Letters to the Editor

Simulated Field Experience in the Use of the Sam Splint for Pressure Immobilization of Snakebite

To the Editor:

We congratulate Dr Davidson on his clearly illustrated paper promoting the use of the Sam splint (The Seaberg Company, Inc, Newport, OR) for pressure immobilization (PI) in the management of suspected snakebite.¹ Soon after the landmark work of Struan Sutherland and his colleagues,² the PI technique became the standard first aid method for snakebite across Australia. The technique is easily taught and intuitive even to basic providers with limited medical experience. Given the notorious toxicity of Australian elapid snakes, it is worthy of note that since the technique was first introduced to our country no deaths have been reported where adequate PI was instituted in the field.³

Dr Davidson is correct that concern has been expressed regarding PI use for viperid bites where, unlike Australian elapids and sea snakes, the major clinical effects are related to local tissue necrosis. Immobilizing the venom by the PI technique may trap or concentrate cytotoxic and proteolytic venom, thus intensifying local tissue damage. However, this remains controversial with conflicting data being reported for animal studies investigating rattlesnake venom.^{4,5} Clearly, field studies are needed to evaluate and support the merit of PI for viperid bites. Such studies should include a comparison with the constriction band, which is a broad flat band applied to exert a pressure great enough to occlude superficial veins and lymphatic flow while leaving the deep venous and arterial circulations intact.⁶ These bands placed proximal to the bite have been recommended as part of treatment for Central American crotalid snakebites.⁷

Although it may seem intuitive that retaining venom locally with a lymphatic pressure bandage would worsen local tissue damage, it is interesting to note that the standard North American first aid advice for snakebite is to immobilize the limb,⁸ which would also be expected to potentiate local tissue damage.

In terms of field experience, we run an annual wilderness medicine course as part of our undergraduate medical curriculum.⁹ During the expedition phase of the course, we provide a series of mock scenarios where the students act as both rescuers and victims in a wilderness

setting. Predictably, we include a snakebite scenario, for the area we walk in is populated by both tiger (*Notechis scutatus occidentalis*) and brown (genus *Pseudonaja*) snakes, the 2 species most often associated with envenomation and snakebite deaths in Australia. We encourage the students to use Sam splints as part of the PI technique (Figure). They are easy to use, versatile, and suitable for prolonged application when evacuation times may be lengthy.

We urge first-aid responders in general to consider the use of PI with the Sam splint, if it is available, for all suspected elapid snakebites and at least consider its use for viperid bites when evacuation time is likely to be prolonged.

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Sam splint being used for pressure immobilization of simulated snakebite in a wilderness setting.