



## Foreign body reaction to the stinger of *mandi* (*Pimelodus maculatus*) simulating squamous cell carcinoma

*Reação de corpo estranho ao ferrão do mandi (Pimelodus maculatus) simulando carcinoma espinocelular*

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### ABSTRACT

Fish-related injuries (ichthyism) are common among fishermen. The mandi catfish (*Pimelodus maculatus*) is a freshwater species that uses, as a defense mechanism, the insertion of spines equipped with venom glands, characterizing an active venomous ichthyism. In a series of 200 ichthyism cases recorded in rivers and lakes across Brazil, approximately 40% were caused by mandi catfish and other catfish species. We report the case of a patient with a “nonhealing wound” on the left leg for 5 months following local trauma. The initial diagnosis of squamous cell carcinoma was later revised to a foreign body reaction caused by the spine of the mandi catfish.

**Keywords:** Foreign-Body Reaction; Wounds and Injuries; Carcinoma, Squamous Cell; Fishes, Poisonous.

### RESUMO

Acidentes com peixes (ictismo) são frequentes entre pescadores. O mandi (*Pimelodus maculatus*) é um bagre de água doce que utiliza, como mecanismo de defesa, a introdução de ferrões dotados de glândulas de peçonha, caracterizando um ictismo ativo e peçonhento. Em uma série de 200 casos de ictismo registrados em rios e lagos do Brasil, aproximadamente 40% foram provocados por mandis e bagres. Relatamos o caso de um paciente com uma “ferida que não cicatrizava” na perna esquerda há 5 meses, após trauma local. O diagnóstico inicial de carcinoma espinocelular foi posteriormente redefinido como reação de corpo estranho ao ferrão do mandi.

**Palavras-chave:** Reação a Corpo Estranho; Carcinoma de Células Escamosas; Ferimentos e Lesões; Peixes Venenosos.

## Case report

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## INTRODUCTION

Fish-related accidents are common among both recreational and professional fishermen.<sup>1</sup> Known as ichthyism, these accidents can be classified as either active or passive. Venomous, or acanthotoxic, ichthyism occurs when the fish inserts a spine into the victim. This spine, typically serrated, is covered by a tegumentary sheath beneath which venom glands are located.

In Brazil, venomous fish-related injuries caused by spines located on the tail are mainly attributed to stingrays. However, there are also species with spines on the dorsal and pectoral fins, such as catfish, scorpionfish, and the toadfish (*niquim*), all marine species, as well as the *mandi* catfish, which is freshwater.<sup>2</sup>

In a series of 200 fish-related accidents documented by Haddad Junior in rivers and lakes across Brazil, approximately 40% were caused by *mandi* catfish and other catfish species.<sup>3</sup> *Pimelodus maculatus*, also known as *mandi-amarelo*, *mandi-guaçu*, *mandiwa*, *mandi-pintado*, or *mandiú*, is a freshwater catfish species belonging to the family Pimelodidae. Although literature describes it as native to the São Francisco and Paraná river basins, this species is found in nearly all Brazilian hydrographic basins.<sup>4</sup>

Clinically, lesions may range from simple skin lacerations to arterial and nerve damage, potentially leading to symptoms such as vertigo, edema, erythema, local hemorrhage, and even late manifestations such as infections.<sup>5</sup>

We report the case of a patient with a “nonhealing wound” on the left leg for 5 months following local trauma, initially diagnosed as squamous cell carcinoma (SCC), but later redefined as a foreign body reaction to the spine of *mandi* catfish.

## CASE REPORT

A 62-year-old white male patient, retired, born and residing in the city of Taubaté, state of São Paulo (SP), sought care at the Dermatology Department complaining of a “lump” on his left leg for approximately 30 to 40 days. He reported a “sting” at the site 5 months earlier, which occurred while fishing on the banks of the Paraíba do Sul River. Since then, the lesion had not healed, progressing with recurrent episodes of inflammation and, more recently, the appearance of a verrucous, friable nodule (Figure 1).

The patient had undergone two courses of systemic antibiotic therapy but was unable to recall the specific medications used. He had also undergone drainage at an urgent care facility. Because of initial clinical suspicion of SCC, with possible differential diagnoses including deep mycoses and other cutaneous granulomatous diseases, surgical excision of lesion was proposed.

During the surgical procedure, a tract leading to the subcutaneous tissue was observed. The initial nodule was excised and sent for histopathological examination, and the procedure was subsequently interrupted. The patient was referred for radiography and ultrasonography, which revealed a linear structure measuring approximately  $2.5 \times 0.2$  cm, highly echogenic, with a well-defined posterior acoustic shadow, consistent with a foreign body (Figure 2).



**FIGURE 1:** Verrucous, friable nodule partially covered by a hemorrhagic crust on the left leg

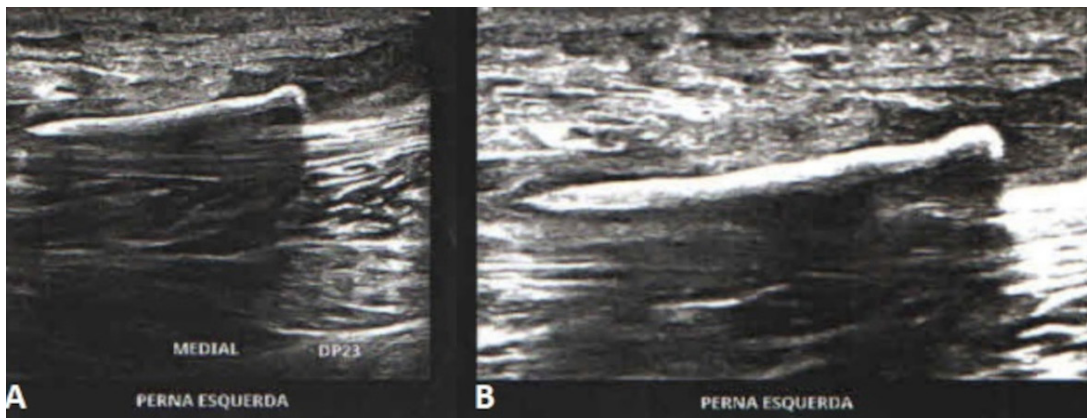
Histopathological examination revealed an exuberant chronic suppurative inflammatory process, associated with areas of old hemorrhage and scar fibrosis in the dermis and subcutaneous tissue, thereby supporting the diagnosis of a foreign body reaction and ruling out neoplasia.

A new surgical approach was performed, this time broader and deeper, guided by imaging findings. During the procedure, a serrated structure with an osseocartilaginous consistency was identified and recognized by the patient himself as the spine of a *mandi* catfish (Figures 3 and 4).

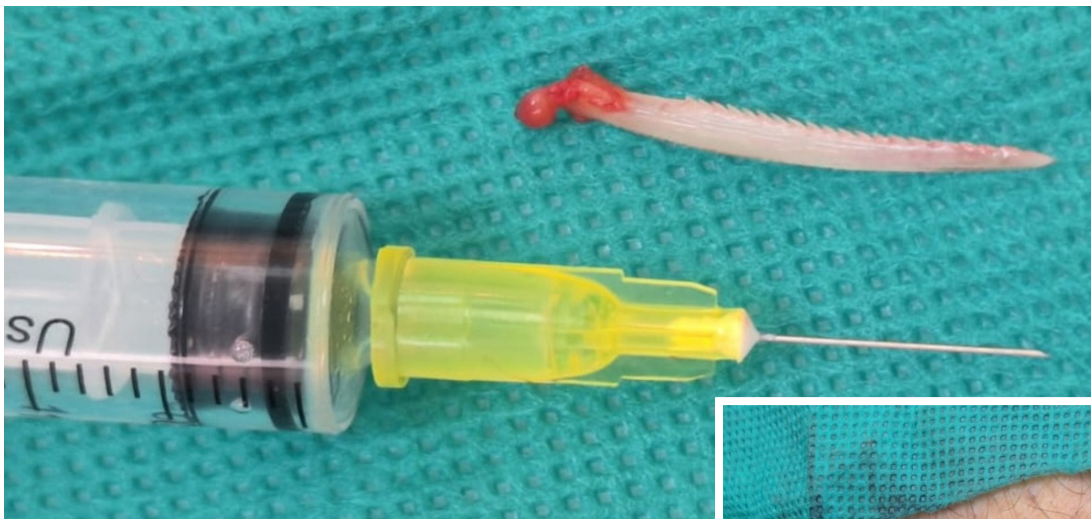
## DISCUSSION

Ichthyism is the term used to describe accidents involving marine or freshwater animals. In addition to the main forms — active (caused by stings or bites) and passive (through ingestion) — other mechanisms have also been described, such as those involving electric discharges or the entry of these animals into natural orifices of bathers.<sup>5,6</sup>

The fish involved in this case report — the *mandi* catfish — use venom inoculation as a defense mechanism and belong to a subgroup of species classified as venomous. These fish possess three serrated spines located on the dorsal fin and both pectoral



**FIGURE 2:** Ultrasound image – **A** - Linear structure measuring approximately  $2.5 \times 0.2$  cm, highly echogenic, with a well-defined posterior acoustic shadow, consistent with a foreign body. **B** - Enlarged detail



**FIGURE 3:** Spine of *Pimelodus maculatus*

fins, covered by a tegumentary sheath beneath which venom glands are located.<sup>6</sup>

Accidents involving aquatic animals are medical emergencies and represent a public health issue in Brazil, with a high incidence among fishermen due to the nature of their work. The severity of these accidents varies according to several factors, including the extent of the lesion, the affected site, secondary infections, and envenomation — this last one being more common with certain species.<sup>5</sup>

The lack of knowledge, inadequate dissemination of information, and absence of preventive measures contribute to the persistence of this condition, which stands as the main occupational hazard among fishermen. Fish-related injuries typically occur when victims step on the animals, remove hooks or harpoons, or handle them.<sup>7</sup>

In this case, the patient's inability to recall the exact moment of accident and the confusion with a sting from another venomous animal contributed to a delayed diagnosis and greater complexity in treatment. The clinical course of ichthyism vic-



**FIGURE 4:** Immediate postoperative appearance

tims can be highly variable, including inflammation, recurrent infections, chronic pain, nodules, abscesses, and granulomas — often associated with the persistence of foreign bodies.<sup>5</sup>

A foreign body granuloma is an inflammatory reaction to immunologically inert materials, which may be exogenous (e.g., suture threads, talc, cotton fibers, metals) or endogenous (e.g., keratin, cholesterol, hair fragments).<sup>8</sup>



The patient in this case presented a foreign body reaction to the spine of a *mandi* catfish, which, in its clinical course, mimicked SCC, manifesting as a verrucous, friable nodule. This scenario highlights the importance of histopathological examination for diagnostic clarification.

Since cutaneous lesions caused by ichthyism can mimic various other dermatoses and present in different forms,<sup>4</sup> this case report emphasizes the importance of persistence in diag-

nostic investigation and the critical role of the physician in conducting a thorough medical history and physical examination. Among the differential diagnoses, the local epidemiology and characteristics of the population being treated must be included.

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