

Sawful Repair Strategies in the Jaws of the Smalltooth Sawfish, *Pristis pectinata*

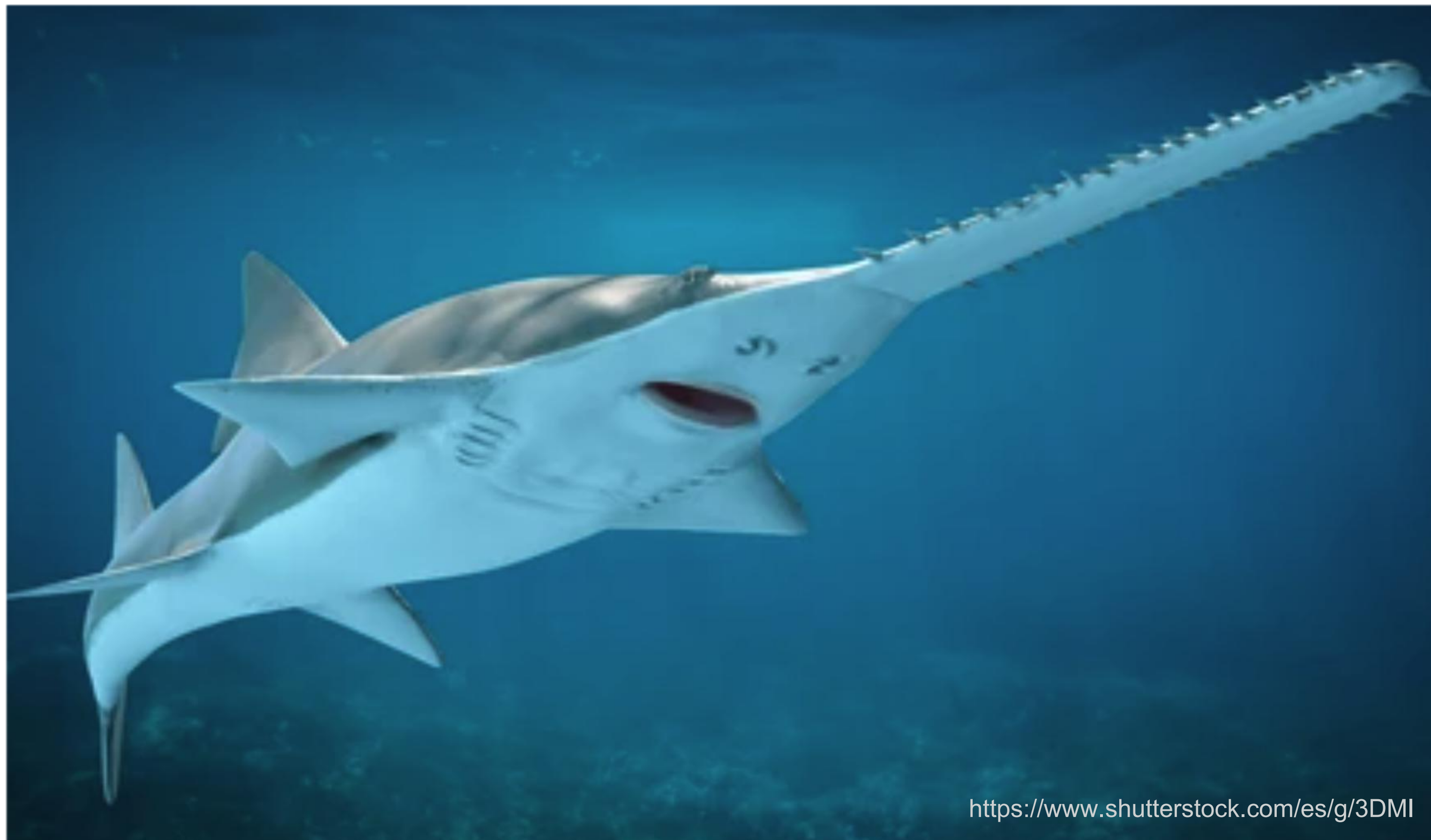
Jeongho Song, Ben Flaum, Gregg Poulakis,
Mason Dean, Jennifer Wyffels



American Elasmobranch Society Annual Meeting 2026



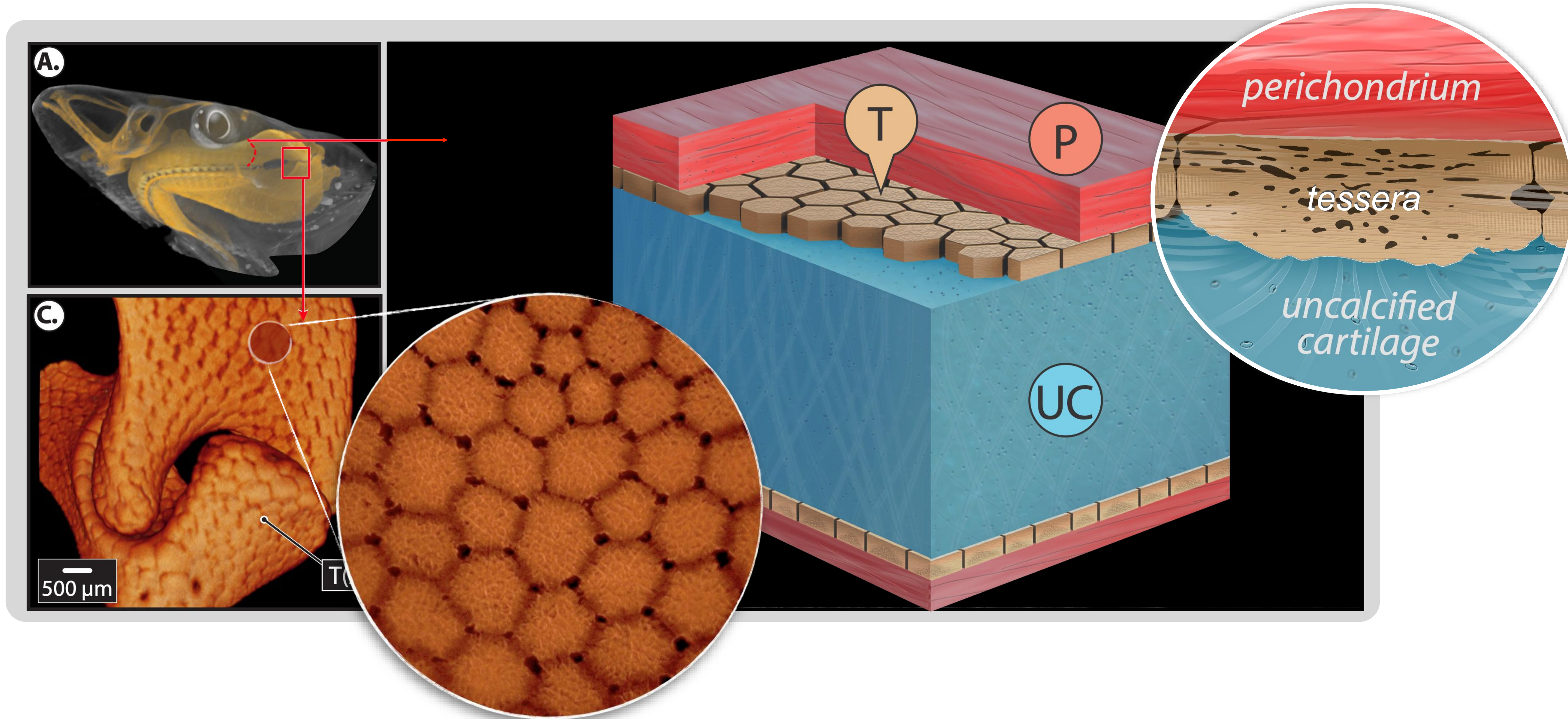
Mature Female STL 4410 mm TL
Stranded at Ballast Key 29Feb24



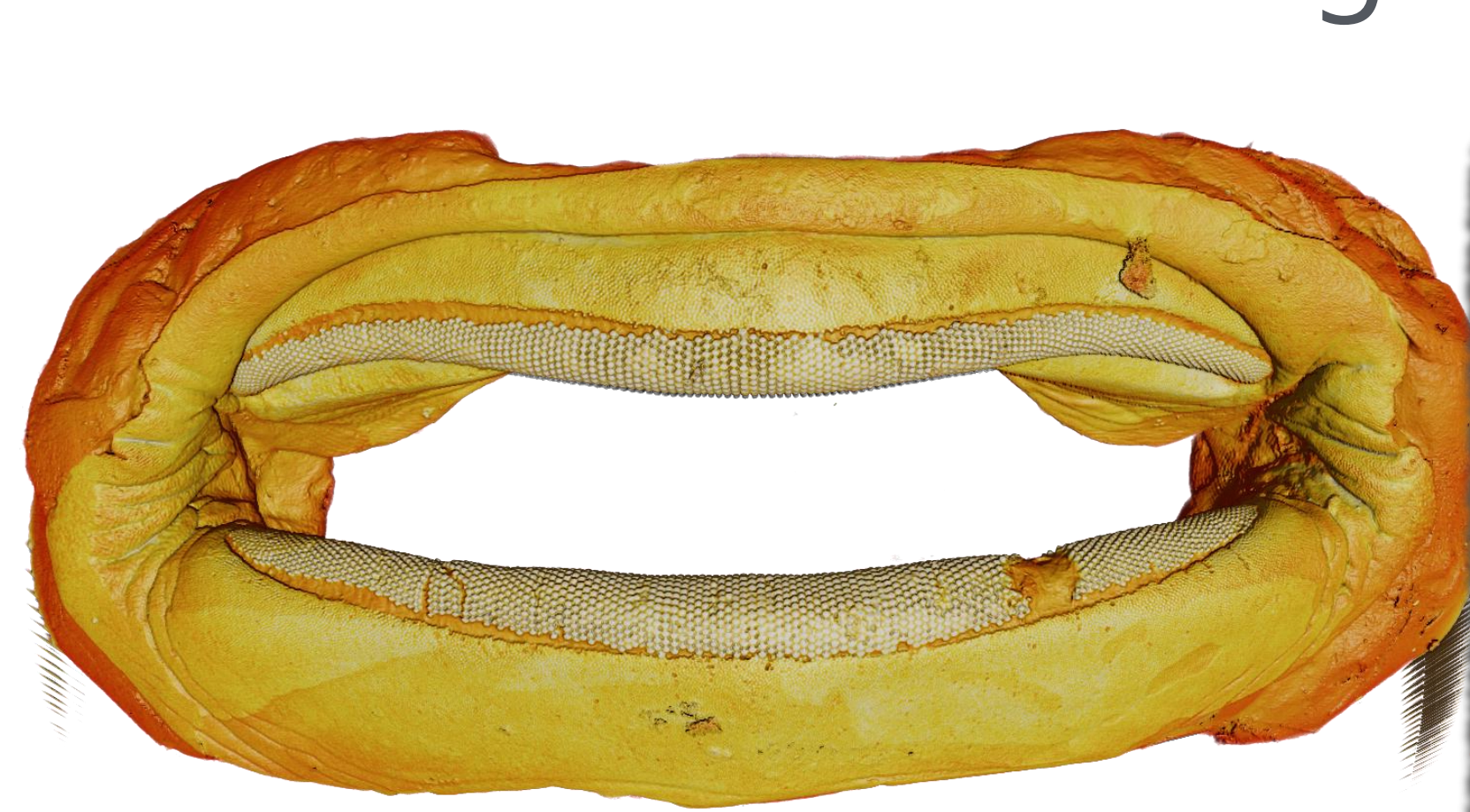
Mature Female STL 4410 mm TL
Stranded at Ballast Key 29Feb24



Shark+ray skeletons are mostly **unmineralized cartilage** covered in mineralized “tiles” (**tesserae**), overlain by fibrous **perichondrium**



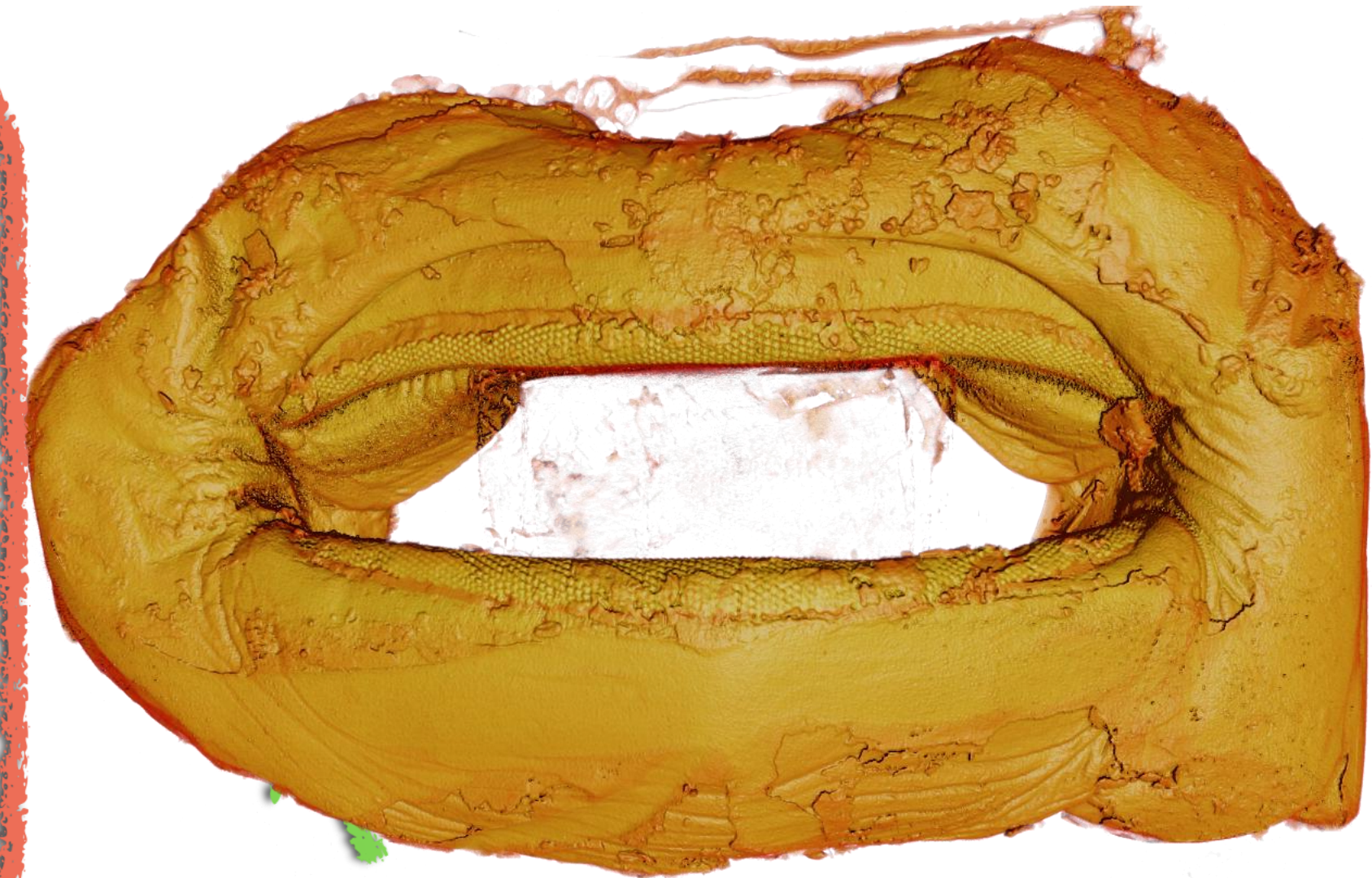
Of the six specimens examined, half showed some damage to the cartilage of the jaws, visible in microCT scans



3,899mm STL - ♂



4,409mm STL - ♀



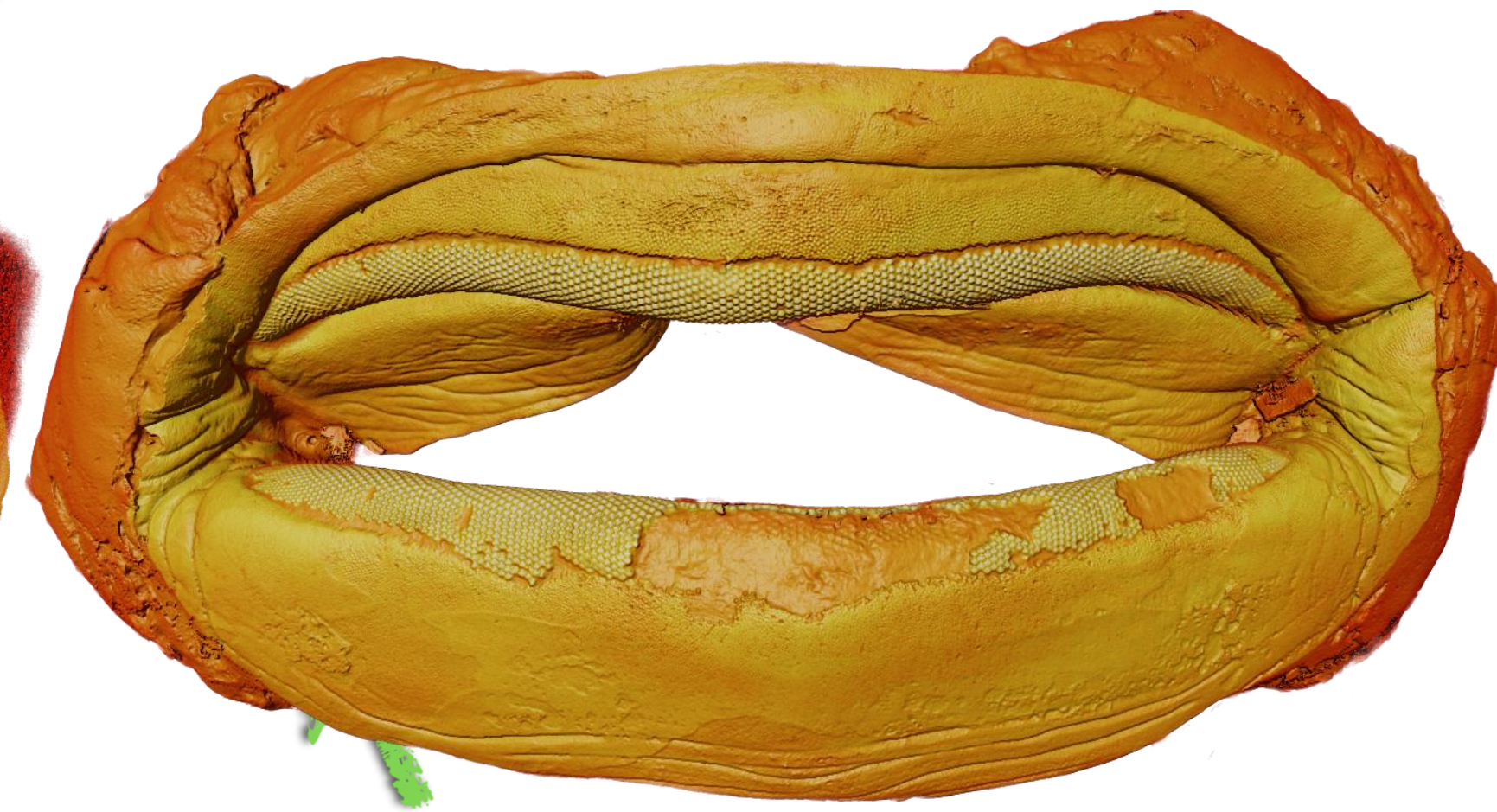
3,243mm STL - ♂



3,580mm STL - ♂

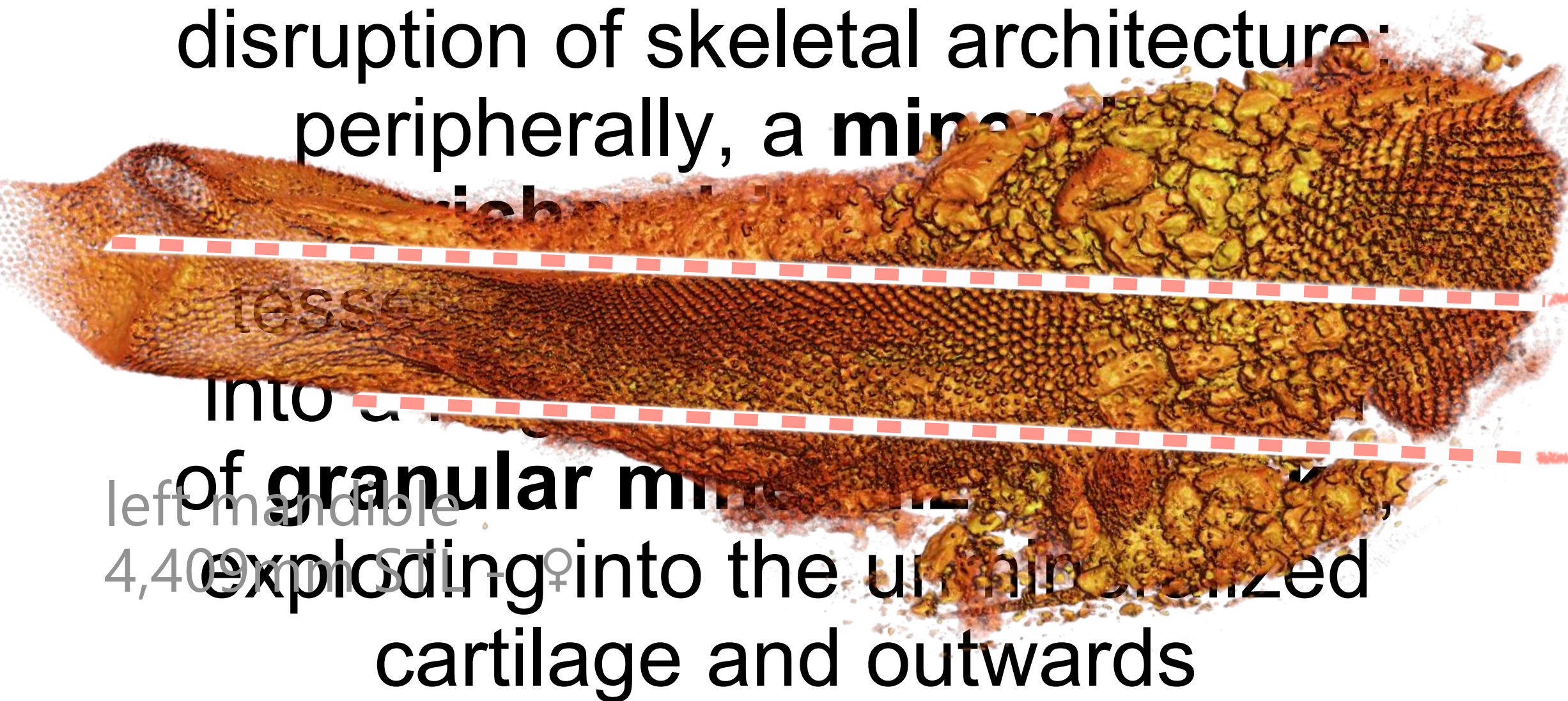


3,636mm STL - ♂

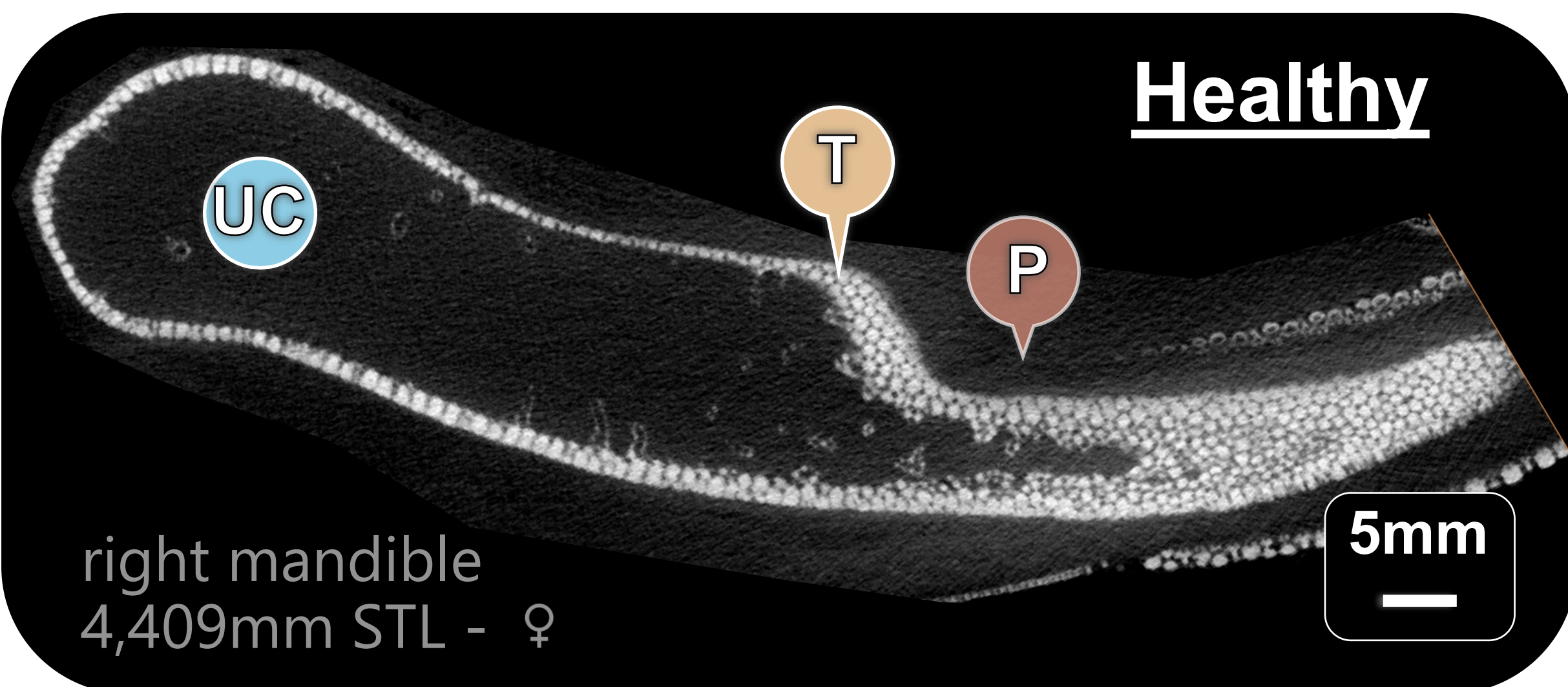


4,230mm STL - ♂

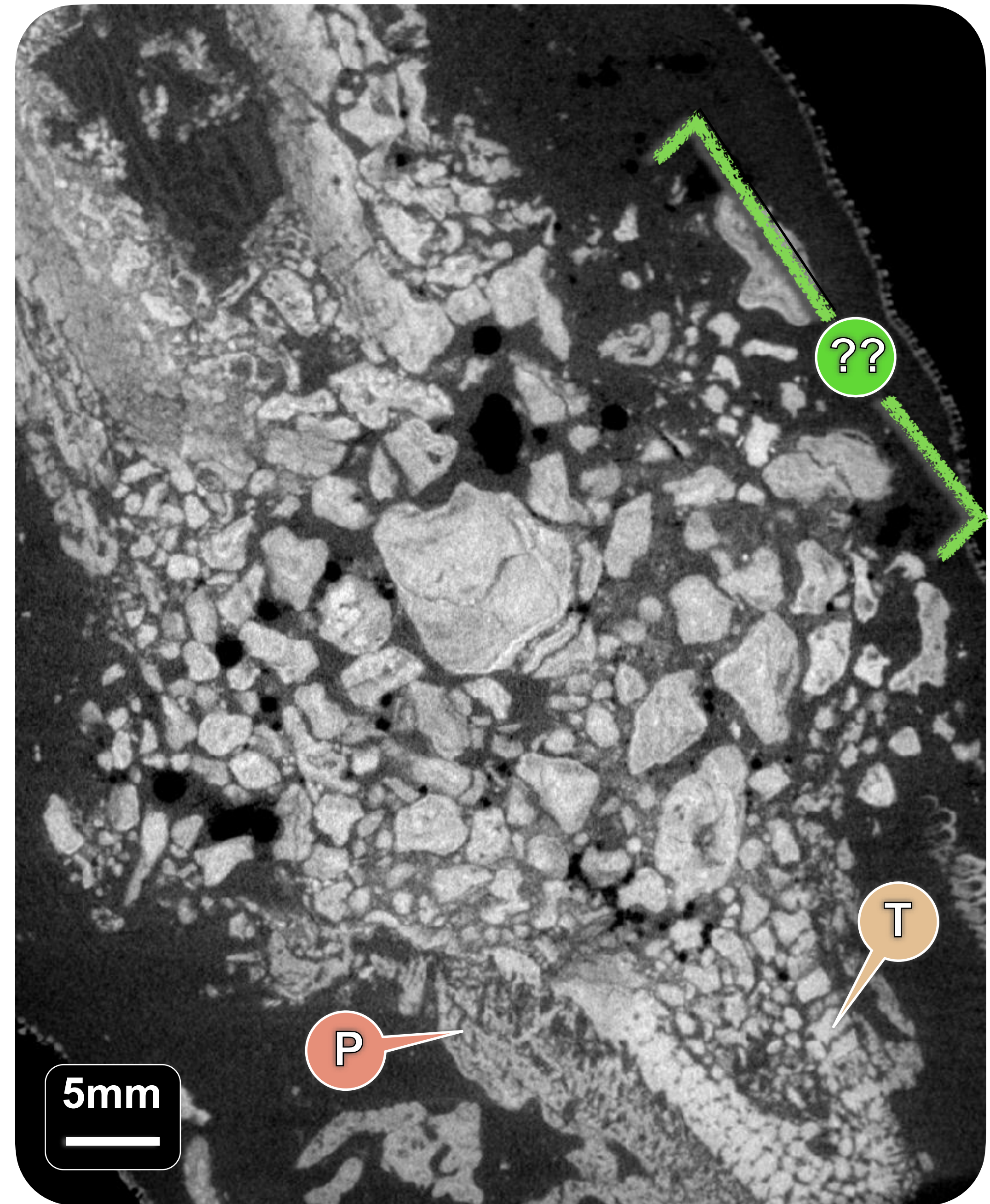
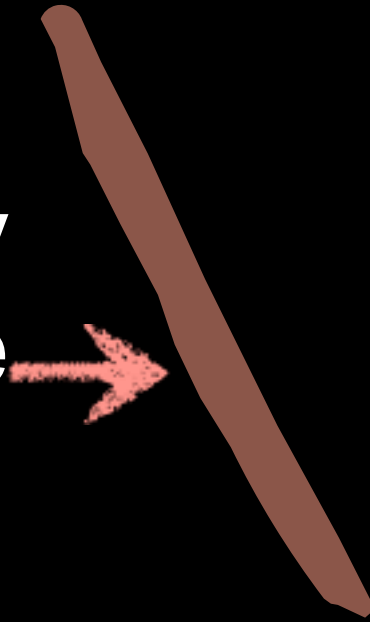
The defect is a conspicuous
disruption of skeletal architecture:
peripherally, a **mineralized**



Into a **cloud**
of **granular mineral**
exploding into the unmineralized
cartilage and outwards



stingray
spine

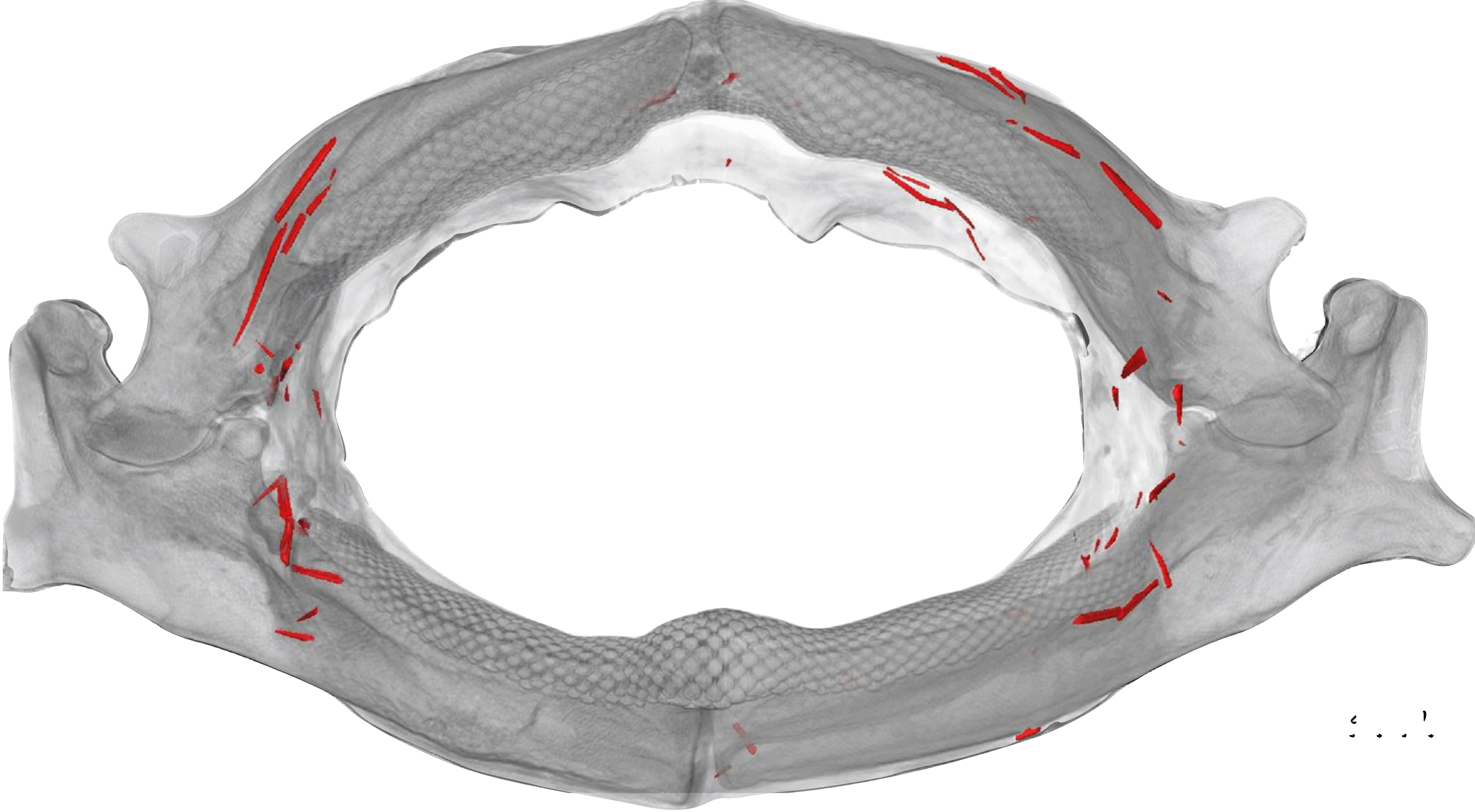
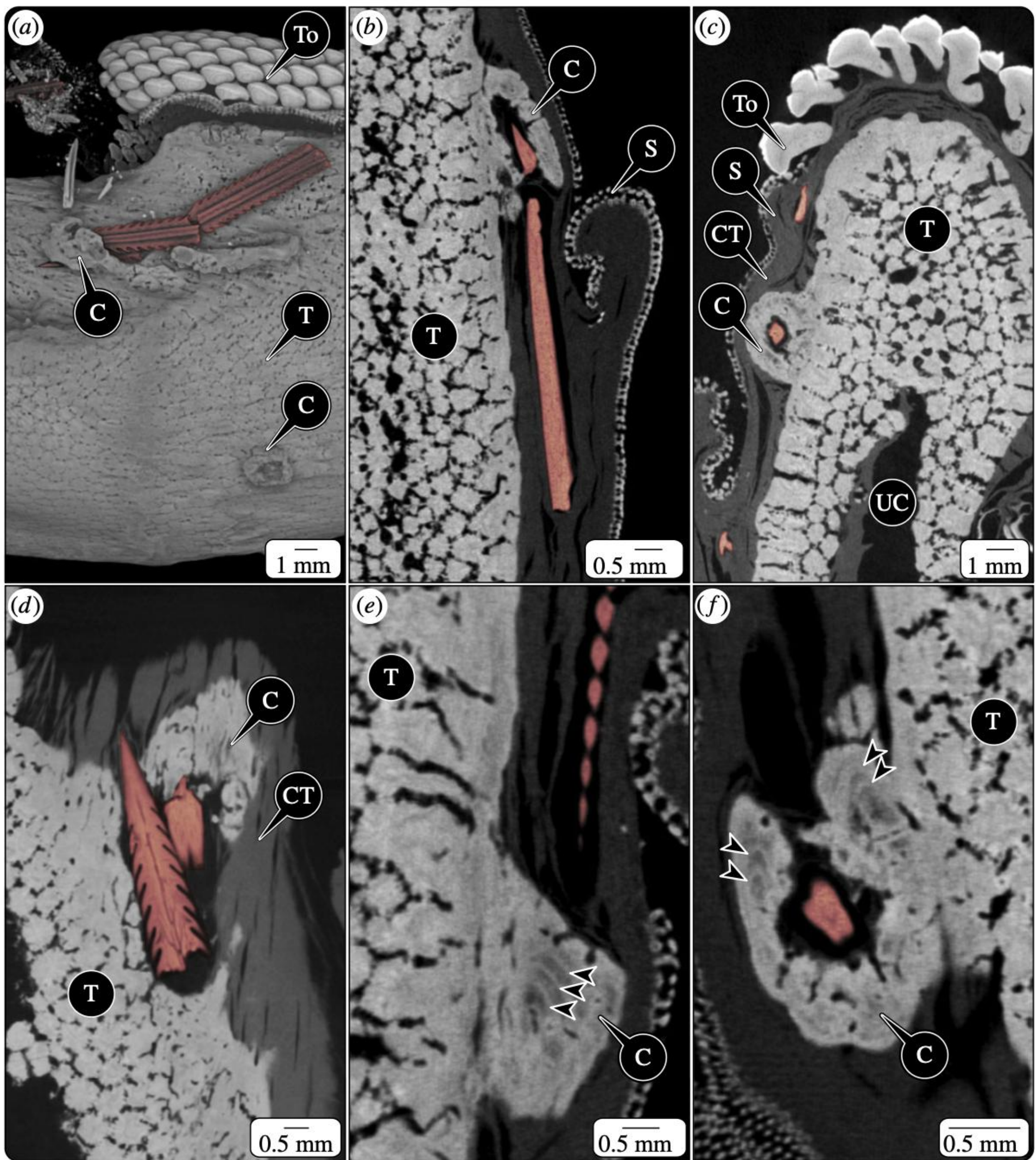


5mm

P

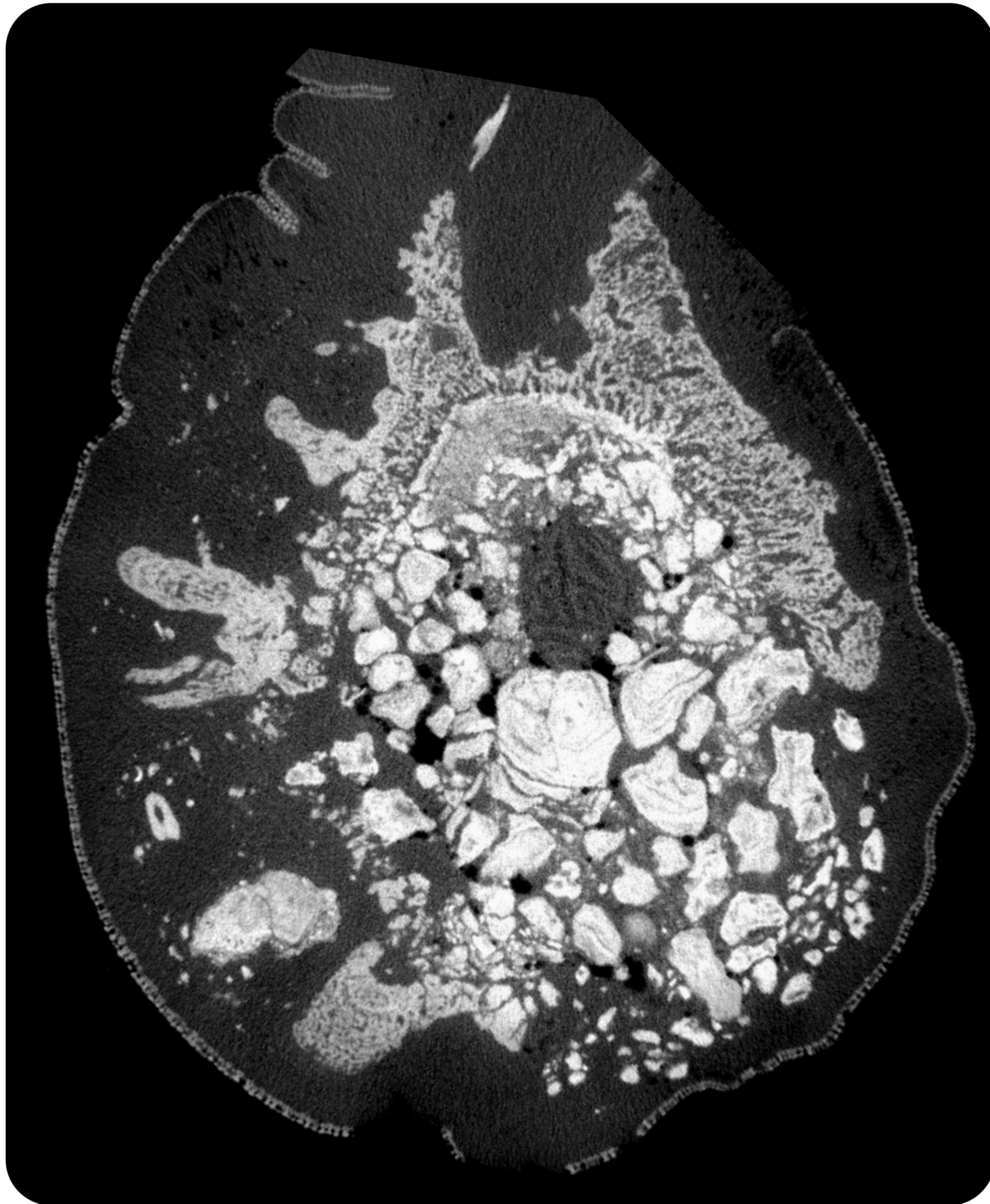
T

??



Guitarfish

Damage and repair response to stingray barbs.



CONCLUSIONS

Damage to sawfish jaws is not uncommon and seems to be often caused by stingray spines.

Damage to the perichondrium may trigger callus-building.

Is this repair, stabilization or just a broken mineralization pathway?

Does more extreme disruption of the perichondrium lead to more extreme morphologies?

Thank You Symposium Sponsors!



save our seas
foundation



All activities during the
“spinning fish events”
performed under the authority
and guidelines of
NOAA Fisheries Emergency
Section 7 Consultation
#SERO-2024-00402

Non-spinning-event research
activities performed under
authority of current
ESA Section 10 permits
#25864 to Gregg Poulakis,
#21857 to Tonya Wiley,
and #22078 to John Carlson or
their previous permits