WEEVER FISH STINGS

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There are various species of weever fish (Maltese *tracna*). Those found in the Mediterranean, belonging to the family Trachnideae, as listed by J. Barbara (1961), are:-

	Scientific Name	*Maltese*	*English*	*Italian*
1.	*Trachinus araneus*	Tracna	Spotted weever	Tracina ragno
2.	*Trachinus draco*	Sawt	Greater weever	Tracina drago
3.	*Trachinus lineatus*	Tracna tal-fond	Streaked weever	Tracina di fondo
4.	*Trachinus vipera*	Stracna	Lesser weever	Tracina vipera

Table 1.

Some of these fish can lie partially buried in the sand in very shallow sandy water. They can inflict painful stings on the feet of victims walking or paddling in such places. The fish can be light brown or greyish in colour and can camouflage themselves very well in their natural habitat. They vary in length from 6 to 16 inches and have six hard dorsal spines as well as smaller opercular ones. The dorsal spine which is mostly hidden behind the gill cover is about 1½ inch long and is hollow like a hypodermic needle. When the fish attacks its victim it injects a neurotoxin which causes considerable pain. In cross section the spine has a somewhat kidney-shaped outline — a point which it is useful to bear in mind when examining the puncture entry wounds of patients possibly stung by such fish. The fish is edible, and can be seen on sale in local fish markets or stalls especially in the month of November. Those offered for sale are however usually devoid of spines which are purposely removed by fishermen or fishmongers as a precaution.

The paucity of medical literature about this subject, and the vagueness of the different methods of treatment and management described has prompted me to write this paper. Victims are usually stung in the plantar aspect of their foot whilst walking or paddling in shallow sandy water — even at a few inches depth. It is quite possible that the patient simply steps on the fish, but I have seen cases whose entry puncture wound has been on the dorsum of the foot. Therefore, I think that the fish actually attacks its unfortunate victim. This can be substantiated by such accounts as given by patients No. 2 and 4 in Table 2.

Patient 2 (J.B.) caught the fish with his harpoon, did not recognize what it was and on trying to handle it to take it off the hook, the wriggling fish attacked him and stung him in his right thumb. Patient No. 4 (F.C.), was snorkling and noticed a 10 inch long fish which actually came towards him, and inflicted a sting on the right side of the abdomen — luckily the puncture wound was very small and appeared to be quite superficial.

As soon as the victim is stung he calls out that something in the sand has 'bitten' him. In clear water, bathers nearby hardly believe him as they usually can detect no cause in the form of crabs, sea urchins, broken glass bottles or other sharp objects in the area. The patient, however, soon displays great alarm and may even cry through the severe pain

No.	Patient	Sex	Date	Site of Sting	Emergency Treatment
1.	J.S.	M	29/8/69	Base of Right big toe, plantar aspect	2% Xylocaine
2.	J.B.	M	8/9/69	Right thumb	2% Lignocaine
3.	M.T.P.	F	9/9/70	Arch of left foot	2% Lignocaine plus incisions
4.	F.C.	M	13/7/71	Right paraumbilical area	2% Lignocaine; Systral 2ml I.M.
5.	C.J.O.	M	15/9/71	Left heel	2% Lignocaine
6.	E.M.	F	25/8/72	Dorsal aspect of Right big toe	2% Lignocaine
7.	I.M.B.	M	15/9/72	Plantar aspect right foot between big toe and second toe	2% Lignocaine
8.	C.A.	F	28/6/73	Dorsal base of middle toe	2% Xylocaine; Systral 2ml
9.	J.W.	F	14/9/73	Plantar base of left second toe	2% Xylocaine; Systral 2ml
10.	C.R.B.	M	16/9/73	Plantar base of left big toe	2% Xylocaine; Systral 2ml

Table 2

which renders him very anxious and nearly drives him hysterical. Fear grips the patient, because very soon the pain spreads proximally along the foot, ankle and leg up to knee level or even higher. This causes the victim to realise that he is suffering from some form of poisoning and his behaviour usually persuades his helpers to take him to the nearest hospital or first aid post or to call a doctor urgently to the spot. As I practice in the North of Malta where there are quite a few sandy beaches I have been called to such emergencies ten times since 1969 (Table 2).

On arrival at such emergencies, one finds a very restless patient complaining bitterly of excruciating pain. He is usually able to point to the tell tale single puncture wound inflicted by the fish, which is also the most tender spot. The entry wound can vary in size from 1 to 3 mm. in diameter and the larger ones can be seen to have a somewhat kidney-shaped peripheral outline consistent with the cross section of the fish's opercular spine. A magnifying lens helps in examining the smaller puncture wounds. Around the wound an erythematous swelling usually starts to develop within minutes, and this swelling can spread to the whole foot. The patient is usually very anxious, frightened, perspiring, in obvious pain, but, remaining fully concious, he will ask many questions as to the gravity of his condition.

Treatment

Clearly the first thing the patient needs is a lot of reassurance. One can explain that the pain is due to a weever fish sting and that it can be remedied. Having gained the patient's confidence I clean the wound and surrounding skin with acriflavine and surgical spirit and inject about 2ml of 20% Lignocaine or other local anaesthetic near the entry wound, so near in fact that part of the solution injected is made to ooze out of the puncture tract acting as an irrigation. Immediately this is done the patient experiences a dramatic retrograde improve-

ment in his pain which I have noticed characteristically to diminish down distally in a contrary fashion to its original spread. The patient is then left with just a slight soreness at the puncture site. A simple small elastoplast with gauze dressing is then applied and the patient is able to walk away immediately after treatment. Depending on the size of the swelling and allergic oedema, one of the antihistaminics such as Incidal, Systral or Andantol tablets one t.d.s. can then be prescribed. If the swelling is pronounced one of the injectable forms of antihistamines such as Piriton or Systral is given intramuscularly at a different site. Perhaps in very severe forms one of the cortisones should be considered, but this has not proved necessary in the cases I have met so far.

The question then arises as to whether one should give anti-tetanus prophylaxis. I personally think that it is unlikely that the fish harbours tetanus spores in its spines unless its habitat happens to be polluted with sewage — but then that would hardly be a suitable place for swimming.

Prognosis

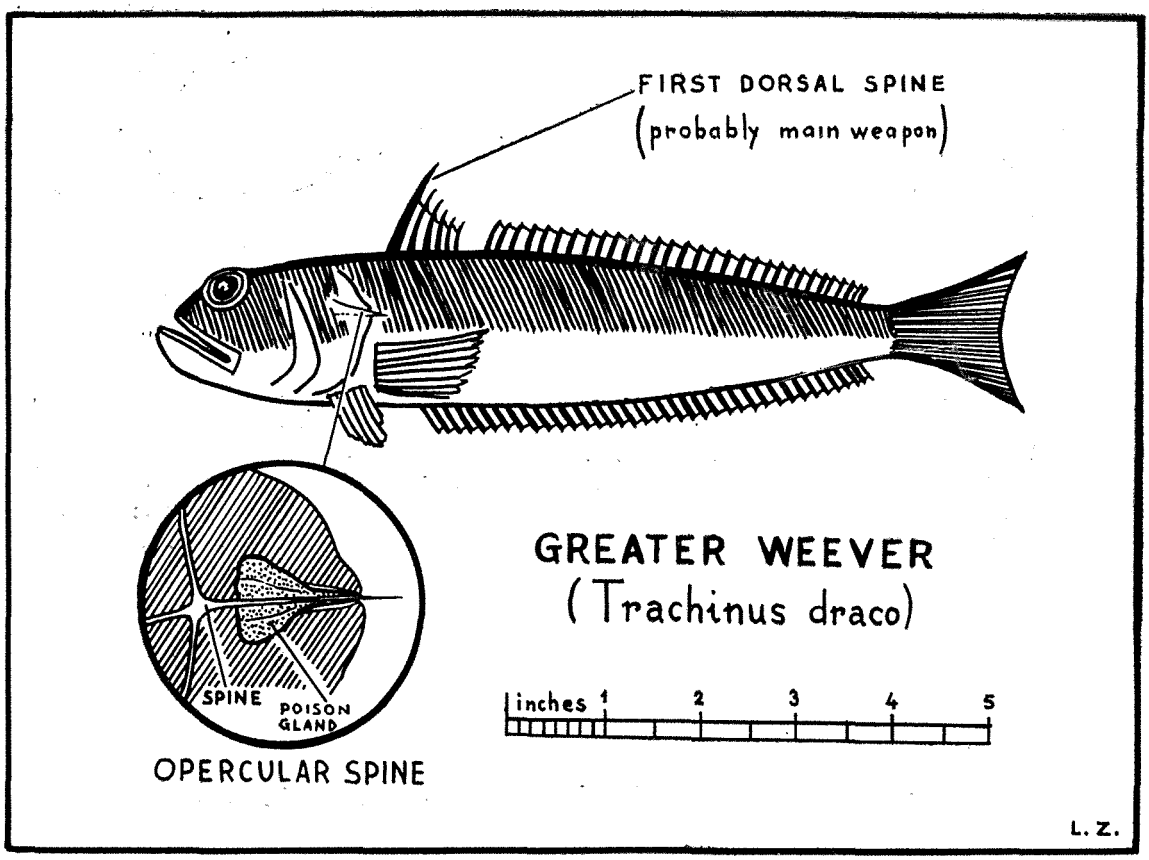
All the cases listed above which I have seen in the last five years have recovered completely. None of the patients needed transfer to hospital and no one developed any residual weakness or paralysis. Any swelling subsided gradually within two or three days. There have been no recorded secondary infections. I think that we should squash the local myth that if one is stung by a weever fish one can remain paralysed for life. Theoretically, however, some form of severe anaphylaxis can occur perhaps in some particularly sensitive individual.

Discussion

I have often asked local fishermen what they do if they are accidentally stung by a weever which they might have caught out at sea, and some have told me that they split the fish itself, take its liver out, and rub it vigorously on the puncture wound of the victim. It could well be that the fish stores or concentrates its own anti-venom in its liver. I do not propose to try this method, as an injection of a local anaesthetic has so far always produced good results and is by far a more sterile procedure. As far as I know there is no anti-weever fish venom serum available, but what has been said above might well make a good subject for research for our pharmaceutical faculty. The very quick relief after a local Lignocaine injection has led me to believe that the local anaesthetic besides acting directly on the sensory nerve endings, might have also a fortuitous and useful effect in neutralizing the fish neurotoxin. This can further be substantiated by the fact that the relief from pain is long lasting, even after the effect of the local anaesthetic lapses; otherwise one would expect that at least some of the pain would recur when the effect of the local injection wears off. I have heard of patients who have been treated differently e.g. with anti-tetanus vaccines, cortisones or antihistamines only, and who have experienced the pain for weeks if not months after the accident. The sooner the treatment is given the better as the neurotoxin is not given any chance to "fix" itself.

Besides on Mediterranean sandy beaches, weever fish can be found on the Atlantic coasts and in the South of England where it is also known as "Bishop fish", especially in Cornwall.

It might well be that the fish have some special aversion against some special persons, and, it is interesting to note that patient No. 10 (C.R.B.) recalled that he had been involved in a similar incident whilst on holiday in one of the south coast resorts in England, about four years before. Keeping in mind the thousands and thousands of people swimming in our sandy beaches, it must be stressed that such casualties are relatively rare and there is no cause for undue alarm. Perhaps one should advice the wearing of rubber slippers for paddling in shallow sandy waters especially in the month of September, the month in which 6 of my cases occurred.



Other methods of treatment have been suggested. Birch (1969) argues that as the venom is inactivated by heat, as a simple first aid remedy one should immerse the foot repeatedly in water as hot as the patient can bear. With all due respect I think that this method would actually add to the patient's discomfort, and might even encourage quicker spread of the neurotoxin by the vasodilatation thus provoked. Patients No. 1 (J.S.) and No. 4 (F.C.) tried this measure and reported that there was no noticeable improvement in the pain — if anything it became progressively worse. I think the same comments apply to Birch's suggestion of adding hyaluronidase to a local injection. I am of the opinion that as a first aid measure one should suggest the use of ice packs to encourage vasoconstriction and to limit the poison to as small an area and to keep it as peripheral as possible. Evans (1943) advocates the use of 5% potassium permanganate injection. I will be recalled that potassium permanganate has been in vogue also for snake bites and scorpion stings, but the method has been largely abondoned by most casualty practitioners, as it seems very doubtful whether it has any beneficial effect at all. The injection of a local anaesthetic in the form of Lignocaine or Xylocaine has given me such good results that I have made it a point always to carry some in my emergency bag.

Coda

There are other Mediterranean fish which can inflict poisonous stings. Though not the subject of this paper, I think it opportune to mention them in the following list which is again after J. Barbara (1961).

Scientific Name	*Maltese*	*English*	*Italian*
Scorpeona porcus	Scorfna sewda	Small scaled scorpion-fish	Scorfano nero
Scorpeona scrofa	Cippulazza	Largescaled scorpion-fish	Scorfano rosso
Helicolenus dactylopterus	Skorfna tal-għajn	Rock-fish	Scorfano di fondale
Dasyatis pastinaca	Boll	Common string-ray	Pastinaca
Dasyatis violacea	Boll tork	Blue sting-ray	Trigone viola

This is by no means a full list. My advice to amateur harpoonists and sub-aqua enthusiasts is to make sure that they know their fish carefully before handling the prized catch.

References

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