



**HAL**  
open science

## Challenging foreign body surgery: residual needlefish jaws

Youssef El Ouadih, Nathalie Pham Dang, Dmitrii Groza, Abdoulaye Thiombiano, Toufic Khalil, Jean Louis Kemeny, Jean Jacques Lemaire

► **To cite this version:**

Youssef El Ouadih, Nathalie Pham Dang, Dmitrii Groza, Abdoulaye Thiombiano, Toufic Khalil, et al.. Challenging foreign body surgery: residual needlefish jaws. *British Journal of Neurosurgery*, 2020, pp.1-3. 10.1080/02688697.2020.1836325 . hal-03091253

**HAL Id: hal-03091253**

**<https://hal.science/hal-03091253>**

Submitted on 1 May 2021

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

## **CHALLENGING FOREIGN BODY SURGERY:**

### **RESIDUAL NEEDLEFISH JAWS**

Authors :

Y El Ouadih, N Pham Dang, D Groza, A Thiombiano, T Khalil, JL Kemeny , JJ Lemaire

**Key Words:** Foreign body, Needlefish, Navigation

**Abstract word count:** 49

**Text word count:** 348

**Number of references:** 12

**Number of figures:** 2

**Number of tables:** 0

**Number of videos:** 0

## **Abstract**

We report a case of a needlefish jaws retained near the C5-C6 joint that was associated with chronic pain and inflammation and seen confirmed by FDG-PET scan. Two unsuccessful surgeries using an anterior approach were complicated by vascular and nerve injuries. We used image-guided surgery with a posterior approach.

A 65-year-old male was swimming in the Seychelles and was bitten by a needlefish very close to the beach. He experienced cervical pain. The anchored fish (about 40 cm ) was manually removed but X-rays showed retained distal segments of the jaws, on the left, lateral to the C5-C6 joint (Fig 1A). He was given penicillin and clavulanic acid. The residual jaws measured about 20-mm. On the patient's return to France two weeks later, two exploratory anterior cervicotomies along the penetrating wound were performed by a plastic surgery team and then by ENT with X-ray guidance failed to find the foreign body and were stopped after neck wound complications (jugular and upper branches of brachial plexus). One year later, he was referred for persistent pain. Because of the risk of infection and migration he was operated with image-guided surgery. FDG PET-Scan showed the chronic inflammatory process around the foreign body (Fig 1B; red cross). A posterior cervical approach with navigation (Brainlab, Iplan Stereotaxy 3.0.2, Germany) was adopted. The foreign material was made up of two main fragments (Fig 2 A, B) removed, under microscopy, along with whitish granulomatous tissue. They corresponded to the two distal jaws, each made up of two interlocked pieces (Fig 2B). The inflammatory connective tissue (black circle) made up of mononuclear elements such as lymphocytes and plasm cells (white arrow) and neighbored by multi-nuclear macrophages (black arrow) (right image) was visible in the jaw (bone, white circle; left image) (Fig 2C). Four months later, clinical and imaging controls were satisfactory and the patient was asymptomatic.

Needlefish are found in temperate and tropical waters<sup>1</sup>. The family includes some 60 species, with a length ranging from 0.4 meters to more than 1.5 meters<sup>2</sup>. Needlefish can speed up to 64 km/hour out of the water<sup>3</sup>. Most human injuries have been reported from Oceania, but also on

the coasts of Portugal<sup>4</sup>, the Mediterranean basin<sup>5</sup>, and the Red Sea<sup>6</sup>. Our case was the first reported in the Seychelles.

The most frequent pathogen found secondary to penetrating fish bone injuries is *Staphylococcus Aureus*<sup>9</sup>, legitimating the antibioprohylaxis choice in our case.

### **References:**

- 1 Auerbach PS. Hazardous marine animals. *Emerg Med Clin North Am.* 1984 Aug; **2**: 531–544.
- 2 Needlefish | fish [Internet]. Encyclopedia Britannica. [cited 2020 Apr 12]. Available from: <https://www.britannica.com/animal/needlefish>
- 3 Barss PG. Injuries caused by garfish in Papua New Guinea. *Br Med J (Clin Res Ed).* 1982 Jan 9; **284**: 77–79.
- 4 Kerkhoffs GMMJ. Surfer wipe out by predator fish. *British Journal of Sports Medicine.* 2003 Dec 1; **37**: 537–539.
- 5 Ebner Y, Golani D, Ophir D, Finkelstein Y. Penetrating injury of the maxilla by needlefish jaws. *J Craniomaxillofac Surg.* 2009 Jun; **37**: 235–238.
- 6 Wolf M, Faibel M, Leventon G, Kronenberg J, Bendet E. Penetrating cervical injury caused by a needlefish. *Ann Otol Rhinol Laryngol.* 1995 Mar; **104**: 248–250.
- 7 Halaas GW. Management of foreign bodies in the skin. *Am Fam Physician.* 2007 Sep 1; **76**: 683–688.
- 8 Poluri A, Singh B, Sperling N, Har-El G, Lucente FE. Retropharyngeal abscess secondary to penetrating foreign bodies. *J Craniomaxillofac Surg.* 2000 Aug; **28**: 243–246.
- 9 Strover RM. Hand infections secondary to fish bone injuries. *Ann R Coll Surg Engl.* 1994 Sep; **76**: 353.
- 10 Kum C, Chang JR, Gruener AM, McCulley TJ. Nonsurgical Management of Retained Needlefish Jaw. *J Neuroophthalmol.* 2018 Jun; **38**: 190–191.
- 11 Bumm K, Bohr C, Bozzato A, Wurm J. [Soft tissue navigation and image-guided removal of foreign bodies in head and neck surgery]. *HNO.* 2009 Oct; **57**: 1016–1022.
- 12 Siessegger M, Mischkowski RA, Schneider BT, Krug B, Klesper B, Zöllner JE. Image guided surgical navigation for removal of foreign bodies in the head and neck. *J Craniomaxillofac Surg.* 2001 Dec; **29**: 321–325.

**Figure captions:**

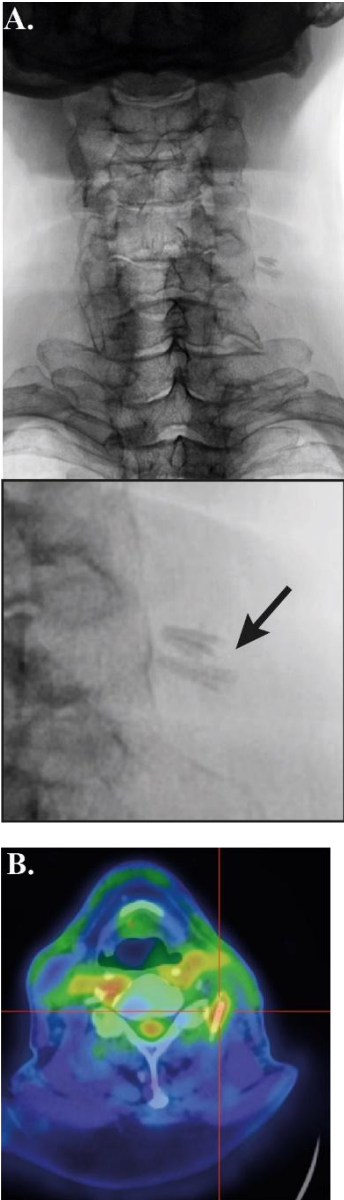
Figure 1: Imaging

- A. Frontal X-ray showing the foreign body (inlay, zoom in; black arrow).
- B. Axial FDG PET-scan slice.
- C. 3D surgical planning (posterior left view; reconstruction from CT-scan) showing the foreign body (white arrow) and the surgical route along the lamina toward the C5-C6 joint.

Figure 2: Foreign Body

- A. The needlefish and the missing distal jaws.
- B. One jaw is made up of two interlocked parts, the inner (top) and the outer (bottom).
- C. Histological preparation (hematein-eosin-saffron staining).

Figure 1



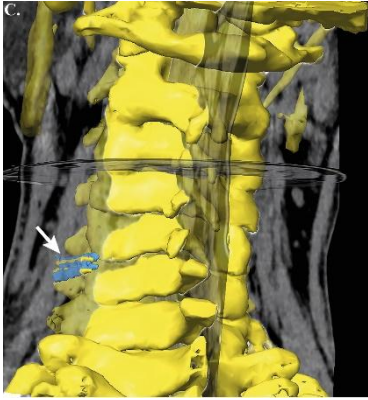


Figure 2:

