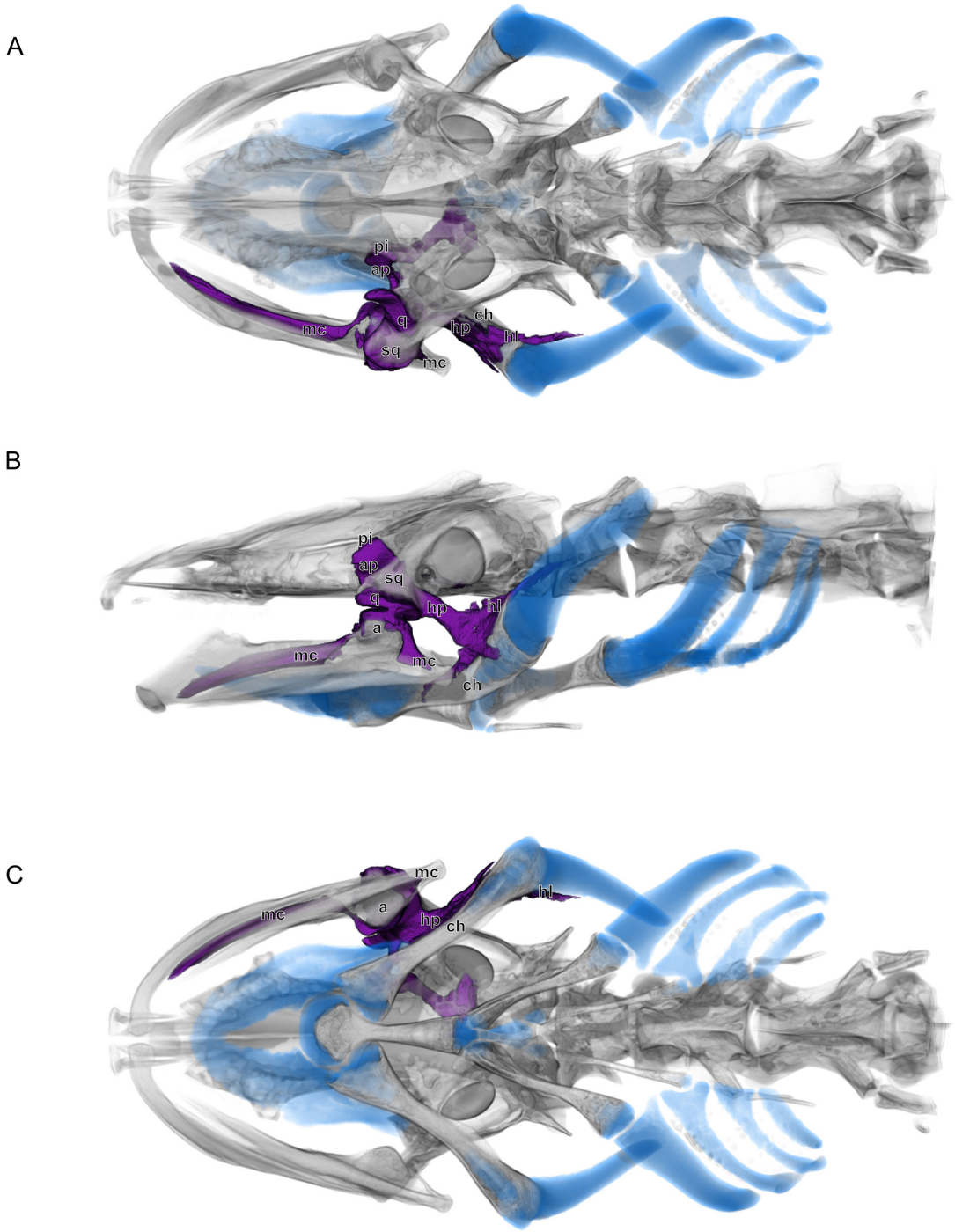

Fig. S1. Morphology of the jaw-joint-complex. A, dorsal; B, lateral and C, ventral views. Bony tissue is highlighted in grey, cartilages in blue, and the jaw-joint-complex in purple. Components of the jaw joint complex: a, articular; ap, ascending process; ch, ceratohyal; hl, hyoquadrate ligament; hp, hyoquadrate process; mc, Meckel's cartilage; pi, pila antotica; q, quadrate and sq, squamosal.

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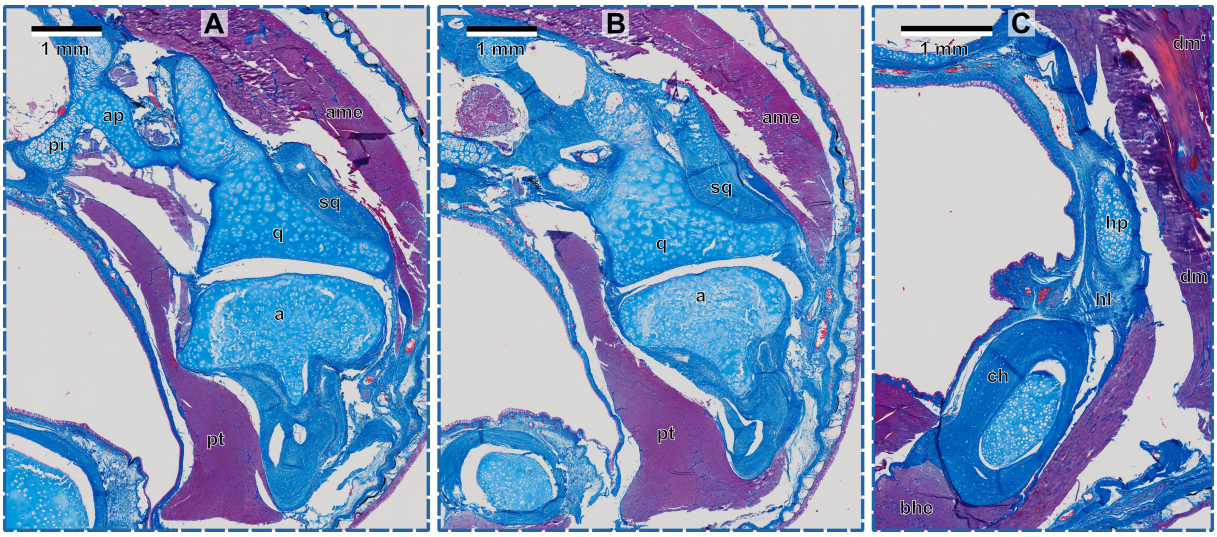

Fig. S2. Cross sections from different areas of the jaw joint-complex. Abbreviations: a, articular; ame, adductor mandibulae externus; ap, ascending process; bhe, branchiohyoideus externus; ch, ceratohyal; dm, depressor mandibulae (anterior); dm', depressor mandibulae posterior; hl, hyoquadrate ligament; hp, hyoquadrate process; pt, pterygoideus; pi, pila antotica; q, quadrate and sq, squamosal. Muscles are purple while bones and cartilages are blue in histological sections.

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Table S1. Kinematic variables of chewing in *S. intermedia* with descriptive statistics

Component motion	Variable	Description	Value
Propalinal mandible movement	Mandible retraction	Distance from start to maximal retracted position of the mandible	9.77 ± 3.53 % CL
	Mandible protraction	Distance from maximal retracted to maximal protracted position of the mandible	11.72 ± 3.49 % CL
	Duration mandible retraction	Time from start retraction until maximal retraction of the mandible	146 ± 59 ms
	Duration mandible protraction	Time from start protraction until maximal protraction of the mandible	178 ± 41 ms
Vertical mandible movement	Gape closing	Distance from start of closure to maximal gape closure	7.74 ± 3.59 % CL
	Gape opening	Distance from closed gape to maximal gape opening	6.82 ± 2.88 % CL
	Duration gape closing	Time from start gape closure until maximal closure	99 ± 49 ms
	Duration gape opening	Time from gape closure until maximal gape opening	141 ± 57 ms
Longitudinal hyobranchial movement	Hyobranchial protraction	Distance from start to maximal protracted position of the hyobranchium	2.89 ± 1.57 % CL
	Hyobranchial retraction	Distance from maximal protracted position to maximal retracted position of the hyobranchium	3.12 ± 2.05 % CL
	Duration hyobranchial protraction	Time from start protraction until maximal protraction of the hyobranchium	95 ± 55 ms
	Duration hyobranchial retraction	Time from maximal protraction until maximal retraction of the hyobranchium	112 ± 57 ms
Vertical hyobranchial movement	Hyobranchial depression	Distance from start to maximal depressed position of the hyobranchium	11.79 ± 5.71 % CL
	Hyobranchial elevation	Distance from maximal depressed position to maximal elevation position of the hyobranchium	15.38 ± 5.36 % CL
	Duration hyobranchial depression	Time from start depression until maximal depression of the hyobranchium	129 ± 62 ms
	Duration hyobranchial elevation	Time from maximal depression until maximal elevation of the hyobranchium	114 ± 103 ms
Vertical cranial movement	Neck flexion (cranial 'ventroflexion')	Angular displacement from start to maximum neck flexion relative to the trunk	7.59 ± 3.16 °
	Neck extension (cranial 'dorsoflexion')	Angular displacement from maximum neck flexion to maximum neck extension relative to the trunk	7.10 ± 3.37 °
	Duration neck flexion	Time from start flexion until maximal flexion of the neck	99 ± 42 ms
	Duration neck extension	Time from maximal flexion until maximal extension of the neck	128 ± 67 ms
Transverse mandible movement	Medio-lateral mandible abduction	Angular displacement from start to maximum medio-lateral abduction of the mandible	4.22 ± 1.70 °
	Medio-lateral mandible adduction	Angular displacement from maximum medio-lat. abduction to maximum medio-lat. adduction of the mandible	4.95 ± 2.05 °
	Duration medio-lateral mandible abduction	Time from start medio-lateral abduction until maximal medio-lateral abduction of the neck	156 ± 60 ms
	Duration medio-lateral mandible adduction	Time from maximal medio-lateral abduction until maximal medio-lateral adduction of the neck	146 ± 53 ms

Data are means ± SD. Distances normalized by cranial length (% CL).

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