

Figure 2 - *Chelonia 5* Chop wound lesion with 15 cm in length.

Source: Isabela Teixeira Arduini (2016).

**Discussion and conclusion:** External traumatic injuries were common in *Chelonia mydas* who were sent to Tamar Project in Ubatuba; it is estimated that man-made objects present in the marine environment are mainly responsible for the external injuries, that can lead to starvation and death; most of them were found drowning. In nature, large predatory fish, such as sharks, and large fish may predate juvenile turtles. The death of juvenile may represent an important environmental impact, since it compromises the long-term reproduction; *Chelonia* take from 20-30 years to reach the reproductive age. A higher number of injured animals were observed in the months of December and January (data not shown), which can be justified by the fact that in these months there are more tourists in the region, with a higher frequency of fishing and vessels around the animals feeding areas, which favors the occurrence of accidents. The increase of research in this area of knowledge is of great importance.

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## GUNSHOT IN A YELLOW-HEADED CARACARA (MIVALGO CHIMACHIMA): CASE REPORT

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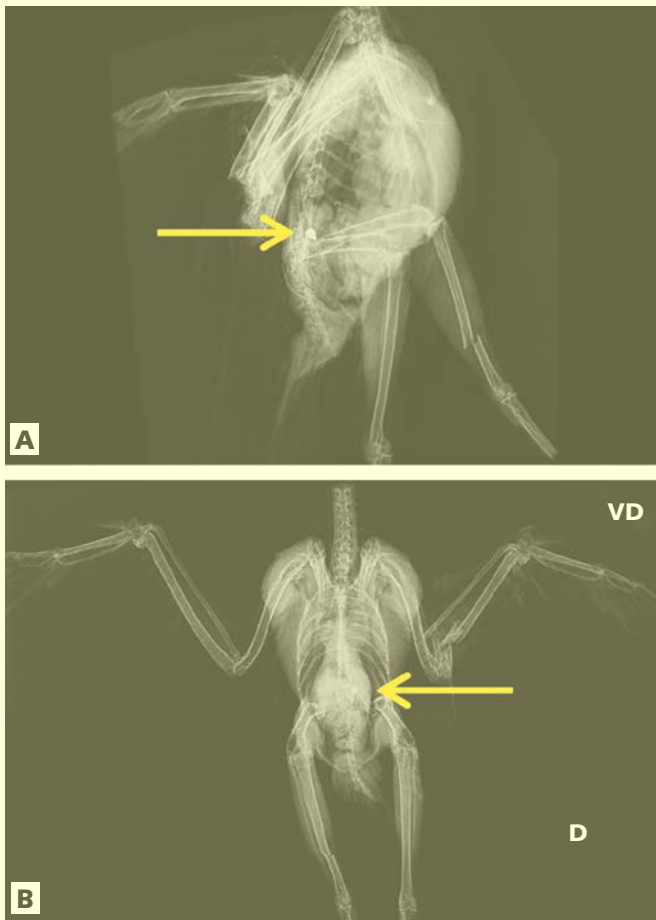
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**Introduction:** Anthropogenic injuries have been frequently described in raptorial, including habitat destruction, pollution, car collisions, structure impacts, and poaching by trap or gunshot. (PUNCH, 2001). In Brazil, hunting or trapping of any free-living animal, including birds of prey species is forbidden by the law number 5.197, from January 3<sup>th</sup>, 1967 (INSTITUTO CHICO MENDES DE CONSERVAÇÃO DA BIODIVERSIDADE, 2008) and by the art. 29 of the Environmental Crimes, Law 9.605/98 (BRASIL, 1998). In spite of this law, it is frequent in the wild animal clinic to receive birds with fractures and internal organ damage caused by firearm projectiles. There are several studies in other countries which demonstrate that hunting is an important factor causing mortality of these animals, especially raptors (DEEM; TERRELL; FORRESTER, 1998; PUNCH,

2001; WENDEL; SLEEMAN; KRATZ, 2002). This case report is the description of multiple fractures caused by gunshot in a Yellow-headed caracara (*Mivalgo chimachima*).

**Case report:** A free-living, adult, male *Mivalgo chimachima*, with 302gr was referred to the Wildlife Medicine Service of Unesp – Jaboticabal after being seen by civilians falling near a stone-quarry in Itápolis city, São Paulo State, Brazil. At physical exam the animal was alert, with severe dehydration, normal temperature, hypocorous mucosa exposure fracture in right radioulna with massive blood lost and left tibiotarso fracture. Animal was medicated with tramadol (5mg/Kg, IM), meloxicam (0,2mg/Kg, SC), enrofloxacin (15mg/Kg, SC) and fluid therapy (60ml/kg Lactate Ringer). Radiographs was performed and showed transversal fracture in left tibiotarso, comminuted fracture in right radio-ulna and presence of projectile in coelomic cavity (Figure 1).

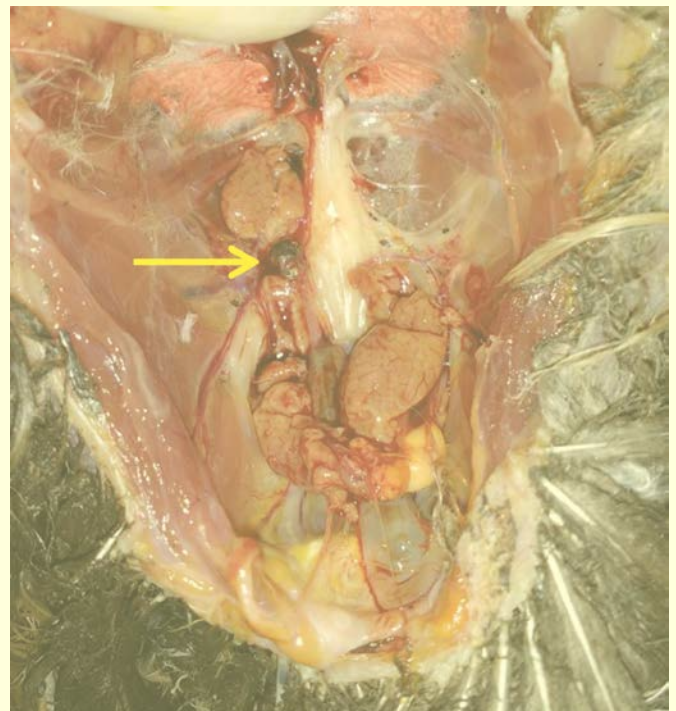


**Figure 1** - Radiograph image of Yellow-headed caracara (*Mivalgo chimachima*). (A) laterolateral positioning. Transversal fracture in left tibiotarso and presence of projectile (arrow) in coelomic cavity. (B) Ventrodorsal positioning. Transversal fracture in left tibiotarso,

comminuted fracture in right radio-ulna and presence of projectile (arrow) in coelomic cavity.

Source: Serviço de Diagnóstico por Imagem, Faculdade de Ciências Agrárias e Veterinárias (FCAV) – Unesp Jaboticabal.

Based on clinical and radiographic findings it was decided to perform osteosynthesis with intramedullary pin in radioulna and tibiotarso under inhalator anesthesia. The animal recovery from anesthesia, but died in the next day. The necropsy revealed pale organs probably due to the extensive blood lost and presence of a projectile between the cranial and medial poles of right kidney, with few clots around the projectile (Figure 2).



**Figure 2** - Presence of projectile (arrow) in coelomic cavity between the cranial and medial poles of right kidney, with few clots around the projectile.

Source: Serviço de Medicina de Animais Selvagens, FCAV – Unesp Jaboticabal.

**Discussion and conclusion:** Studies related to poaching in birds by gunshot, rate of death and their effects including heavy metal intoxication in Brazil are scars (INSTITUTO CHICO MENDES DE CONSERVAÇÃO DA BIODIVERSIDADE, 2008). In some places in Brazil, birds of prey, mainly owls, are associated with bad luck.

These fact leads to animal abuse, especially illegal hunting. Educational programs showing the environmental importance and the hole of birds of prey should be reinforced. The laws applied to these subjects must be considered and other mitigating measures in place to protect these animals should be maintained and reinforced to optimize the health of raptor populations.

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## DETECTION OF FRAUD IN CANNED TUNA

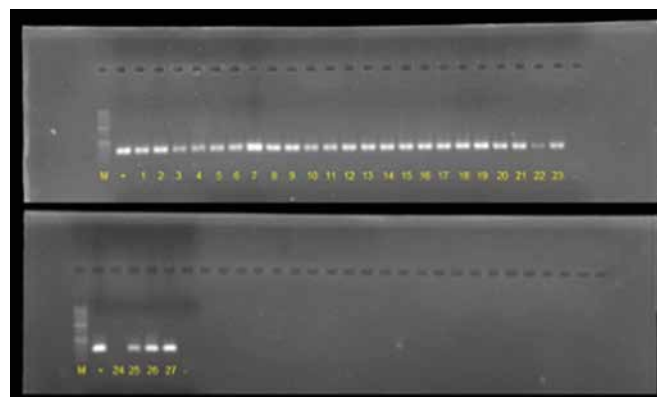
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**Introduction:** Canned tuna is defined as a product made with tuna, packaged in hermetic way, followed by sterilization to avoid contamination and multiplication by microorganisms, beyond to propitiate integrit until the end of shelf life of the product. For this

product processing, Ministério da Agricultura, Pecuária e Abastecimento (MAPA) published the Normative Instruction 46 of December 15<sup>th</sup> of 2011, which regulates the production of canned tuna in Brazil (BRASIL, 2011). Thus, fraud occurs for substitution of fish species not allowed by legislation. This study aimed standardize the detection of fraud in tuna canned by polymerase chain reaction (PCR) and real time PCR (qPCR). **Methods:** The samples were constituted of canned tuna from seven different factories, in the following presentation: solid, piece, grated, in oil, in natural, light, and in tomato sauce, comprising 27 samples. The previous treatment of the samples for PCR and qPCR were performed as described by Chapella *et al.* (2007). DNA extraction was made using Wizard<sup>®</sup> SV Genomic DNA Purification System (Promega<sup>®</sup>) kit, according to manufacturer's instructions. As internal control, we used primer for beta-actin gene designed in laboratory. **Results:** Of 27 samples analyzed, only one not amplify by PCR, showing the tuna absence (Figure 1). For qPCR 4 samples were considered as containing only tuna, 6 with low concentration of tuna, and 17 with high concentration of other kind of fish.



**Figure 1** - Product amplification of 100 bp. M: Molecular weight of 100 bp. 1-27: canned tuna. +: Positive control. -: Negative control.

Source: Personal file.

**Discussion:** In the obtained Results, only 15% of the samples were considered as containing only tuna, which elucidates fraud in the others products. Considering that the product must have credibility and guarantee the rights and food safety for consumers (BARBOSA, 2016), the method applied could be an instrument for fraud detection in canned tuna.