



A Case Study of Severe Decompression Sickness in an Artisanal Fisherman in Yucatan, Mexico

Popa, Daniel MD PhD¹; Chin, Walter RN²; Huchim, Oswaldo MD³; Tec, Juan MD⁴; Grover, Ian MD^{1,5}

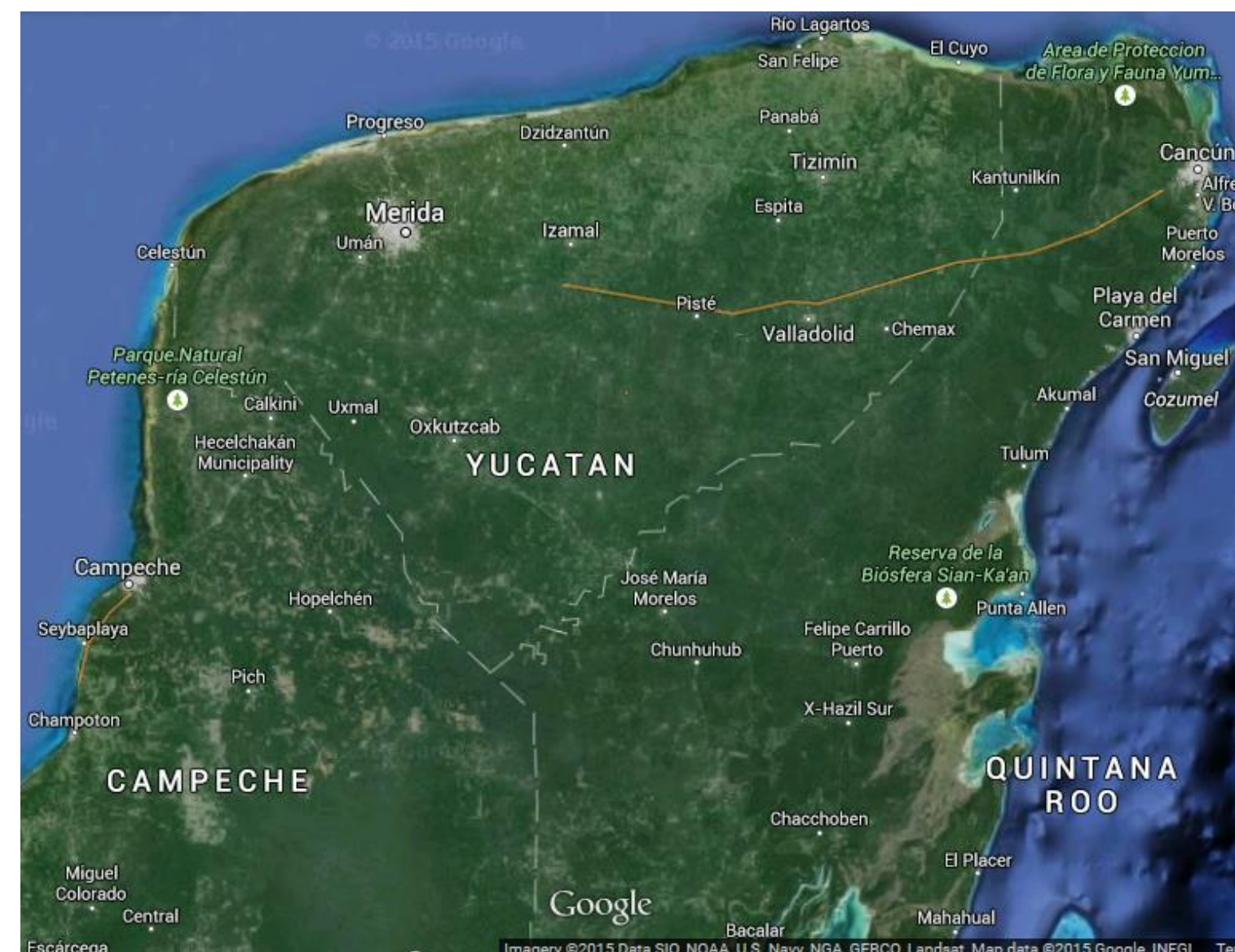
¹ Department of Emergency Medicine, UCSD. ² Division of Hyperbaric Medicine, UCLA. ³Cinvestav Unidad Merida. ⁴IMSS, Tizimin. ⁵Division of Hyperbaric Medicine, UCSD.

Introduction/Background:

Artisanal fishermen around the world dive for their livelihoods and often subject themselves to provocative dive profiles due to economic pressures. Consequently, rates of decompression sickness (DCS) are much greater than in recreational divers (~3.3% vs 0.03% respectively). Here we present the case of a surface supply diving fisherman in the Yucatan Peninsula of Mexico who suffered a significant episode of DCS.

Materials and Methods:

Data was collected via a site visit to Tizimin, Mexico, review of medical records, and interviews with the treating physician and the patient. This 32 year old male resident of El Cuyo had 10 prior episodes of decompression sickness and had been diving for over 10 years. He dove to a depth of 22 "arms lengths" (~33m, 4atm) for ~60min, ascended rapidly, and had intense vertigo, vomiting, dyspnea, bilateral leg numbness and 4/5 strength, generalized pain, and malaise. The patient was admitted to the hospital in Tizimin and underwent a prolonged course of hyperbaric oxygen (HBO) therapy. US Navy Treatment Tables 5 and 9 were used for a total of 17 treatments. Crystalloid fluids and IV ketorolac were used as adjuncts.



At left: Map of the Yucatan illustrating El Cuyo, Rio Lagartos, Tizimin, and Merida. Below at left and middle panel: Images of Rio Lagartos, a typical Yucatan fishing village. Below at right: A typical fisherman preparing bait on his boat with an air compressor



Results:

The patient's initial symptoms worsened with diaphoresis, tachycardia, and hypotension that required admission to the ICU for fluid resuscitation for 24 hours. Later, he developed more severe lower extremity weakness (1/5 strength), hyperreflexia, hypersensitivity to temperature and pressure, and temporary urinary retention that required a Foley catheter. Neurologists assessed him to have a lesion localizing to T10 with hyperreflexia bilaterally, decreased pain sensation to the T10 dermatome bilaterally, diminished vibratory sensation bilaterally, normal proprioception, 3/5 strength, and a positive Beavor's sign. MRI results demonstrated hyperintensity of the thoracic spine at T8-10, consistent with a hypoxic infarct. Upon completion of HBO therapy, the patient required additional physical therapy and is now ambulatory but no longer diving.

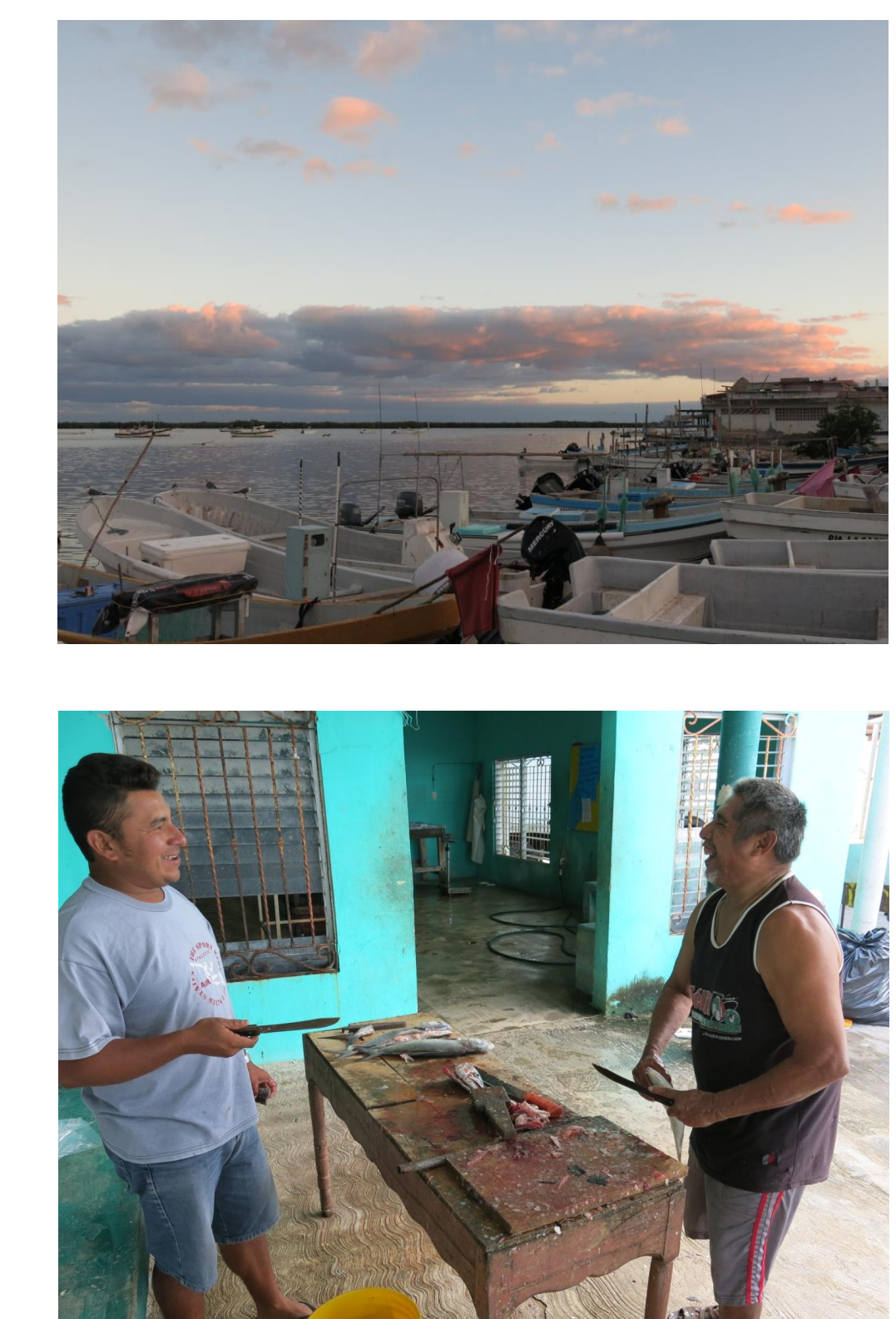


Above at left: The patient at right with Dr. Tec, the treating physician, at left. Above at right: The multiplace hyperbaric chamber in Tizimin where the patient was treated



Summary and Conclusions:

The remote locations of artisanal diving fishermen, difficult to access HBO treatment, and lost economic opportunity can lead to delayed presentation of DCS in the Tizimin area. The case presented here highlights the provocative dive profiles of these diving fishermen and the potential for future intervention. Despite challenging conditions, this patient's therapy resulted in a good outcome.



Clockwise from bottom left: The central plaza in Tizimin. A typical, improvised compressor set up with hose extension to separate intake from exhaust to minimize carbon monoxide poisoning. The fishing docks of Rio Lagartos. Sunset out to sea. The hospital in Tizimin which houses the hyperbaric chamber where the patient underwent treatment and was hospitalized. Fishermen prepare bait at a Rio Lagartos fishing cooperative.

Acknowledgements:

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