Surgical delusions

Over the last decade improvements in the anaesthetic, medical and surgical management of patients undergoing coronary artery bypass grafting (CABG), along with refinements in cardiopulmonary bypass, have resulted in better clinical outcomes. Nevertheless, cerebral injury remains a particularly important limitation for the patient, the physician and – increasingly – the lay press.[1] Furthermore, as a progressively older and sicker population with more co-morbidity, who are more susceptible to brain injury, undergo cardiac surgery, the challenge of minimising cerebral injury grows.

Traditionally, cerebral injury has been broadly classified in decreasing categories of severity as stroke, delirium (encephalopathy) and cognitive dysfunction.[2] While these patterns of injury share certain common predisposing factors, they also constitute distinct clinical entities as regards pathophysiology, incidence and clinical consequences. Stroke is relatively uncommon, occurring in around 3% of CABG patients but has a major adverse effect on post-operative mortality and morbidity.[2] On the other hand, cognitive dysfunction is detectable in most patients early after operation with cardiopulmonary bypass[3] and in at least some whose operation is performed without cardiopulmonary bypass ('off-pump').[4] Importantly, although cognitive dysfunction has no immediate overt adverse impact on clinical outcome it does correlate with subsequent impairment of quality of life measures.[5]

Delusional memories

In the current issue of the journal, Pierce and colleagues, in a retrospective survey and case note review, examine the less well documented occurrence of delusional memories following cardiac surgery and prolonged intensive care (pages 462–6). Of a potential cohort of 423 patients, 251 were sent questionnaires (the remainder had died, were uncontactable or the general practitioner refused assent), of whom 161 (64%) replied. Of this cohort a surprisingly high percentage of patients (48%) reported delusional memories; the remainder reported factual recall of events or had no memory at all of their ICU stay (27%). Those patients with delusional memories were younger, had a longer ICU stay (seven days *vs.* five days), and were more likely to have received a glucose or midazolam infusion or to have experienced sepsis.

Delusional memories are part of a constellation of symptoms which constitute the syndrome of post-traumatic stress disorder (PTSD) following an acute injury or trauma. PTSD includes intrusive re-experience of the harmful experience, avoidance of provocative stimuli and a state of anxiety and heightened arousal. The potential for the development of PTSD after ICU treatment is well recognised,[6] and patients who show evidence of PTSD after cardiac surgery have been found to have impairments in psychosocial function and life satisfaction.[7] A recent prospective cohort study has shown a link between the development of PTSD after cardiac surgery and the number of traumatic memories from the post-operative ICU.[8] In addition, exposure to stress on ICU was shown to have a negative effect on health resource outcomes after cardiac surgery.[8] While the development of PTSD symptoms may be related to the recall of delusional memories, somewhat counter-intuitively the memory of real events (even if unpleasant) has also been reported to protect against the development of psychological symptoms.[9] Unfortunately, the study by Pierce and colleagues did not go on to assess whether those patients with delusional memories showed symptoms of psychosocial dysfunction.

In the current study, the authors suggest a link between sedation with midazolam and the development of delusional memories and hallucinations. This is consistent with a previous report of a link between the duration of sedation and/or neuromuscular blockade in ICU patients with lung injury and the subsequent development of depression and PTSD.[10] However, this was a retrospective study that did not take into account pre-surgery psychological status and it is possible that the more anxious patients required more sedation. A link has also been suggested between the use of exogenous catecholamine infusions on ICU and the development of PTSD. Again, this could have been a sicker cohort of patients, emphasising the difficulty in studying the multifactoral aetiology of this condition in ICU patients.[8]

Early identification

Whatever the aetiology, it is important that those patients at risk of developing psychosocial problems are identified early and that appropriate interventions are introduced before problems become chronic. Surgical follow-up clinics often take place some months after discharge and tend to focus more on physical recovery. The growth and development of

ICU outreach services, often nurse-led, may be a more appropriate way to detect at-risk patients early.

Conflict of interest

None declared.

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