

## Weever Fish Sting: An Unusual Problem

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Weever fish are among the most venomous fish existing in the temperate zone. They are found in the coastal waters of West Africa and Europe including the Mediterranean Sea (1-3). The weever fish is a short, stout fish ranging in length from 14 cm (lesser weever fish, *Echiichthys vipera*) to 46 cm (bigger weever fish, *Trachinus draco*). The lesser weever fish inhabits shallow inshore waters where the bottom is flat or sandy and muddy. The greater weever fish lives in deeper, offshore waters (to a depth of 30 m) and is the species usually responsible for the stings suffered by fishermen and divers. Both species spend much of the day partly buried in the sand or mud, with only the head and back exposed. The fish are usually a yellow-grey colour, with a whitish underside, and have eyes that are located almost on top of a flat head. The first, second and third spines of the dorsal fin and single spine on each main gill cover are poisonous (1-2) (Figure 1). Each poisonous spine of the weever fish is grooved in two places along its length. Two grooves contain holocrine glandular tissue which is composed of stratified columnar epithelium. When the spine penetrates the victim, the stratified columnar epithelium ruptures and releases the venom. The venom contains several thermolabile proteins, including 5- hydroxytryptamine, a kinin or kinin-like substance, adrenaline, noradrenaline, histamine, serotonin. 5- hydroxytryptamine cause pain; the proteins and mucopolysaccharide are lethal in some animals and cause a weal and flare reactions when injected subcutaneously (1, 2). Dracotoxin, the major toxic component of bigger weever fish, has been isolated from the crude venom (1). It has membrane depolarising and haemolytic properties (1, 3). In Summer, the fish prefers shallow water, where it buries itself in the mud or sand. Only the eyes, mouth and dorsal fin protrude above the surface (2). Stings may be suffered by fishermen and vacationers. The most common injury is to the lower extremities. A small bite with erythema is evident. Erythema spreads and oedema appears within a few hours. Inflammation may continue for up to 14 days and movement of the limb can be greatly restricted. The victim may be agitated, clammy, pale, anxious. Headache, nausea, vomiting, sweating, and syncope may

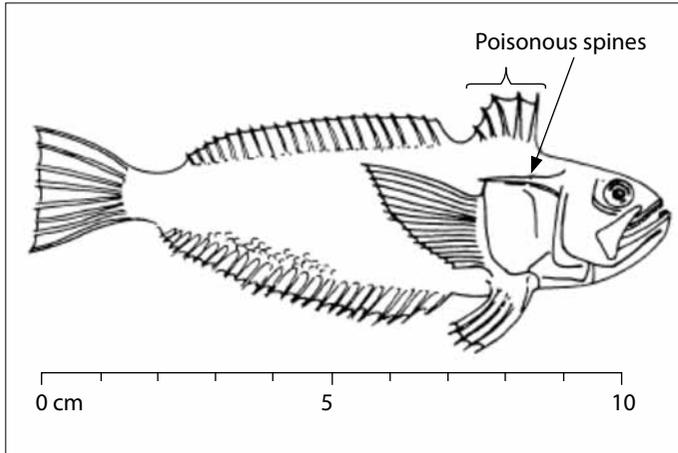
occur rarely. Systemic symptoms are rare. Clinical findings of systemic symptoms are hypotension and depressed respiration. Death is extremely rare (1). The aims of the treatment are to alleviate the pain, combat the effects of the venom and prevent secondary infection. Alleviating the pain may be difficult (2). Usually, simple analgesics will relieve residual pain but on occasions opiate analgesia may be required (1, 2, 4). Intravenous calcium gluconate has been found to be effective in relieving pain in a case whom intravenous narcotics failed (1). Injection of local anaesthetic, either by infiltration or regional nerve block, may also be considered effective to relieve the pain but the procedure itself causes discomfort and takes some time to take effect (2). It is helpful to immerse the affected limb promptly in hot water (approximately 40°C or as hot as can be tolerated) for about 30-90 minutes, although care should be taken to avoid scalding. If immersion is not possible, hot soaks or a poultice should be applied (1, 3, 5). This will dramatically ease the pain within a few minutes, as the toxin is thermolabile. Cold application worsens the pain (1). Little can be done on the beach. Immersing the bitten area in cold water may help alleviate the pain while the patient is taken to the hospital (2). Local wound irrigation, debridement and tetanus prophylaxis are necessary (1). As a commercial antiserum is not available (2, 6), the therapy is mainly empiric (6). Infection is rare but antibiotics will be advisable if local infection develops or can be considered for prophylaxis in the immunocompromised patient (1, 2). A course of tetanus toxoid can be given if the patient is not already immunised (2). Antihistamines may alleviate the local inflammatory response (1). The therapy is mainly supportive (1, 6). Dressing of the wound is not recommended (2). Envenomation can be accompanied by an allergic reaction and treatment for anaphylaxis may be necessary (1). Prevention is primarily by avoidance, wearing sufficient protective footwear and never handling weever fish (1). In Summer, the Mediterranean coast of Turkey rarely encounters such cases. Patients we have encountered, responded to symptomatic treatment.



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**Figure 1.** The lesser weever fish (2)

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