In Response to “Attack Upon a Bather by a Swordfish”

To the Editor:

Recently, a case of a bather injured by a billfish in shallow coastal water in southern Brazil was reported in *Wilderness & Environmental Medicine*. According to the authors, this so-called unusual attack was caused by the swordfish *Xiphias gladius* (Xiphiidae). This case was reevaluated based on the victim's interview and incorrect identification of the billfish, which was probably induced by the picture available at that time and the misleading information provided by the Lifeguard Troops.

On the morning of February 2nd, 2008, Mr Donizete Pereira (male, 1.67 m, 90 kg, 44 yr) was injured by what was believed to be a swordfish *Xiphias gladius* (Xiphiidae). The accident occurred in Matinhos, Southern Brazil, while the victim was swimming at about 15 m from the shoreline, in 1.5 m of water. The victim was attacked 3 times by the fish and suffered multiple injuries from the fish's bill, including a puncture wound on his left knee.¹

Based on the examination of a picture taken by Mr Donizete Pereira on the day of the accident, the fish that caused the accident was actually identified as a white marlin *Tetrapturus albidus* (Istiophoridae) (see Figure). Despite the fact that fishes of these families may be mistakenly identified due to the similarity of overall body shape, members of Istiophoridae can be easily differentiated from Xiphiidae by having 2 caudal keels (instead of one), very narrow pelvic fins (instead of no pelvic fins), and the dorsal fin extending over much of its body length, sometimes resembling a sail. The white marlin is an oceanic, pelagic, and highly migratory species found mainly in the mixed layer of equatorial and tropical waters of the Atlantic Ocean.² This species can reach 300 cm of total length and 93 kg of weight, and feeding habits include mostly fish and squid.^{3,4}

Hypotheses for the accident include the proximity of the fish to the beach, the stress to which the fish was submitted when threaded in shallow waters, and the victim's attempt to get closer to the animal to protect his children, who were also in the water near the fish.¹ Despite these hypotheses, definitive conclusions about the accident could not be made based on an interview by one of the authors, present with Mr Pereira during his hospital treatment. According to Mr Pereira, the beach was crowded because of the Brazilian carnival holiday, and the accident occurred while he was swimming into shallow waters, trying to get closer to the animal. Although *T. albidus* is notorious for driving its rostrum into animate and inanimate objects, using the pointed premaxilla to stun prey fish by slashing back and forth, they are considered nonaggressive fishes, as are other billfishes, and direct

Figure. The white marlin *T. albidus* that caused the injury upon a swimmer in Matinhos beach, southern Brazil.

contact with humans is very rare.⁵ Because of that, we believe that this was a single incident and definitive conclusions about the unexpected accident cannot be made without considerable speculation as to how they occurred and the motivation of the animal.

Acknowledgments

The authors would like to thank Mr Donizete Pereira for providing information on the accident as well as a photographic record. Fish identification was kindly provided by Dr Teodoro Vaske Júnior (Santa Cecília University).

Hugo Bornatowski
Programa de Pós Graduação em Zoologia
Universidade Federal do Paraná
Curitiba, PR, Brazil

Marco F. M. Corrêa, MD
*Centro de Estudos do Mar, Setor de Ciências da
 Terra, Universidade Federal do
 Paraná, Brazil*

Vinícius Abilhoa, MD
*Grupo de Pesquisas em Ictiofauna. Museu de História
 Natural Capão da Imbuia
 Curitiba, PR, Brazil*

References

1. Haddad V Jr, Figueiredo JL. Attack upon a bather by a swordfish: A case report. *Wilderness Environ Med.* 2009; 20:344–346.
2. Oliveira IM, Hazin FHV. Preliminary results on the reproductive biology of the white marlin, *Tetrapturus albidus* poey 1960, in the western equatorial Atlantic Ocean. *Collective Volume of Scientific Papers ICCAT.* 2009;60: 1738–1745.
3. Froese R, Pauly D. FishBase: World Wide Web electronic publication. (Version 01/2010). Available at: <http://www.fishbase.org>. Accessed April 11, 2011.
4. Cervigón FR, Cipriani W, Fischer L, et al. *Fichas FAO de Identificación de Especies Para los Fines de la Pesca. Guía de Campo de las Especies Comerciales Marinas y de Aguas Salobres de la Costa Septentrional de Sur América.* Rome, Italy: FAO; 1992;343:343.
5. Vaske Jr, Vooren CM, Lessa, RP. Feeding habits of four species of Istiophoridae (Pisces: Perciformes) from north-eastern Brazil. *Environ Biol Fish.* 2004;70:293–304.

In Reply to Dr Bornatowski

To the Editor:

In truth, the image used by the authors of the letter shows new aspects of the dorsal fin of the fish, aspects that we could not see in the images that the lifeguard sent us. The fish seems to be the same, but the crucial aspects are not visualized in our images and the identification as *Xiphias gladius* was the most correct prior to the new image. An experienced Brazilian zoologist (ichthyologist) located in the Museum of Zoology, São Paulo University, made the initial identification of the fish. I appreciate the authors' comments, but the main aspect of the description (the attack of a "beak" fish in unusual circumstances) is not changed by this observation. Additionally, I find it strange that the possible new identification of the fish has not been sent directly to us, which would leave us very grateful and indebted to the authors. The direct response to the journal seemed to be most important for some unknown reason.

The text of the letter that questions the conditions of the attacks does not show consistency or experience of the authors with attacks or envenomation by fish. We

obtained *personal* testimonials of the lifeguards who accompanied the first-aid care of the patient, as well as the medical annotations and testimony of the physicians who initially observed the patient—in 2 hospitals that provided care to the patient in both phases of the treatment (in the emergency room and after the surgery). The hospitals are cited in the text. This information resulted in similar statements that formed the basis for our conclusions. There is a serious flaw in the methodology of the text of the letter. The authors used only the testimony of the patient 2 years after the incident. The authors of the letter did not consider that the patient was in shock following the attack, and they, especially, did not consider the stress of the isolated animal in shallow water. We have no doubts about our conclusion, and the authors' conclusion is not supported by the data in their letter. Additionally, they do not suggest other mechanisms of attack, only question what was quoted.

Vidal Haddad Jr, MD, PhD
*Botucatu School of Medicine and Postgraduation
 Program in Zoology
 Biosciences Institute
 Univ Estadual Paulista
 São Paulo State, Brazil*

Suspension Trauma and Rhabdomyolysis

To the Editor:

I read the recent article by Dr Roger Mortimer on suspension trauma and the related case report by Dr Wharton and Dr Mortimer with great interest.^{1,2} The review article by Dr Mortimer is an excellent and thorough summary of the available evidence on this topic. I especially appreciated the fact that he outlined a reasonable approach to medical management of a victim after prolonged suspension. The suggestion that maintaining a rescued victim in an upright posture could be of benefit found its way into occupational safety recommendations some years ago and had become something akin to an "urban legend" in the caving and occupational safety communities. While recent critical reviews of the evidence have led to a clear reversal of these recommendations, the factors contributing to sudden death following prolonged suspension remain poorly understood. In these 2 articles, the authors have made a valuable contribution toward providing a more comprehensive understanding of the dangers of suspension trauma.

I would, however, propose an alternative explanation regarding one aspect of the pathophysiology proposed by the authors in the case report. They stated that rhabdomyolysis was "likely caused by deoxygenated blood in the lower limbs" as a result of prolonged suspension.²