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- TECHNICAL NOTE-

First clinical case of the venomous Lessepsian migrant fish *Plotosus lineatus* in the Iskenderun Bay, the Northeastern Mediterranean Sea

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Abstract

Venomous characteristics of *Plotosus lineatus* can cause some allergic reactions in human. The striped eel catfish has potential risks due to its venomous characteristics tough its stings are often result in severe pain and other health problems. The present study reports a first sting injury case of the venomous *P. lineatus* on fisherman who hold the *P. lineatus* on the deck of trawl in the Iskenderun Bay, northeastern Mediterranean.

Keywords:
Plotosus lineatus, lessepsian invasion, venomous, sting injury case, the Mediterranean Sea.

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Introduction

The biodiversity in the eastern Mediterranean has been considerably altered since the opening of the Suez Canal in 1869 (Turan et al., 2018). As it is known that numerous alien fish species can inflict painful specification with the dangerous stings of spines or with the complex venom glands (Cook & Zumla, 2009). Fish venoms are usually a mixtures of a high-molecular-weight heat-labile proteins with systemic toxic effect and low molecular weight amines which cause inflammatory reactions. The chemical nature of catfish's venoms is poorly known, though the loss of toxicity are seen when these venoms are subjected to common denaturing agents suggests that proteins constitute the major toxic component of these secretions (Church & Hodgson, 2002). There are several venomous and poisonous Lessepsian fish that have invaded to the Mediterranean Sea belong to the families Siganidae, Tetraodontidae, Dasyatidae, Scorpanidae, Plotosidae,

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Ostraciidae, Synanceiidae and Ariidae (Gweta et al., 2008; Bentur et al., 2008). For instance, clinical poisoning after consumption of the Lessepsian migrants *Siganus luridus* and *Siganus rivulatus* has been reported (Herzberg, 1973; Raikhlin-Eisenkraft et al., 2002), and *Lagocephalus sceleratus* (Bentur et al., 2008)

Striped eel catfish *Plotosus lineatus* (Actinopterygii, Plotosidae) was reported from Iskenderun Bay in the northeastern Mediterranean Sea Turkey (Dogdu et al., 2016). Striped eel catfish is an inshore species, inhabiting sea sandy bottom, rocks and coral reefs, in depths of 20–50 m. The dorsal and pectoral fins' spines and dermal tissues contains toxins which are a potential threat for swimmers, fishermen, divers and public (Golani, 2002; Matsumura et al., 2004; Bentur et al., 2018). Shiomi et al. (1986) reported that the skin secretion of *P. lineatus* contains at least one hemolysin, two lethal factors and two oedema-forming factors but still little is known about the chemical properties of the venom. In humans, the primary symptoms are severe pain and swelling at the site of envenomation, and also fatalities were reported in some cases (Halstead, 1978).

Some human injury cases of *Plotosus lineatus* stings were reported only from Iran and Israel (Dorooshi, 2012; Bentur et al., 2018). The present study reports a first sting injury case of *P. lineatus* in the Iskenderun Bay, northeastern Mediterranean Sea. The stings injury case was occurred on fisherman who hold the *P. lineatus* on the deck of the trawl (Figure 1).

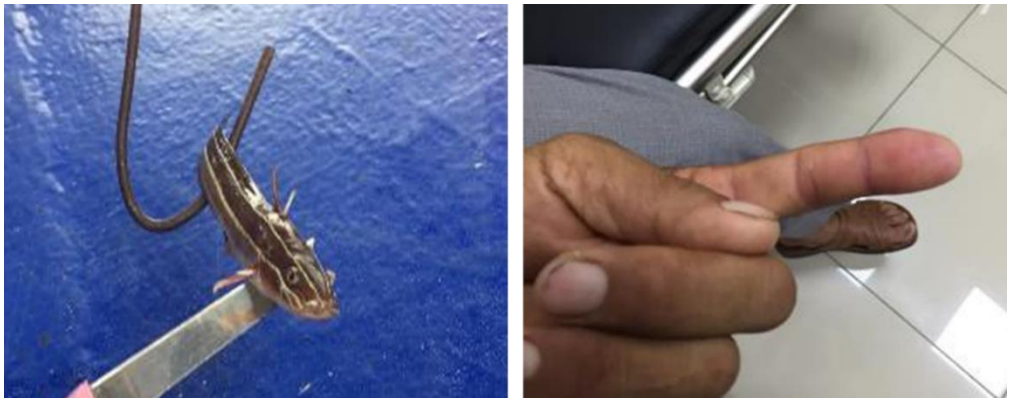

Figure 1. *P. lineatus* captured on the deck of trawl in the Iskenderun Bay, the Northeastern Mediterranean Sea (left picture) and the trawler' forefinger having been medicated in the hospital (right picture).

The fisherman's sting injury was on the left-hand forefinger's. After severe pain, fishermen called the Nature and Science Society call number (www.dogavebilim.com) and was advised that in such cases the venom could be inactivated by the heat-shock with approximately 42°C hot water as a first-aid application. After the heat-schock, trawl boat reached to harbour at 1.5 hours later. The fisherman who suffered from great pain was immediately taken to the nearest emergency service of hospital. His blood pressure was at the normal level, and he was diagnosed with soft tissue injury and allergy. This is the first sting injury case report of a fisherman contacted with the venomous Lessepsian migrant fish *P. lineatus* in the Iskenderun Bay, the Northeastern Mediterranean Sea.

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Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.

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