

High incidence of the congenital umbilical hernia in the Adriatic bottlenose dolphins (*Tursiops truncatus*)

Tomislav Gomerčić^{1,4}, Martina Đuras Gomerčić², Hrvoje Lucić², Ana Galov³, Darinka Škrtić², Snježana Ćurković², Snježana Vuković², Hrvoje Gomerčić²

¹Department of Biology, Faculty of Veterinary Medicine, University of Zagreb, Heinzelova 55, Zagreb, Croatia

²Department of Anatomy, Histology and Embryology, Faculty of Veterinary Medicine, University of Zagreb, Heinzelova 55, Zagreb, Croatia

³Department of Animal Physiology, Faculty of Science, University of Zagreb, Rooseveltov trg 6, Zagreb, Croatia

⁴Corresponding author (e-mail: tomislav.gomercic@vef.hr)

Introduction

Congenital umbilical hernia:

- malformation of ventral abdominal wall of animals and humans
- in terrestrial species such malformation causes death of the individual intrauterinally or soon after birth
- in humans: the congenital umbilical hernia appears in 3.5 out of 10,000 cases of normal births
- in literature: there are no data on the incidence of this malformation in the bottlenose dolphins

Bottlenose dolphin (*Tursiops truncatus*) in the Croatian part of the Adriatic Sea

- the only resident marine mammal species
- number of animals: around 200 adult individuals and around 20 cubs
- estimated number of birth per year in polpulation: between 15 and 20 dolphin

Materials and method

- since 1990. - we examined 123 carcasses of the bottlenose dolphin found in the Croatian part of the Adriatic Sea

Results and discussion

- congenital umbilical hernia was found in 13 cases:
 - 5 fetuses found in the uteruses of dead mothers or aborted fetuses
 - 8 were born alive and lived for various periods of time

No	Sex	Date	Latitude	Longitude	Body mass (kg)	Animal length (cm)
9	Female	26.5.1994	44,863467	14,001892	9,1	107
18	Male	2.8.1997	44,816200	14,340064	13,0	125
46	Female	3.7.2000	44,794444	14,366667	23,7	122
110	Male	26.10.2003	43,355983	16,949019	43,5	160
140	Female	31.7.2005	42,904967	17,187633	13,0	117
145	Female	16.11.2005	42,915833	17,401150	11,0	92
158	Male	19.2.2007	44,767500	13,925612	85,0	191
163	Female	9.6.2007	42,962781	17,111859	27,5	128
174	Female	30.9.2007	43,398298	16,860098	38,0	146
175	Female	5.10.2007	43,169100	17,190139	47,0	162
187	Male	1.6.2008	45,169167	14,305556	22,5	128
189	Female	11.6.2008	44,117500	15,220556	8,0	99
191	Male	7.7.2008	45,382778	13,535833	47,5	183

-estimated total number of births of bottlenose dolphins in Croatian part of the Adriatic Sea since 1990 was between 270 and 360

-calculation: congenital umbilical hernia appears in between 361 and 482 out of 10,000 cases of normal births of bottlenose dolphins in the Adriatic

-congenital umbilical hernia in the Adriatic bottlenose dolphins is more than 100 times higher than that recorded in humans

Wo do not know

- cause of such high incidence in the bottlenose dolphins
- whether such high incidence is found only in the Adriatic bottlenose dolphin population, or it is inherent to the bottlenose dolphin species

Future goals

- test the hypothesis of the genetic basis of this malformation
- using molecular markers - determining a degree of relatedness among affected animals



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