

SHORT COMMUNICATION

Preliminary report of a conjoined bottlenose dolphin (*Tursiops truncatus*) calf stranded on the Aegean Sea coast of Turkey

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Abstract

On 4 August 2014, a male conjoined dicephalic bottlenose dolphin (*Tursiops truncatus*) calf was found dead on the beach of Dikili/İzmir, the Aegean coast of Turkey. This is the first case of conjoined cetacean reported in Turkey and the second in the Mediterranean Sea.

Keywords: Bottlenose dolphin, *Tursiops truncatus*, dicephalus, conjoined twins, Siamese twins, congenital defect, Aegean Sea

Introduction

Conjoined (Siamase) twinning is a complex congenital defect resulting from incomplete twinning (Gülbahar *et al.* 2005). It has been reported more frequently in human and domestic animals and rarely reported in marine mammals. Gonzales *et al.* (1999) reported that in small cetaceans multiple gestations occur very rarely, less than 0.5%. There have been some case reports about congenital defects, usually found in pregnant animal's necropsies, in five cetacean species; *Balaenoptera borealis* (Kawamura, 1969), *B. bonaerensis* (*B. acutorostrata*) (Zinchenko and Ivashin 1987; Nishiwaki *et al.* 2009) *Eschrichtius robustus* (Zemsky and Budylenko 1970), *Stenella coeruleoalba* (Kawamura and Kashita 1971; Kamiya *et al.* 1981) and *Tursiops truncatus* (Dabin *et al.* 2004; Cesarini *et al.* 2004; Kompanje 2001).

Case report

On 4 August 2014, dead conjoined bottlenose dolphin (*Tursiops truncatus*) twins were found stranded on Dikili/İzmir, on the Aegean coast of Turkey ($38^{\circ}56.037'N$, $26^{\circ}50.927'E$) (Figure 1). They were dicephalic, that is, one body with duplicated heads. It was learned through news reported by DHA, a Turkish news agency, on 5 August (Figure 2). The carcass was removed from the beach and buried by the local authority. On 6 August, it was recovered and a quick external examination was made. The carcass was at least a week old and decomposed quickly due to high temperature in summer. The skulls were exposed partially due to the advanced stage of decomposition. The Decomposition Condition Code was 5, according to Rowles *et al.* (2001). The carcass was brought to Istanbul for further examination.

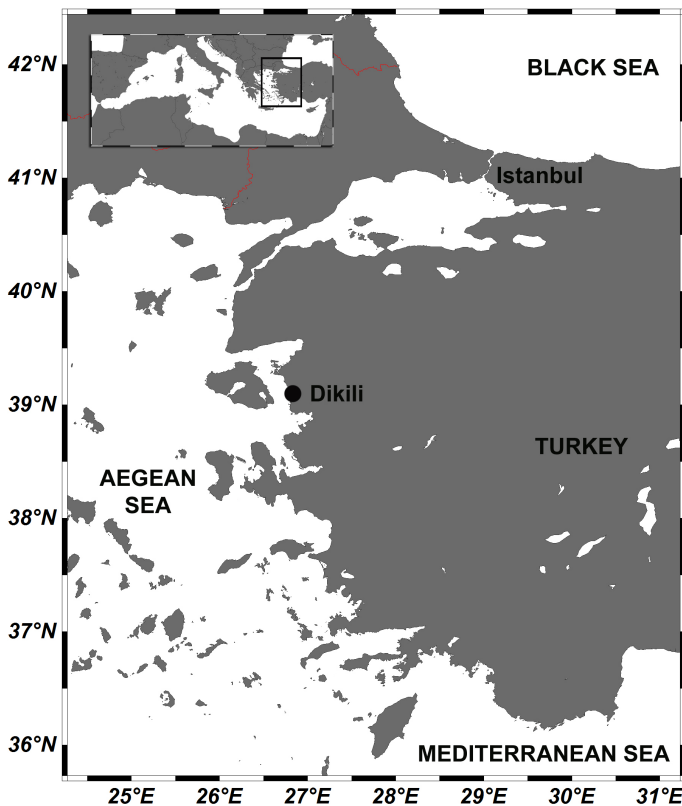


Figure 1. The location of the stranding of conjoined bottlenose dolphin twins on the Aegean coast of Turkey



Figure 2. The conjoined twins of bottlenose dolphin found on Dikili coast (S. Ekin/ DHA)

Body length (from the fluke notch to the tip of the left lower jaw) was 94 cm and one umbilical cord was still present (>40 cm). This specimen had clearly two heads and each had two eyes and one blowhole. Cranial bones were falling apart and brain was exposed. There were a pair of pectoral fins, two dorsal fins (the right one was dwarfed) and one normal shaped caudal fin. Tissue samples of skin and muscle as well as teeth were collected for studies on genetics, pollutant contamination and age determination. To stiffen and preserve for further analyses, the whole body was put into 10% formalin solution. Detailed examination will be carried out with x-ray and necropsy.

Conjoined twinning is a complication of monozygotic twinning which has very high prenatal mortality rate (Pajkrt and Jauniaux 2005). According to Kauffman *et al.* (2004), there are many factors playing important and complementary roles on formation of conjoined twins, such as teratogenic chemicals, poor diet, environmental circumstances, genetic or chromosomal factors. The reason for the present case of conjoined twinning will be investigated.

Since it is yet unrecorded and conjoined twinning typically results in death of females (mothers) or abortion of calves, it is presumed that the mature delivery of twins is unlikely (Perrin and Donovan 1984). The body length of the present specimen was within the range of body length (0.9-1.3m) of bottlenose dolphin newborns (Mead and Potter 1990). Therefore it can be considered that it had completed the fetal development. Accordingly, it may have been delivered but could not survive because it is almost impossible for conjoined twins to surface and breathe simultaneously.

There had been no more than 10 reports of conjoined cetaceans so far. The present case of Dikili twins is the first one reported from Turkey, the second

in the Mediterranean Sea after the bottlenose dolphin case from Corsica (Dabin *et al.* 2004).

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Türkiye'nin Ege Denizi kıyısında karaya vuran yavru yapışık ikiz afalina (*Tursiops truncatus*) hakkında ilk bulgular

Özet

Türkiye'nin Ege Denizi kıyısında, Dikili/İzmir kumsalında, 4 Ağustos 2014 tarihinde bir disefalik yapışık ikiz erkek afalina yavrusu ölü olarak bulundu. Bu vaka, cetacea türleri için Türkiye'de ilk, Akdeniz'de ikinci yapışık ikiz vakasıdır.

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