

further tentacle contact. One is the sea nettle which in America is a *Chrystosora* animal, the closest relative we have in Australia is *Pelagia* or the mauve stinger. Another is their Man O' War which is very similar to, if not identical with, our Portuguese Man O' War or blue-bottle (*physalia*). Published work shows that antibodies, particularly IGG but also IGE antibodies, have been measured in people stung by these animals and the antibody titre is correlated with the severity of the sting and of the symptoms. The other two animals are the box jelly fish, and a toxic sponge which came into contact with the hand of a diving Adelaide surgeon. These two are cases I have seen or been consulted about. The antibodies of at least the first two appear immediately. They may persist for years. In the case of the girl who was stung by a box jellyfish at Yeppoon about 16 days later the whole thing blew up again. It was clear that this was not infection. In fact this secondary reaction caused more problems for her than did the primary sting. She did have a history of allergy. When I was contacted on the phone I advised that she be treated with steroids, as I had done with the chap in Adelaide, and she got better.

It looks very much as if allergic reactions in jelly fish envenomation may be important. This applies to the immediate reaction as well as to delayed reactions. Elevated specific immunoglobulins, particularly IGG and IGE, have been demonstrated particularly with the sea nettle and *physalia*, and these can persist for years. Recurrence of clinical cutaneous reaction to jellyfish stings may occur within a few weeks without additional contact with the tentacles. As far as sea nettle and blue-bottle are concerned serological cross reactivity occurs.

SEA SNAKE ENVENOMATION

Hilary Mercer

My presentation concerns a case of a sea snake bite which is apparently the first case which has been reported in the Australian literature, although there have been many cases reported from Malaysian waters.

A couple of years ago a two year old child was paddling on Lamamoor beach which is quite a picturesque spot between Emu Park and Yeppoon. She started screaming and the mother ran down and saw a rather loathsome creature attached to the child's ankle. As she approached the creature swam away towards two teenage boys who killed it and brought it along for identification. The mother had great presence of mind and grabbed her daughter around the calf with both her hands and did not let go. The pair of them were taken to the Yeppoon Ambulance station where the wound was washed and inspected by the ambulancemen. No tourniquet or compression bandage was applied.

The mother removed her hands. Up to that point the child was speaking coherently and quite bright. But within 30 seconds of the mother taking off her hands, the child became very weak, developed ptosis and some respiratory distress. They were rushed to the Yeppoon Hospital, which was close by, where about 20 minutes after envenomation the child became cyanosed and needed intubation. From there they went to Rockhampton Hospital. They arrived there about an hour after envenomation. By

this time the child tolerated reintubation without any resistance whatsoever.

Then about one and a half hours after envenomation, we gave the first dose of sea-snake antivenom. By this time the snake had been brought along and identified by one of our local herpetologists, and this was later confirmed by the Queensland Museum, as being *Astocius Stoksii*. Incidentally, no antihistamine was given because of a previous reaction to promethazine and for some obscure reason adrenalin was not given either.

Over the next two hours there was no real improvement and we gave two further ampoules of antivenom. After the third ampoule there was some apparent clinical improvement. The child opened her eyes and started looking about. However over the next 10 hours or so the child seemed to regress and 14 hours after envenomation the child had odd clonic movements and we thought the conscious state was deteriorating again. We treated her with phenytoin and gave a fourth ampoule of antivenom.

I then spoke to Struan Sutherland on the phone and he suggested that we were probably not giving enough antivenom. So we gave another three ampoules. The only thing that stopped us giving more was that the child developed a rash which responded rapidly to antihistamines. After those further three ampoules the child became a lot better. About 22 hours after the bite we were able to extubate her. Two hours after that she was sitting up and attempting to speak.

The following day she was sent to the children's ward. Over the next few days she had very odd movements of her limbs and hallucinated but she was able to be discharged six days after the envenomation. Subsequently there were no real problems. However she must have had sadistic brothers because they kept creeping up to her with bits of grass and things and saying "Ah, the snake's got you!" and she would go all 'funny'.

There was nothing dramatic about the investigations. The coagulation status was normal, muscle enzymes were up, but cardiac enzymes were normal. The white blood cell count was raised, as expected, to about 27,000. Renal function tests were quite normal. Myoglobinuria was only found on one occasion about 48 hours after the envenomation.

The snake itself was about one and a half metres long. It was an *Astocius Stoksii* which is a snake that is not seen very often around here. It inhabits the waters of the Indo-Malayan coast more than here. We see many sea-snakes in central Queensland. They are regarded as potentially dangerous by divers and fishermen but we do not see many bites. They seem to be timid creatures. However when they are mating they conglomerate in large number and may come towards people which is very unnerving apparently.

The way this child's foot was mauled may have been responsible for the massive envenomation in this case. This snake is the largest of the sea snakes. It has the largest mouth with the largest fangs, as far as I know, of the sea snakes. Its fangs can penetrate wet suits.

There are just a few points worth making. The bite itself is not painful. We were lucky that the creature was seen and caught, otherwise I do not know what we would have thought. A little child playing among the rocks, would we have treated it as a sea snake bite? Other things that one might consider, stonefish, bullrogs, box jellyfish, are characterised by intense pain whereas this was not. What was the value of first aid? Whether or not the mother's grip of the leg was very important, I do not know. Whether the sudden collapse of the child would have occurred when it did or not is unknown. But one imagines that had a compression bandage been put on at the ambulance station, the course may have been a little less dramatic. Finally, although this is quite a rare occurrence, there are more and more people involved in water sports and diving and so forth, so it could happen again. Certainly coastal communities around Northern Queensland should be aware of the possibility and have access to sea-snake antivenom.

ENVENOMATION BY THE BLUE RINGED OCTOPUS

Hugh Stephens

When I arrived from the UK to take up my appointment at the Gold Coast Hospital I had never heard of a Blue Ringed octopus. I took it to be a man-eating monster of Jules Verne proportions. There was obviously someone else of equal ignorance in Queensland at the time. He had picked up the thing, died and was resuscitated. He was born in Mauritius and had spent much of his life in New Zealand before moving to Sydney where he worked as a bus driver. Thus he had no particular exposure to a Blue Ringed octopus previously. He was a member of a group of holiday makers who went on a day trip to South Stradbroke Island. Returning to the launch that conveyed them to the island he picked up two small octopi from a pool to show them to his two nieces who were with him. When he had discarded the second octopus there was a drop of blood on the back of his left hand, although he had been unaware of any bite at the time. A few minutes later he was relating the incident to the skipper of the launch when he felt a degree of numbness and tingling around his mouth. This was followed by weakness of his legs which caused him to collapse.

Fortunately for him there were nearby an off duty customs officer and an off duty ambulance officer who were talking to a seaplane pilot who, luckily, was on duty and had his plane with him. The ambulance and customs officers were both efficient in cardio-pulmonary resuscitation and, in fact, had just attended a revision course. Also the ambulance officer had recently read a headline in the local Gold Coast paper which had alluded to a plague of these monsters hitting the Gold Coast. Consequently he had read up the symptoms and signs and treatment of the bite. In short, God was with the patient that day. The trio overheard the conversation, and with the skipper came to the patient's aid. The urgency of the problem was not lost on them. They immediately bundled the patient onto the plane, radioed for an ambulance to meet them at the other end and took off to the mainland a few minutes ride away.

Approximately three minutes later the patient was noticed to twitch mildly in the plane and lost consciousness. As he did not have any pulse or respirations CPR was commenced. On landing the patient was transferred to the ambulance where CPR was continued and oxygen via a resuscitator replaced the mouth to mouth. The patient was taken to the Gold Coast hospital where he arrived two or three minutes later.

Examination in the Accident and Emergency department showed him to have fixed dilated pupils, no eye opening, no motor or verbal response, no pulse, no respirations and asystole on the Lifepak monitor. He was resuscitated with intubation, ventilation, intravenous adrenalin, sodium bicarbonate, DC counter shock. Sinus tachycardia and a spontaneous cardiac output were restored. His problems at this stage were paralysis from the bite, aspiration pneumonitis and anoxic ischaemic encephalopathy and possibly brain death. His management consisted of hyperventilation, dexamethasone, intravenous mannitol and antibiotics in the form of Amoxyl. The major concern at this stage was our inability to distinguish between brain death and the effects of the venom. Fortunately the patient was obviously comatose because I gather that a lot of conversation went on between the residents as to whether he was dead or not dead. Four hours post admission the patient was noticed to have some reflex withdrawal from painful stimuli of both hands and feet. At five and a half hours post admission his pupils were mid range and reactive, he had cough and gag reflexes and spontaneous movements of all limbs. Eighteen hours after admission we were able to extubate him. His cerebral status was still giving us cause for concern as he had no comprehensible conversation, although he had spontaneous eye opening and no focal neurological signs.

Over the next few days his mental status gradually improved. Between 24 and 48 hours confusion and disorientation gave way to a period of sexual harassment of the nursing staff. We were assured by his wife that this was definitely abnormal. He had no recollection of the events of the day throughout his stay of ten days. He was transferred to the Canterbury Hospital in Sydney on day eleven. By that stage a certain degree of confabulation had occurred and he claimed to have remembered the incident and wrestling with the octopus which he had said had a six foot span.

To summarize, a 44 year old male was bitten by a Blue Ringed octopus and within three minutes developed circumoral parathesiae, by four minutes limb weakness and collapse, and in seven minutes cardiorespiratory arrest. The complete paralysis persisted for up to about four hours. Reflex withdrawal from pain was then noted. Over the next four to eighteen hours he had gradual return of motor function, the course of which may have been modified by anoxic ischaemic encephalopathy.

Since then we have had another case of Blue Ringed octopus bite. A child found a Blue Ringed octopus in a coke tin and picked it up. He had actually kicked the tin first, and had noticed a mark on his foot. This was about a month after the first chap. The boy brought the octopus to casualty in his hand and pointed to the mark on his foot. So everybody was waiting for him to collapse. We sat there for 12 hours waiting for him to collapse but nothing