

EDITORIAL FOCUS ON BURNS

Management of burns in a major trauma centre

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'Was it a vision, or a waking dream?'

—John Keats, Ode to a Nightingale, May 1819

A person who sustains severe burns in Victoria is transferred to the state-wide burns service according to protocols of the state-wide trauma system.¹

The patient is received in the emergency department (ED), which has facilities and staff to assess and initiate management of patient and injury(s) in a timely manner. Additional to the general facilities and staff available in a major trauma centre, there is capacity to weigh and shower the patient in an enclosed temperature-controlled room, where initial resuscitation and monitoring is instituted along with airway, pain management and temperature maintenance measures. In particular, adequate fluid resuscitation is instituted in the early phases post-injury and closely monitored and adjusted as long as the patient remains in the ED and is then handed over to subsequent treating staff.² Even in the absence of obvious clinical instability, the serious nature of the injury, its likely trajectory and the importance of early proactive management are recognised by all involved. Staff experienced in burn assessment, medical and nursing, attend to formulate an immediate management plan and institute basic wound care pending surgical treatment. If necessary, escharotomies are performed in the ED.

A decision about early excisional surgery is made in consultation with intensivist anaesthetic and surgical staff experienced in burn care. This is based on assessment of risk and benefit, underpinned by knowledge of burn wound evolution and accompanying pathophysiological derangement.³ The patient spends the minimum time necessary in the ED before transfer direct to the operating theatre or via the intensive care unit (ICU) if surgery is to be delayed. Transfer from the ED occurs to a temperature-controlled ICU room staffed by experienced burns ICU nurses

and medical staff. Guided by a standard protocol, resuscitation proceeds based on defined clinical parameters with regular reassessment.

'Early' (on direct transfer from the ED or first case of the day for overnight presentations), eschar excision and burn wound temporising with allograft or synthetic skin substitute is provided for patients in the active resuscitation phase who are otherwise stable and with no other major trauma. Surgery is performed by adequate numbers of appropriately experienced surgeons, anaesthetists and theatre staff in an operating theatre configured

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for treatment of major burns cases. The patient is returned for ongoing resuscitation to the ICU postoperatively.

After the initial resuscitation phase, further surgery proceeds in a staged fashion, with definitive skin closure delayed until the wound and patient have stabilised. This may be promoted by the use of synthetic skin substitutes or skin allograft. The delayed wound closure principle applies in burn surgery for severe burns as in other complex wounds, and extensive autologous grafting in a patient who requires high-dose vasopressors is avoided. Multiple wound debridement and grafting or flap procedures may extend over weeks and months.

At all stages of management, care is provided by specialist medical, nursing and allied health staff, including acute pain, infectious diseases, peri-operative and psychosocial specialists. Specific staff are recruited with expectations that they will provide specialist expert burns care as all or part of their scope of practice, and rostered accordingly. Burns education and training are provided and required, and staff are supported in the pursuit of higher degrees. Experienced staff are consistently available for clinical care, teaching and mentoring. Access to ICU, operating theatres and ward and rehabilitation beds is determined by clinical need—and not relative clinical priority.

The receiving ED, operating theatre, intensive care and ward facilities are purpose built and configured for treatment of burns, with high priority on infection control measures and patient safety. Staff amenities including change rooms, and protective clothing and equipment, are readily available and easily accessible.⁴

Rehabilitation starts on admission and is provided by allied health clinicians with experience and interest in burns management. The full range of therapeutic modalities for scar management, including secondary surgery and interventions to support reintegration and functional recovery, are available to the burns survivor, and supported in outpatient facilities and in the community. The care provided at all stages of the patient's journey is consistent, in keeping with best practice, and informed by specific guidelines.⁵

Burns care is quintessentially multidisciplinary and requires input from clinicians from multiple specialties—of which surgery is only one. While adult burns services have been staffed by general

and plastic surgeons, it is clear that best-practice modern burn care requires active involvement of plastic surgeons.⁶

The skill set of plastic surgeons is well aligned to the requirements of surgical wound management and primary and secondary reconstructive procedures, but the narrow range and repetitive nature of acute burns surgery is one reason very few will practice solely in burn care. General training in one's chosen specialty is necessary but not sufficient to become an expert in burns: those who work part-time in a burns service need to commit enough to this aspect of their practice to acquire knowledge and experience to understand the trajectory of patients with severe burns and respond appropriately to burns-specific complications and complexities. The dangers of the unknown(s) in burns care are real, and can be a trap for the clinician and disaster for the patient. Greater investment of time in the service also promotes engagement with the whole multidisciplinary team and practice that goes beyond operating to encompass a more wholistic involvement in care delivery. For some, this will be a significant positive aspect of their involvement; however, overall, burns is not seen as an attractive speciality for plastic surgeons, and difficulties in staffing burns services are widespread.⁷

Attracting the relatively few plastic surgeons who may be interested in burns as part of their scope of practice is not helped by limited and untargeted access to burns during training, nor by the state of the public hospital system where severe burns are managed. This can compare poorly with private sector plastic surgery in efficiency, access, quality of care, support for sub-specialist services, pay and a general feeling of being valued and having influence within the organisation. Chronic underfunding of public hospitals in recent decades has compromised standards across a broad range of specialities, and burns care is particularly vulnerable. Its high costs are typically poorly captured and thus under-estimated by activity-based funding models. This matters because an under-costed service will suffer from under-investment in staff, equipment and infrastructure.^{8,9} This in turn limits the scope and quality of service delivery, which discourages clinicians who care about excellence. A key factor in attracting plastic surgeons to burns care is to commit to the development of a comprehensive service which functions in the way I have described earlier.

Patients who survive severe burns typically have poor quality of life and scarring outcomes with lifelong disability.¹⁰ They deserve better care, and we should focus on attracting those who are interested in providing it—through training opportunities, comprehensive service improvements and active research programs. Real progress will only be achieved in this area through ‘taking a great deal of trouble’.¹¹

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