

CASE REPORT

RADIAL ARTERY INJURY BY A CAT FISH (*PANGASIVS SUTCHI*) SPINE STING

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Abstract. Peripheral vascular injuries result from penetrating or blunt trauma to the extremities. We describe here an unusual cause of a radial artery injury by the spine from the pectoral fin of *Pangasius sutchi* in a 51 year-old man and we review the literature.

Keywords: cat fish sting, radial artery injury

INTRODUCTION

Peripheral injuries account for 80% of all cases of vascular trauma (Rich *et al*, 1970). The upper extremities are involved in one-third of all patients with vascular injuries (USA figures) (Frykberg *et al*, 1991). Peripheral vascular injuries may result from penetrating or blunt trauma to the extremities (Rathley, 2011).

Mechanisms of vascular injuries include gunshot wounds, stab wounds, motor vehicle accidents, fall and miscellaneous (Rich *et al*, 1970). The likelihood of serious vascular injury is lower in patients who sustain low-energy wounds, such as those produced by handguns and knives (Bongard *et al*, 1990).

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We describe a patient who sustained a radial artery injury from the spine of the pectoral fin of a catfish (*Pangasius sutchi*). We conducted a medline and google scholar search using the key words: "radial artery injury", "spine of pectoral fin", "cat fish" and "*Pangasius sutchi*". We could not find any reports of a cat fish spine injury of the radial artery. This case is described here.

CASE REPORT

A 51-year-old Malay man was brought to the emergency department because of left hand pain caused by a puncture wound from the spine of the *Pangasius* cat fish. The incident occurred due to improper handling of the fish. The spine of the pectoral fin penetrated the dorsal aspect of the left hand. After being punctured he refused to let go of the fish but called for help. A friend came and used a metal cutter to cut off the portion of the spine embedded in his hand. Upon

presentation he denied numbness of weakness of the hand. His hand range-of-motion was restricted by pain and swelling. He had no history of previous medical illness, bleeding disorders or of chronic medication use.

On examination, the patient was anxious, complaining bitterly of the pain. His vital signs were normal. The dorsal aspect of left hand was markedly swollen (Fig 1). The swelling was pulsatile and tender to palpation. The spine of the pectoral fin was embedded firmly in the lateral dorsal aspect of the left hand adjacent to the snuff box. Blood was oozing slowly from the wound. The fingers were not cyanotic. The capillary refill in the fingers was less than 2 seconds. His left wrist radial pulse was palpable. His sensation and finger movements were intact. He had minimal difficulty flexing the wrist joint.

A complete blood count, coagulation profiles and serum electrolytes were all within normal limits. A lateral radiograph of the left hand demonstrated the spine had penetrated obliquely into the hand muscle. Soft tissue swelling was noted (Fig 2).

The diagnosis of a penetrating injury due to the spine of the pectoral fin of the *Pangasius* cat fish was made. He received paracetamol 1 g orally and diclofenac sodium 75 mg intramuscularly to ease the pain. Anti-tetanus toxoid 0.5 ml was administered intramuscularly into the right deltoid. The patient was referred to the orthopedic team for removal of the spine and wound care.

In the operating room, a left wrist block was performed and the spine was removed easily. Blood began spurting from the wound after the spine was removed. The wound was immediately explored and the bleeding was found to



Fig 1—Pulsatile swelling at the lateral dorsal aspect of the left hand with the spine of pectoral fin *in-situ*.



Fig 2—Radiograph showing the embedded spine of the pectoral fin of *Pangasius sutchi*.

be originating from the radial artery. A radial artery ligation was performed to control bleeding.

The patient had an uneventful post-operative period. He was discharged home the following day on oral cloxacil-

lin 500 mg six hourly and told to have wound care at the nearest health clinic. He was advised to complete the antibiotic for a week and follow up in one week. At follow-up, he was found to be healthy, the swelling was markedly reduced, the pain was minimal and the hand had recovered almost complete function.

DISCUSSION

The Catfish *Pangasius sutchi* is a popular freshwater fish served as food in Malaysia. In Bangladesh, Indonesia (Borneo and Java), India and Thailand, it shares the same name (Mohsin and Ambak, 1983). This species has an elongated body without scales, a flattened head with small eyes, barbells (whiskers), and the presence of stout spines in the dorsal and pectoral fins, sometimes together with a protective covering of bony plates (Mohsin and Ambak, 1983).

Pangasius sutchi is one of a few freshwater fish known to be venomous. The venom in the dorsal and pectoral spines may cause a painful sting. The venom and toxins induce hemolysis, dermonecrosis, vasospasm and is edema-promoting (Mann and Werntz, 1991).

Generally, catfish stings are innocuous. It is an uncommon injury among fish handlers with low morbidity (Mann and Werntz, 1991). The possible complications include tendon and nerve damage, anaphylaxis, cellulitis, abscess formation, tissue necrosis, and even amputation (Baack *et al*, 1991; Mann and Werntz, 1991; Mckinstry, 1993). Mckinstry (1993) reported a death caused by severe infection after being stung by a catfish. He also reported seven cases of embedded barbs. None had an injury like our case. This is the first reported case of radial artery injury caused by a catfish spine sting.

Infection is a known complication of embedded foreign bodies and penetrating injuries. The organisms that usually cause catfish spine-related infections include *Vibrio* spp, *Pseudomonas* spp, *Aeromonas hydrophila*, Enterobacteriaceae, and human skin flora. Patients with underlying liver disease or chronic diseases, such as diabetes mellitus, and immunocompromised individuals are at higher risk of severe infection; *Vibrio* and *Aeromonas* spp are usually the responsible organisms (Murphey *et al*, 1992).

Antibiotics are the mainstay of treatment after sustaining a water-associated wound. Murphey *et al* (1992) suggested an empiric regimen for moderate to severe infections of: 1) a tetracycline and a broad-spectrum, beta-lactamase-stable beta-lactam antibiotic, or 2) a tetracycline, a beta-lactamase-stable penicillin, and an aminoglycoside. Our patient underwent thorough wound debridement and cleansing. He was treated empirically with cloxacillin orally to prevent infection and he responded well. Unfortunately in this case, blood or wound cultures and sensitivity were not taken. Further studies are needed regarding catfish toxins and determining the normal flora of native catfish as these may provide more precise guidelines for treatment of such stings, particularly in the selection of empiric antibiotics.

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