁴ and, as the "baby boom" generation ages, the proportion of elderly people will only increase as it is in other countries⁵. Many of these elderly are fit and determined to remain active (my mother for instance). More power to them! But as this article and others⁶⁻⁸ have shown, the elderly are more inclined to fall. These falls will increase the financial burden on our health care system. There are going to be more elderly patients with chronic subdurals, fractured hips, pneumonias and fractured ribs.

How can our health care system deal with the challenges of an aging population? Suggestions have been made but answers remain elusive^{9,10}. Awareness of the problem, through articles such as the one published here, is a start. Indeed, the seriousness of concussion in sport was somewhat ignored until research and journal publications helped to draw attention to the problem, with some of the important work being done here in Canada¹¹⁻¹⁶. Now concussion is a mainstream topic with frequent newspaper articles and television reporting. Sporting agencies and governments are more aware of the issues, and guidelines and recommendations have been made to help deal with the challenge¹⁷. Perhaps the same will occur for the challenge of TBI in the elderly. And so it's good to end with a hopeful thought ... here's looking forward to a long warm TBI-free Canadian summer (an oxymoron?) before the fall (I mean autumn).

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