Dataset

3D models related to the publication: Ontogenetic variability of the intertympanic sinus distinguishes lineages within Crocodylia

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Abstract

The present 3D Dataset contains the 3D models analyzed in: *Perrichon et al. 2023. Ontogenetic variability of the intertympanic sinus distinguishes lineages within Crocodylia.*

Keywords: Crocodylia, ontogeny, sinus

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INTRODUCTION

These 3D models were used to describe and quantify the morphological variability of the intertympanic sinuses (Fig. 1) of most extant genera of Crocodylia along with the extinct genus *Voay*. The ontogenetic changes of this structure as well as the inter- and intraspecific morphological differences (Fig. 1) were used to discuss the use of endocranial sinuses for developmental, taxonomical and phylogenetic implications.

METHODS

All specimens were scanned at the level of the basicranium (see table 1 and table S1 for detailed scan parameters in SI data). All data were segmented manually or semi-automatically within AVIZO Lite version 7, 8.1, 9, and 9.5. The 3D surface models are provided in .ply format, and can therefore be opened with a wide range of freeware (we used Meshlab, Blender, 3D builder, and Morphodig)

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BIBLIOGRAPHY

Perrichon et al. 2023. Ontogenetic variability of the intertympanic sinus distinguishes lineages within Crocodylia. https://doi.org/10.1111/joa.13830

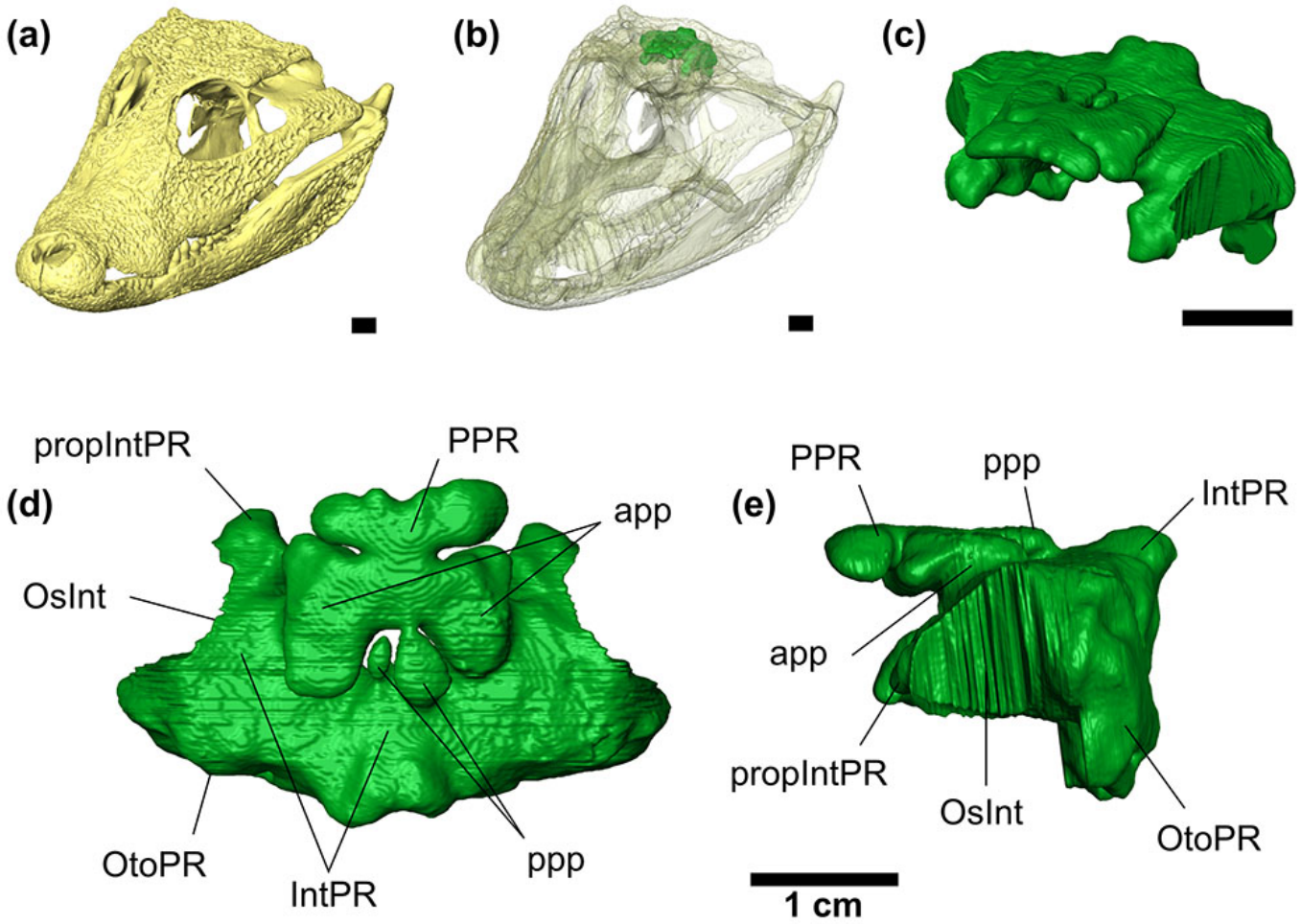

Figure 1. Intertympanic sinus system of Osteolaemus tetraspis (MHNM 9095.0). (a) Oblique view of the skull; (b) semi-transparent view of the skull showing the position of the intertympanic sinus system; intertympanic sinus system in (c) oblique (d) dorsal (e) left lateral views. Abbrevations: app, anterolateral parietal process; IntPR, intertympanic pneumatic recess; OsInt, ostium between intertympanic pneumatic recess and middle ear; OtoPR, otoccipital pneumatic recess; ppp, posteromedial parietal process; PPR, parietal pneumatic recess; PropIntPR, prootic part of intertympanic pneumatic recess. Scale bars: 1 cm.

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Inv nr.	Taxon	Collection
agSVSTUA022001	*Mecistops sp.*	ENS-Lyon
agSVSTUA022002	*Crocodylus niloticus*	ENS-Lyon
AMUZoo04721	*Mecistops sp.*	LPED
MHNLQV14	*Crocodylus sp.*	MHNL
MHNL42006506	*Crocodylus rhombifer*	MHNL
MHNL42006507	*Crocodylus rhombifer*	MHNL
MHNL50001387	*Crocodylus niloticus*	MHNL
MNHN-F.1908-5-2	*Crocodylus sp.*	MNHN
MHNL50001388	*Crocodylus palustris*	MHNL
MHNL50001389	*Crocodylus porosus*	MHNL
MHNL50001393	*Mecistops sp.*	MHNL
MHNL50001397	*Crocodylus niloticus*	MHNL
MHNL50001398	*Crocodylus porosus*	MHNL
MHNL50001405	*Crocodylus niloticus*	MHNL
MHNL50001407	*Gavialis gangeticus*	MHNL
MHNL90001850	*Crocodylus niloticus*	MHNL
MHNL90001851	*Crocodylus niloticus*	MHNL
MHNL90001855	*Crocodylus niloticus*	MHNL
MHNM.9095.0	*Osteolaemus tetraspis*	MHNM
MNHNF.1908-5	*Voay robustus*	MNHN
MZSCro040	*Osteolaemus tetraspis*	MZS
MZSCro055	*Crocodylus acutus*	MZS
MZSCro073	*Melanosuchus niger*	MZS
MZSCro083	*Mecistops sp.*	MZS
MZSCro094	*Tomistoma schlegelii*	MZS
NHMUK1846.1.7.3	*Gavialis gangeticus*	NHM
NHMUK1862.6.30.5	*Osteolaemus tetraspis*	NHM
NHMUK1873	*Gavialis gangeticus*	NHM
NHMUK1893.3.6.14	*Tomistoma schlegelii*	NHM
NHMUK1924.5.10.1	*Mecistops sp.*	NHM
NHMUKPVR36684	*Voay robustus*	NHM
NHMUKPVR36685	*Voay robustus*	NHM
UCBLFSL532077	*Crocodylus niloticus*	UCBL
UCBLZ2019-1-237	*Crocodylus porosus/siamensis*	UCBLZ
UCBLZ2019-1-236	*Osteolaemus tetraspis*	UCBLZ
UCBLZWB35	*Alligator mississipiensis*	UCBLZ
UCBLZWB41	*Crocodylus siamensis*	UCBLZ
UM1097	*Tomistoma schlegelii*	ISEM
UM2001-1756-1-434NR	*Crocodylus niloticus*	ISEM
UMN89	*Mecistops sp.*	ISEM

Table 1. Specimen list. ENS-Lyon: Ecole Normale Supérieure de Lyon, Lyon, France. LPED: Collections de Zoologie LPED Aix Marseille Université, France. MNNL: Musée des Confluences, Lyon, France. MHNM: Musée d'Histoire Naturelle de Marseille, Marseille, France. MNHN: Museum National d'Histoire Naturelle, Paris, France. MZS: Musée Zoologique de Strasbourg, Strasbourg, France. NHMUK: Natural History Museum, London, United Kingdom. UCBL: Collections de Géologie de l'Université Claude Bernard Lyon 1. UCBLZ; Collections de Zoologie de l'Université Claude Bernard Lyon 1. UM: Institut des Sciences de l'Evolution, Université de Montpellier, Montpellier, France.

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