CHALLENGING FOREIGN BODY SURGERY:

RESIDUAL NEEDLEFISH JAWS

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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[1]. The family includes some 60 species, with a length ranging from 0.4 meters to more than 1.5 meters[2]. Needlefish can speed up to 64 km/hour out of the water[3]. Most human injuries have been reported from Oceania, but also on

the coasts of Portugal[4], the Mediterranean basin[5], and the Red Sea[6]. Our case was the first reported in the Seychelles.

The most frequent pathogen found secondary to penetrating fish bone injuries is *Staphylococcus Aureus*[9], legitimating the antibioprophylaxis choice in our case.

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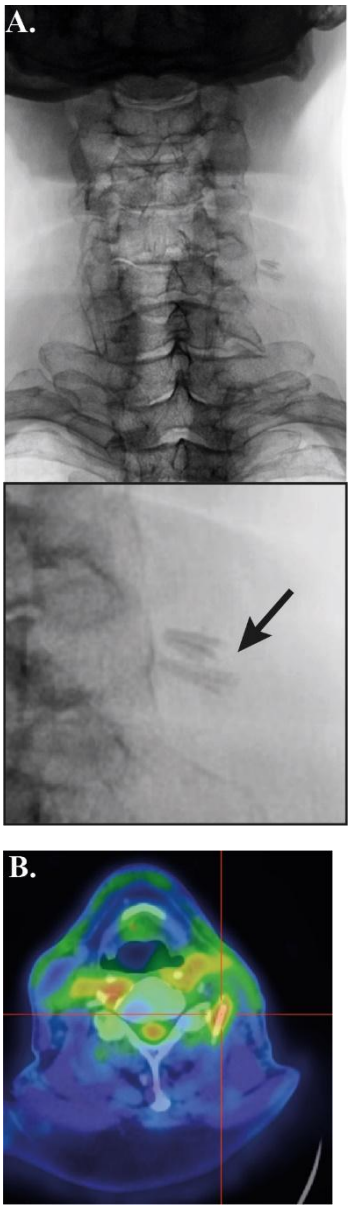
Figure 1: Imaging

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



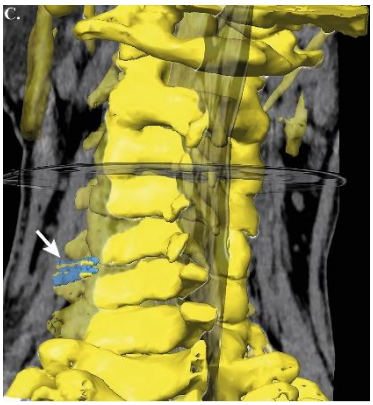


Figure 2:

