

Contemporary Themes

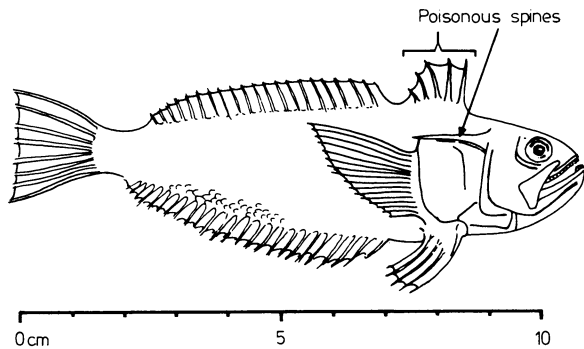
Weever fish sting: an unusual problem

DAVID CAIN

This summer accident and emergency departments in coastal towns of Britain may be presented with an unusual problem. Patients will arrive complaining of having sustained an extremely painful sting on the foot while paddling. The foot will be swollen and tender, and close examination will show a small puncture wound surrounded by erythema. Strong analgesics may not afford complete relief. These patients are victims of the lesser weever fish (*Echiichthys vipera*, formerly *Trachinus vipera*).

Cause of the problem

The weever is a short, stout bodied fish up to 14 cm long, which has six or so venom containing spines in its dorsal fin and a single poisonous spine on each gill cover (figure). In summer it moves to



shallow waters around the British Isles and partly buries itself in the sand with eyes, mouth, and dorsal fin protruding above the surface. There it waits for prey such as shrimps or crabs to pass by.¹ Bathers may tread on the animal, sustaining a sting from one or more of the spines, and occasionally the fish may lunge at a bather.

The bather experiences a sharp stab as the spine penetrates the skin, and shortly afterwards the pain begins. This may increase in severity for up to an hour and lasts for two to 24 hours. The pain varies in severity and is usually localised to the site of the puncture, but the victim may experience pain in the whole of the affected foot or occasionally in the whole limb. The pain is frequently so severe that the patient may be unable to struggle from the water unaided. One man who received a sting to his middle finger amputated the finger in a desperate attempt to relieve the pain.²

Clinical picture

Patients usually present to the accident department within one hour of injury. Typically they are in obvious pain, far in excess of that, say, after an adder bite. They are apprehensive about movement or handling of the affected part. The foot is usually affected, and a small puncture wound with surrounding, spreading erythema is evident; oedema appears within a few hours. The patient may be clammy and pale. Systemic symptoms are unusual, although when these occur they usually include hypotension and depressed respiration.² Death is extremely rare and is thought to be due to respiratory failure.

Venom

What is the poison that inflicts such suffering and by what method does it gain entry to the wound? Each poisonous spine of the weever is grooved in two places along its length, and each groove contains holocrine glandular tissue composed of columnar cells. The spine and glands are covered by a thin integument of stratified squamous epithelium, which ruptures when the spine penetrates the victim, thus releasing the venom.

Partial analysis of the venom has yielded 5-hydroxytryptamine, which causes the pain, two albumins, and a mucopolysaccharide. The albumins and mucopolysaccharide are lethal in animals and cause a weal and flare when injected subcutaneously.²

Treatment

Principles of treatment are those for any poisonous sting or bite—namely, to alleviate the pain; combat the effects of the venom; prevent secondary infection.

Alleviating the pain may be difficult, although most patients respond to moderate analgesia. Some, however, may require pethidine or morphine, and even then relief may not be complete. Injection of local anaesthetic at the site of injury is usually effective but the procedure itself causes discomfort and should be deferred until systemic analgesia has had time to take some effect. Little can be done on the beach, although bathing in cold water may afford some relief while the patient is being brought to hospital.

Combating the venom may be a problem. Incising the wound and irrigating the tissue has been advocated³ but is not advisable, since the spine does not break off in the tissue, the poison is rarely dangerous to life, and the procedure itself entails destruction of tissue. There is no antivenom serum available.

The oedema that invariably accompanies the sting is best treated by raising the affected part, as a compression bandage only adds to the discomfort. As with a bite, the possibility of secondary infection should be considered and the patient given a course of tetanus toxoid if not already immunised. A short course of prophylactic antibiotics is advisable. Usually no dressing is required; the puncture site is more comfortable if left open to the air.

Incidence and comment

Weever fish inhabit the waters around the British Isles, along the coast of Europe, extending to the Baltic and the southern tip of Norway and down to North Africa, including the Mediterranean. It has been estimated that there are about

Royal West Sussex (St Richard's) Hospital, Chichester, West Sussex PO19 4SE

DAVID CAIN, BSC(ZOOL), FRCS, senior registrar, accident and emergency department

10 cases of weever fish stings a year in Denmark,² but Denmark is near the limit of its distribution. The number of stings on the south coast of Britain certainly exceeds that number each summer. There is little information on whether the weever is more common in the south⁴ than the north of the British Isles, but probably it is more prevalent in the warmer waters of the south. Certainly the risk of injury is greater in the south, presumably because more people bathe there.

A close relative of the lesser weever, the greater weever, is responsible for stings sustained by fishermen who handle fish caught in nets. Greater and lesser weevers may cause injuries to shrimp fishermen in shallow waters. In Britain the weever is not fished commercially, although in France it is considered a delicacy and is caught on a commercial scale. In some French cities the law requires that the spines must be removed before sale, as they can still inflict a painful sting.

The weever is not new to the British Isles. The following description was published in 1776⁵: "The wound inflicted by its spines is exceedingly painful, attended with a violent burning and most pungent shooting and sometimes with an inflammation which extends from arm to shoulder." The various cures described included applying warmed stale urine to the wound.

Probably the most important feature of the injury is that it is relatively rare and the cause may be overlooked. Any patient who gives a history of having sustained a painful wound while paddling in the sea may have got it from broken glass or a sharp tin, but if the pain seems out of proportion to the size of the wound the weever fish may be the culprit.

I thank the Natural History Museum, London, for help in preparing this article and Mrs P Vincent for typing the manuscript.

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(Accepted 25 May 1983)

Communicable Diseases

Surveillance of the acquired immune deficiency syndrome in the United Kingdom, January 1982-July 1983

Prepared by the Public Health Laboratory Service Communicable Disease Surveillance Centre

Since 1981 there have been many reports from the United States of previously uncommon diseases, notably Kaposi's sarcoma and *Pneumocystis carinii* pneumonia, in young, homosexual men.¹⁻⁵ During that year and the later part of 1980 the Centers for Disease Control, Atlanta, noted an increased number of requests for pentamidine, a drug used in the treatment of *Pneumocystis carinii* pneumonia and on investigation discovered that many of these requests were for homosexual patients or intravenous drug abusers.⁶ Subsequently the syndrome of Kaposi's sarcoma, *P carinii* pneumonia, and other opportunistic infections was described in other groups, including haemophiliacs, other recipients of blood products, and Haitians⁷⁻⁹ and was named the acquired immune deficiency syndrome.

In December 1981 a case of the acquired immune deficiency syndrome in a homosexual was described in England.¹⁰ In September 1982 a surveillance scheme to monitor Kaposi's sarcoma and opportunistic infections in Britain was set up by the Public Health Laboratory Service Communicable Disease Surveillance Centre in collaboration with the Communicable Diseases (Scotland) Unit. This report describes the scheme and the results up to 31 July 1983. It includes retrospective data from 1 January 1982.

Objectives, definitions, and identification

The objectives of the surveillance scheme are to detect the acquired immune deficiency syndrome in Britain and to monitor trends in its incidence; to describe the basic epidemiology of the condition; and to provide information for those undertaking research into the acquired immune deficiency syndrome.

Kaposi's sarcoma is a multifocal, metastasising, malignant reticulosis with features resembling those of angiosarcoma, principally affecting the skin, though visceral lesions are sometimes observed.¹² Until recently the disease was rare in Europe and North America, occurring mainly among elderly men of Jewish, Italian, or Greek ancestry and running a protracted course. Since 1934 a more aggressive form of the disease, with visceral lesions, has been reported in equatorial Africa among young men.¹³ In 1978 Kaposi's sarcoma was described in patients who had had renal transplants¹⁴ and also in others who were iatrogenically immunosuppressed.¹⁵ Its occurrence in young homosexual men was recognised in 1981. Although cases of all types of Kaposi's sarcoma are included in the British reporting scheme, only those coming within the definition of the acquired immune deficiency syndrome were included in the analysis.

The definition of the acquired immune deficiency syndrome compiled by the Centers for Disease Control was adopted: "For the limited purposes of epidemiological surveillance, CDC defines a case of the acquired immune deficiency syndrome (AIDS) as a person who has had a reliably diagnosed disease that is at least moderately indicative of an underlying cellular immune deficiency (such as an opportunistic infection, or Kaposi's sarcoma in a person aged less than 60 years), but who, at the same time, has had no known underlying cause of cellular immune deficiency nor any other cause of reduced resistance reported to be associated with that disease."

This is a practical and sensitive definition, which is made more specific by stating the diseases considered to be at least moderately indicative of cellular immune deficiency and the known causes of reduced resistance reported to be associated with particular diseases.