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Short communication

CAUDAL FIN DEFORMITY IN LONGFIN MULLET, *Moolgarda pedaraki* (VALENCIEENES, 1836) (PISCES: MUGILLIDAE)

L.A. Jaward, J.M. AL-Mamry[1]

Summary

A malformation of caudal fin in longfin mullet, *Moolgarda pedaraki* is described and compared with normal specimens. The causative factors of this anomaly were discussed.

Key words: *Moolgarda pedaraki*; Malformation; X-ray image; Oman.

INTRODUCTION

Morphological deformities in fish in general and skeletal abnormalities in particular have been widely described and reviewed (Tutman et al., 2000; Jawad and Hosie, 2007; Jawad and Öktoner 2007; Jawad et al., 2007; Al-Mamry et al., 2010). In wild fishes, they are used as indicators of water pollution because of high incidence in polluted areas (Bengtsson, 1979). Fin anomalies in general are extremely well documented in both wild and reared fish (Divanach et al., 1996). In aquaculture they involve absence of the tail, or partial tail (single-lobed), double or triple tail or lobes (Dunham et al., 1991). In the wild, they involve absence of the tail (Honma, 1990; 1994), compression (Lemly, 1993) or partial tail incidence which is very rare in wild fish populations (Divananch et al., 1996; Jawad et al., 2010). Longfin mullet, *Moolgarda pedaraki* (Valencieenes, 1836) from family Mugilidae is a benthopelagic marine species that lives in Omani waters both in the Sea of Oman and the Arabian Sea coasts of Oman in particular and in the Indo-Pacific region (Froese and Pauly, 2010). In these areas, it has high local economical importance (Randall, 1995). It is exposed to many physical and chemical factors variations, from temperature to pollution (Araghi, 2010). This study describes a case of tail deformity in one specimen of the longfin mullet, *M. pedaraki* caught in coastal polluted waters of Oman.

1 L.A. Jaward, e-mail: laith_jawad@hotmail.com (corresponding author) and J.M. AL-Mamry, Marine Science and Fisheries Centre, Ministry of Fisheries Wealth, P.O. Box 427, Postal Code 100, Muscat, Sultanate of Oman

MATERIAL AND METHODS

Three specimens of *M. pedaraki* showing complete deformation of the caudal fin (TL 430-435 mm, SL 370-375 mm, age 2^{+}) were obtained from fish market at Muscat City, Sultanate of Oman in April 2010. A normal specimen (TL 450 mm, SL 395 mm, age 2^{+}), but with slight deformation of the 2^{nd} fin ray of the 2^{nd} dorsal fin was obtained from the same locality for comparison (Figure 1 a-d). Fish landing in Muscat fish market mainly originated from the Sea of Oman. Age was determined using fish scales viewed under a light microscope. The specimens were radiographed with ordinary X-rays to interpret any other skeletal anomaly (Figure 2).

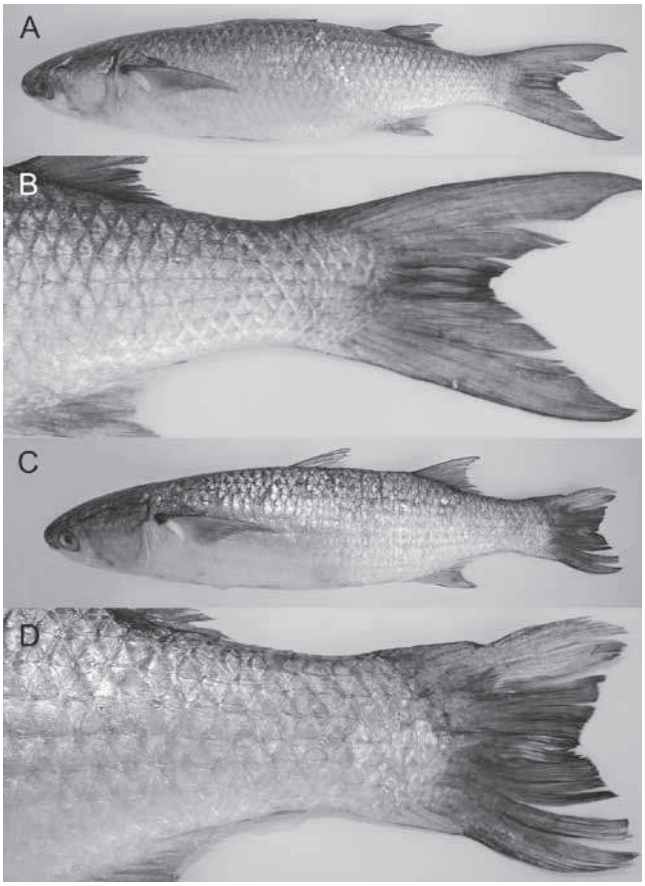

Figure 1. ***a:*** *Normal fish specimen of* Moolgarda pedaraki *(TL 450 mm, SL 395 mm).* ***b:*** *Tail of the normal fish specimen.* ***C.*** *Abnormal fish specimen (TL 430 mm, SL 370 mm).* ***d.*** *Tail of the abnormal fish specimen.*

Slika 1.: ***a:*** *Tipičan primjerak ribe* Moolgarda pedaraki *(TL 450 mm, SL 395 mm);* ***b:*** *Repna peraja tipičnog primjerka;* ***c:*** *Deformirani primjerak ribe (TL 430 mm, SL 370 mm);* ***d:*** *Repna peraja deformiranog primjerka*

RESULTS AND DISCUSSION

Caudal fin deformity was visible on the fish body, with undulation of the caudal fin rays when compared with the normal specimen (Figure 1c, d). Severe deformation of the branched and unbranched caudal fin rays with most of the rays showing undulation. Shortening of the caudal fin rays is the characteristic of the deformed caudal fin. The upper lobe of the caudal fin is shown to be more deformed than the lower lobe. X-ray did not show other skeletal deformities, but minor anomalies such as deformation of the body scales at the base of the caudal fin are evident (Figure 2). The specimen that showed normal caudal fin also showed minor abnormality as undulation of the 2nd fin ray of the 2nd dorsal fin (Figure 1 a, b).

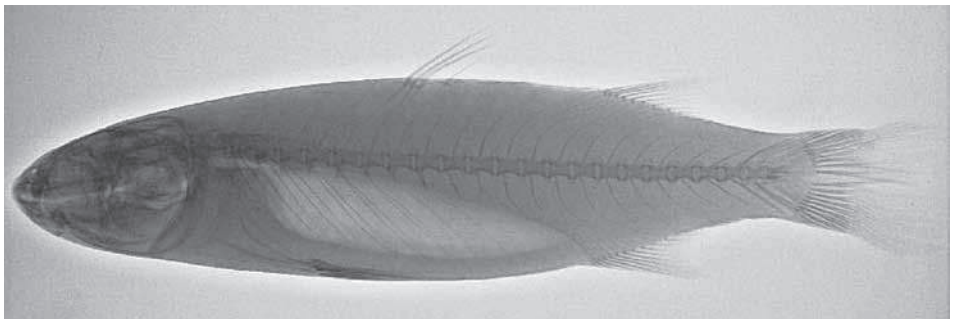

Figure 2. Radiograph of the abnormal specimen of Moolgarda pedaraki *(TL 430 mm, SL 370 mm)*

Slika 2. Radiogram deformiranog primjerka Moolgarda pedaraki *(TL 430 mm, SL 370 mm)*

Caudal fin has an important role in manoeuvring and steering functions of fish; therefore it must be constructed so as to cope with hydrodynamic stresses with the least possible expenditure of energy (Boglione et al., 1993).Any anomaly in the caudal fin will impair the flexibility of the tail, so hindering the performance of the fish (including the capacity to get food and to avoid predators).

Sažetak

DEFORMACIJA KAUDALNE PERAJE DUGOPERAJNOG CIPLA, *Moolgarda pedaraki* (VALENCIEENES, 1836) (PISCES: MUGILLIDAE)

L.A. Jaward, J.M. AL-Mamry[1]

U radu je opisana defromacija kaudalne peraje kod dugoperajnog cipla *Moolgarda pedaraki* u usporedbi s normalnim primjercima. Ispitani su uzročnici ove anomalije.

Ključne riječi*:* *Moolgarda pedaraki*, deformacija, slika X-zrakama, Oman.

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1 L.A. Jaward, e-mail: laith_jawad@hotmail.com (corresponding author) and J.M. AL-Mamry, Marine Science and Fisheries Centre, Ministry of Fisheries Wealth, P.O. Box 427, Postal Code 100, Muscat, Sultanate of Oman

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