After the passage of dark urine he became oliguric and was referred to the Nephrology Service. Necrosis was noted on the affected areas of the patient's skin.

He was treated with IV fluids, frusemide and hydrocortisone but the oliguric renal failure persisted. Peritoneal dialysis was commenced and was required for three weeks. Oliguric renal failure secondary to myoglobinuria was diagnosed. On the fifth day after being stung he developed severe pulmonary oedema secondary to hyperkalemic cardiac failure. Emergency haemodialysis with forced ultra-filtration via a femoral vein catheter gave a dramatic response with clearing of the pulmonary oedema and improvement in the patient's cardiac status.

His laboratory investigations at the time of referral to the Nephrology Service were:

Hb 16.8 g/dl
WCC 21,000/c mm with PMN 81%
Normal platelet count
Prothrombin time normal
Albumin 49 g/1
Phosphate 2.93 mmol/1
CPK 1328 u/1
Urea 30 mmol/1
Creatinine 490 mcmol/1
Na 132
K 4.7 mmol/1
Calcium 2.31 mmol/1
Urates 584 mmol/1
LDH 1749 u/1

Whether the muscle breakdown with consequent myoglobinuria was a toxic effect of the jellyfish sting, or else was caused by severe muscle spasms secondary to the pain of the stings is not clear. The patient continued to recover well and two months after being stung his renal function was virtually normal. Extensive scarring at the sites of the stings remains however.

Discussion

The near fatal immediate clinical effects of jellyfish stings in these two cases together with the permanent cosmetic disfigurement sustained as a result of necrosis of the envenomated skin raises the question as to whether or not Commonwealth Serum Laboratories Sea Wasp antitoxin would be helpful in the management of future cases. The oscillations in blood pressure of the first case and oliguric renal failure in the second case indicate that toxins from a Cubomedusan species of jellyfish were acting in both cases.

A Cubomedusan jellyfish specimen taken from littoral waters near the site of the second case has been tentatively identified as *Carybdea alata* by the Department of Zoology at the University of Queensland. The reports of the victims on the appearance of their jellyfish contacts support this type of coelenterate as being the most likely culprit, and it may be that the Omani variety is more poisonous than its Australian counterpart. No reports of Chironex species in Omani waters exist but investigation of this possibility continues.

The views of the expert speakers at the SPUMS Annual Scientific meeting are particularly sought on the question of the usefulness or otherwise of Commonwealth Serum Laboratories Sea Wasp antitoxin in the management of such cases in Oman.

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A TENTATIVE GUIDE TO MANAGEMENT OF MARINE STINGS

SK Sutherland

Pain relief (often required for fish stings).

Bathe in warm, not scalding, water. Use outboard engine cooling water if necessary.

Local anaesthetics. A regional nerve block may even be necessary (eg. bupivacaine).

Opiates

Emetine (rarely available)

Antivenom for severe stonefish stings

Local tissue damage.

Take positive action and remove foreign bodies or dead tissue. Ensure good drainage. X-ray if indicated.

Wash well with fresh water as sea water may encourage bacterial growth.

The wound is potentially infected so remember marine bacteria represent a wide range of organisms, many of which are not fully characterized. Many are resistant to common antibiotics. Expert opinion is that trimethoprim sulphamethazole (Respin, Bactrim, Septrim) is the best first choice.

Tetanus prophylaxis if indicated. Death from tetanus has occurred especially after stingray injuries.

NB. It may be necessary to rest the injured region for days for satisfactory healing to occur.

General effects:

Shock, note pain relief above.

Effects of venom, give antivenom if indicated.

Maintain vital functions (ABC is Airway, Breathing and Circulation).

With the exception of Blue-ringed octopus bites, conus stings and sea snake bites, the pressure/immobilization technique should not be used to attempt to hold the toxins at the site of the bite or sting. To do so may increase pain and local tissue damage.

JELLYFISH STINGS

Prompt application of domestic vinegar to the affected areas appears to be the simplest and most rational first aid. Methylated spirits should not be used.

BOOK REVIEWS

THE DIVING EMERGENCY HANDBOOK

John Lippmann and Stan Bugg
1985 Melbourne. JL Publications.

The subtitle "A guide to the identification and first aid for scuba (air) diving injuries" is a clear description of the book's purpose. No medical knowledge is needed to be able to use the book. The Section A of the book is a list of signs and symptoms with their possible causes. Section B is a list of diving ailments (the causes of Section A) their causes, signs and symptoms and first aid. Occasionally there is a fourth heading "Doctor" where simple accurate advice to a non-diving medical practitioner is given. All the descriptions are accurate and the first aid appropriate and simply set out. If the book stopped here it would be an excellent buy.

But there is more. Section C gives information on such things as the pressure immobilization technique for snake bite, what to do about omitted decompression, emergency recompression using oxygen in the water, decompression tables, diving at altitude, flying after diving, oxygen therapy, a diver's first aid kit, EAR and CPR, flow charts for coping with an unconscious patient, and for first aid for a diving accident, and a page for emergency telephone numbers of the police, ambulance service, recompression chambers, diving doctors, hospitals and a place for the name of the organisation to which a diving accident report should be sent.

The authors, who are both experienced diving instructors, have included Dr Bruce Bassett's no-decompression tables and recommended their use. SPUMS members who attended the ASM at Bandos Island in the Maldives were introduced to these tables and were given waterproof copies to use. They are based on the mathematics of the USN tables but with lower supersaturation ratios. They are a set of no-decompression bottom time limits. For all dives below 9m (3Oft) a safety stop of 3 to 5 minutes is done at a depth of 3 to 5m. This total time underwater is used to enter the USN no-decompression repetitive group tables at the end of the dive. The USN surface interval table is used to calculate the new repetitive group after the surface interval.

The residual nitrogen time for the new repetitive group is subtracted from the Bassett bottom time to give the bottom time available for the second dive.

The safety factors in favour of the Bassett tables over the USN tables are:

1. The shorter bottom times.

2. The safety stop, which allows any bubbles that have formed a chance to be got rid of.

3. By using the total time underwater to find the repetitive dive group, one assumes a higher tissue nitrogen tension than actually exists.

4. The repetitive dive is started with a smaller nitrogen load than the USN repetitive dive table assumes.

I whole heartedly concur with their advice to use the Bassett tables as safer than other available tables.

I strongly recommend all divers, including doctors who dive, to buy this excellent book. It is waterproof, so can be taken on all diving expeditions. A 2B pencil writes clearly on the waterproof pages. For permanence use a spirit based marker for the emergency telephone numbers etc.

John Knight
Melbourne

OCTOPUS DANGER

There was an encounter recently in the waters off Cyprus between a scuba diver and an octopus. There were two divers making a search of a gulley possibly 15 metres deep, keen to find and film an octopus. One was seen making a break from its resting place to obtain cover and relative safety in the nearby rocks. It expelled ink and jetted towards a sanctuary but one of the divers managed to grasp the end of one tentacle and to pull the octopus towards him, but lost his grip and was therefore surprised to find that the octopus was too ill-read to know that it was supposed to flee from him when given the chance. It draped itself around the diver's body, changed its colour to a fiery red, and squirted more ink. It is reported that the octopus had one tentacle to below his fins and another well above his head, a distance of over 6 feet. At this stage the gallant diver decided that the octopus was in a position to make a real impression on him and it was time to end the encounter, so used his full strength to reach the shallows. By the time they reached 4 metres both the players were becoming exhausted and the octopus let the diver go free. Newspaper reports called the octopus the attacker.

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