DIAGNOSTIC IMAGING REPORT

Facility		**Modality**	Computed Tomography
Referring Doctor	Dr.	**Study**	Whole Body
Animal ID		**Date of Study**	2017
Signalment	30yo F sea turtle	**Date of Report**	2017

History

"Chief complain is lethargy, positive buoyancy, anorexia, retching and mildly elevated kidney enzymes. has been receiving SQ and intracoelomic fluids around the pelvic limbs (more left than right). sea turtle... about 30 yo. female"

Technique

Computed tomographic imaging was performed in ventral recumbency at (Toshiba Aquilion 64-slice). Two non-contrast 8mm series of the whole body are available in a soft tissue algorithm. Two additional post-contrast 8mm series are also available in a soft tissue algorithm, following injection of contrast into the left external jugular vein (i.e. dorsal cervical sinus) and perivascular tissues. There is lack of vascular uptake of the contrast bolus. The image quality of the study is diagnostic, although acquisition of notably thinner slices (1-2mm) would yield more meaningful multiplanar reconstructions. Motion artifact is present involving the head in series 4 (time-stamped 4:11PM). Notable streaking/beam hardening artifact is present associated with the contrast bolus in series 3 and 4. There is a central ring detector artifact in all images, evident as concentric circles that radiate to 10cm in diameter in axial images and horizontal lines on sagittal reformats. The scan FOV (50cm) includes only the axial portion of the thoracic limbs, pelvic limbs, and tail.

Findings

There is a small focus of subcutaneous emphysema in the left dorsal cervical region on the first (pre-contrast) series. There is focal dorsoventral narrowing of the air column in the cranial cervical trachea, due at least in part to the presence of a small amount of dependent luminal fluid. The thyroid is hyperattenuating (normal finding due to the presence of iodine in tissue) and is seen to the right of midline, dorsal to the right acromion process where it articulates with the entoplastron. The thyroid is triangular-shaped in cross-section cranially and tapers caudally. There are periarticular osteophytes arising from the glenoid fossa bilaterally. The multichambered lungs both exhibit a normal degree of inflation and have largely normal parenchyma with scattered variably-sized soft tissue nodules (2-8mm). The lateral margin of the cranial left lung is focally folded ventrally and displaced medially. It wraps around the left side of the esophagus cranial to the gastroesophageal junction. There is no abnormal tissue seen displacing the lung. A fusiform metallic foreign body is present in the region of the stomach. The FB is located 3.8cm medial to the left carapacial margin, 34cm cranial to the base of the carapace, and 7cm dorsal to the

plastron's ventral surface. Its size cannot be accurately measured due to streaking artifact (estimated 3cm length). The liver is diffusely hypoattenuating (-6 to 17HU); it has a homogeneous appearance with no nodules or masses detected. There are a large multitude of spherical soft-tissue structures filling the entire ventral coelom, caudal to the liver (TNTC). Many are homogeneously attenuating, but several have a discrete hypoattenuating dorsal layer. No mineralization is evident associated with these structures. There is a striking lack of gas within the GI tract. The kidneys are not clearly seen.

Impressions

1. Folliculogenesis. The settling of dense contents within some of these follicles is abnormal and may represent reproductive pathology such as follicular retention/stasis.
2. Metallic foreign body. Metal streaking artifact, lack of tissue enhancement, and relatively limited spatial/contrast resolution in the study precludes definitive assessment of the foreign body's location (i.e. gastric vs. intracoelomic). It could represent an ingested FB within the stomach, a FB that is free in the coelom (ingested or introduced via external trauma), or an abnormally located transponder.
3. Hypoattenuating liver: most consistent with hepatic lipidosis, consistent with reported anorexia
4. Pulmonary nodules: Differentials include granulomas (fungal vs. other), pulmonary fibropapilloma nodules, mycobacteriosis, parasitic cysts, or less likely metastatic neoplasia.
5. Left lung retraction: Possibly secondary to adhesion to the ventral (GI) tissues? Unknown detailed prior history.
6. Bilateral humeral joint osteoarthritis
7. Fluid in tracheal lumen: Incidental vs. risk for aspiration
8. Left cervical emphysema - - possibly from venipuncture prior to CT?

Recommendations

- Is the animal exhibiting decreased buoyancy on the left, given the CT findings? Is it possible that the animal has normal buoyancy but is not diving because of weakness?
- Recommend ultrasonography to look for evidence of coelomic fluid (+/- diagnostic centesis if present) as may be seen with repro-associated coelomitis. If scant, the effusion may be more readily detectable with US than CT.
- Rule-out metal toxicity secondary to described foreign body. If there is no history of transponder/microchip placement in this region, gastroscopy +/- laparoscopy may be indicated for removal.
- Consider placement of feeding tube, if manageable, to provide nutritional support for anorexia/hepatic lipidosis
- Technical: Recommend generation of lung and bone reconstruction algorithms using thinner slices in future studies

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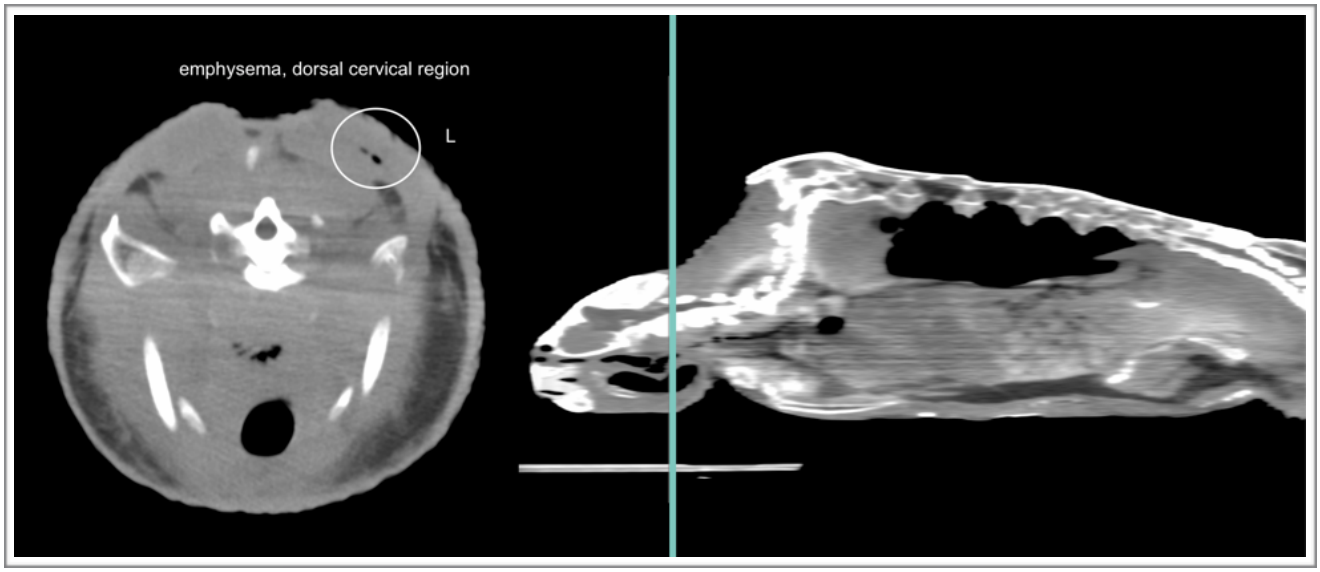
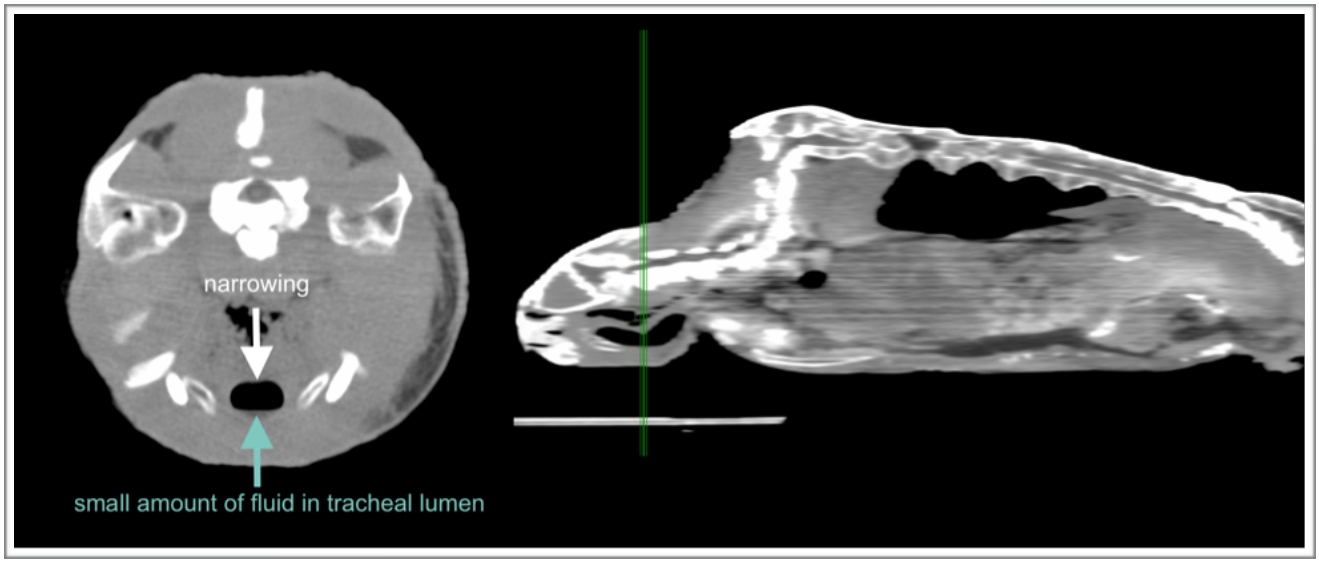
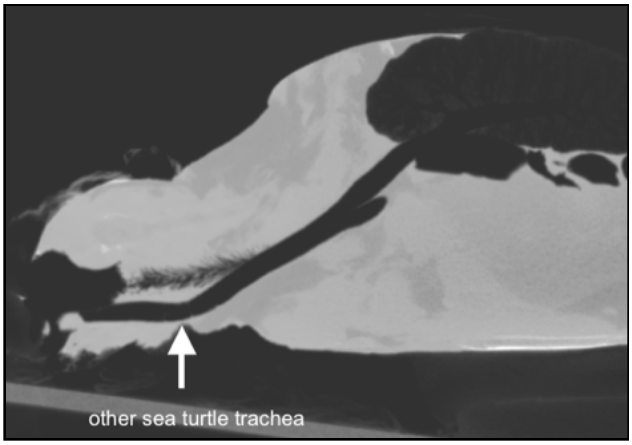
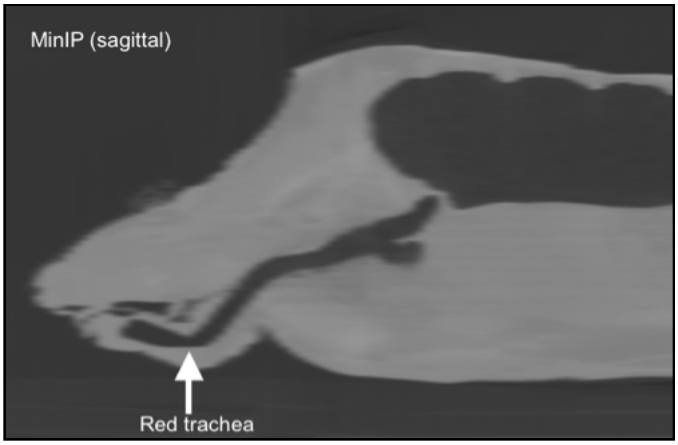
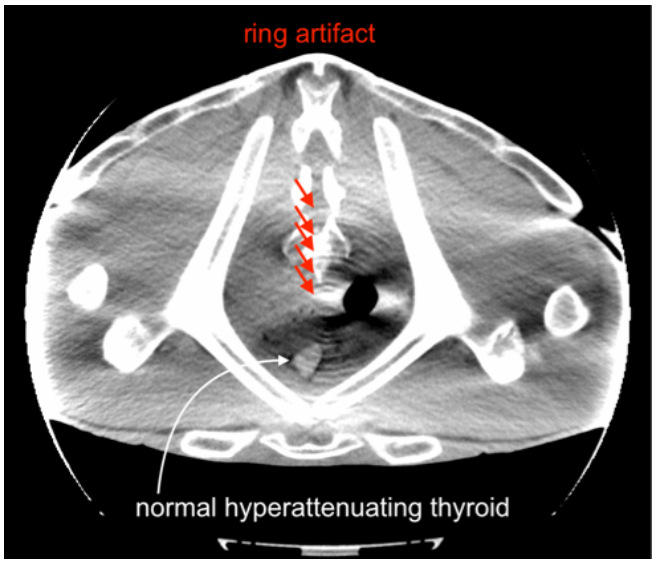
Note: The findings, impressions, and recommendations listed are based on the history and clinical information provided. Interpretation should be performed by a licensed veterinarian serving as the primary clinician for the animal.

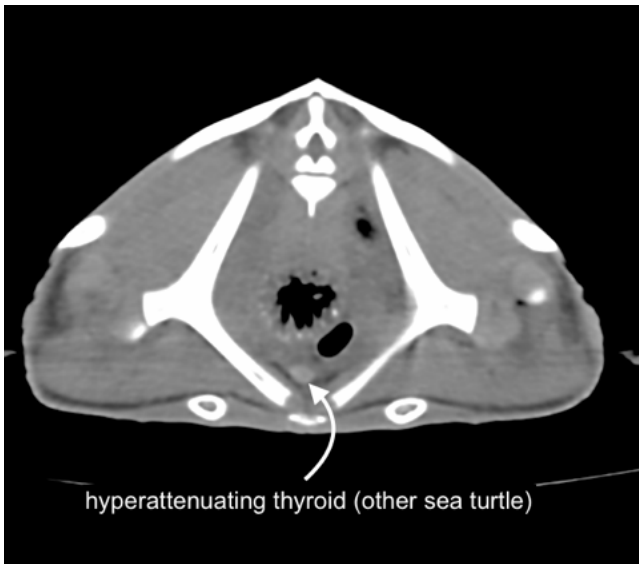

emphysema, dorsal cervical region
L

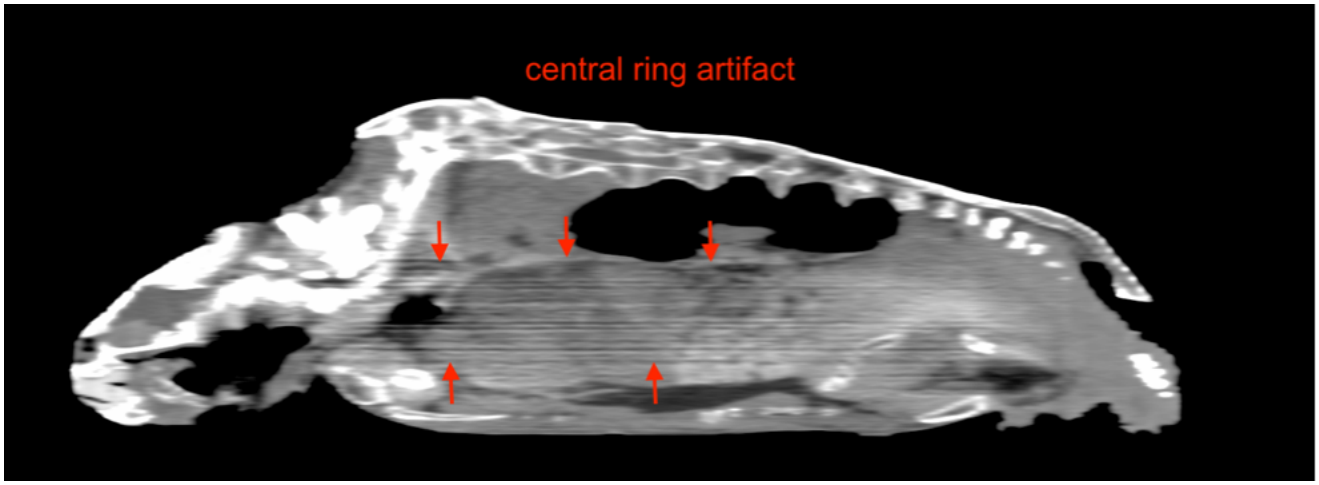

narrowing
small amount of fluid in tracheal lumen

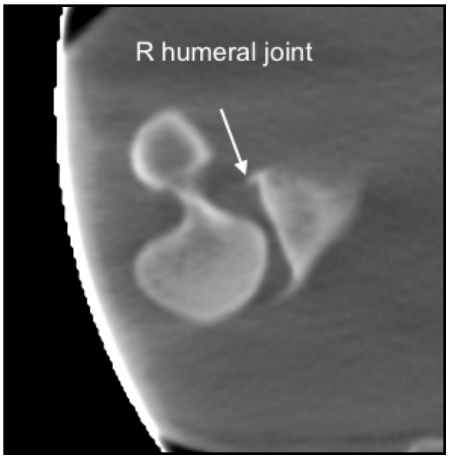

other sea turtle trachea

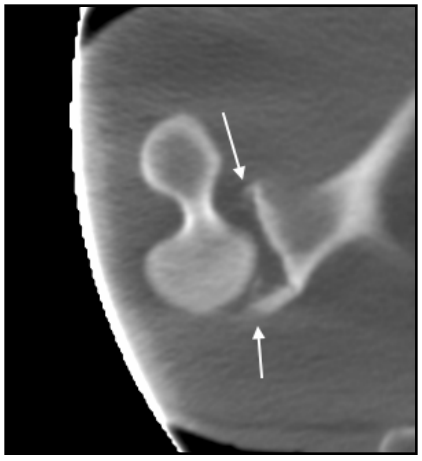

MinIP (sagittal)
Red trachea

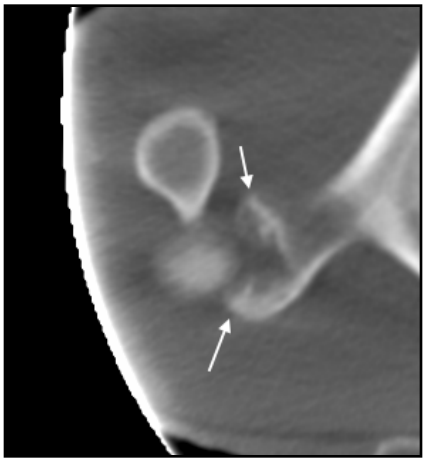

ring artifact
normal hyperattenuating thyroid

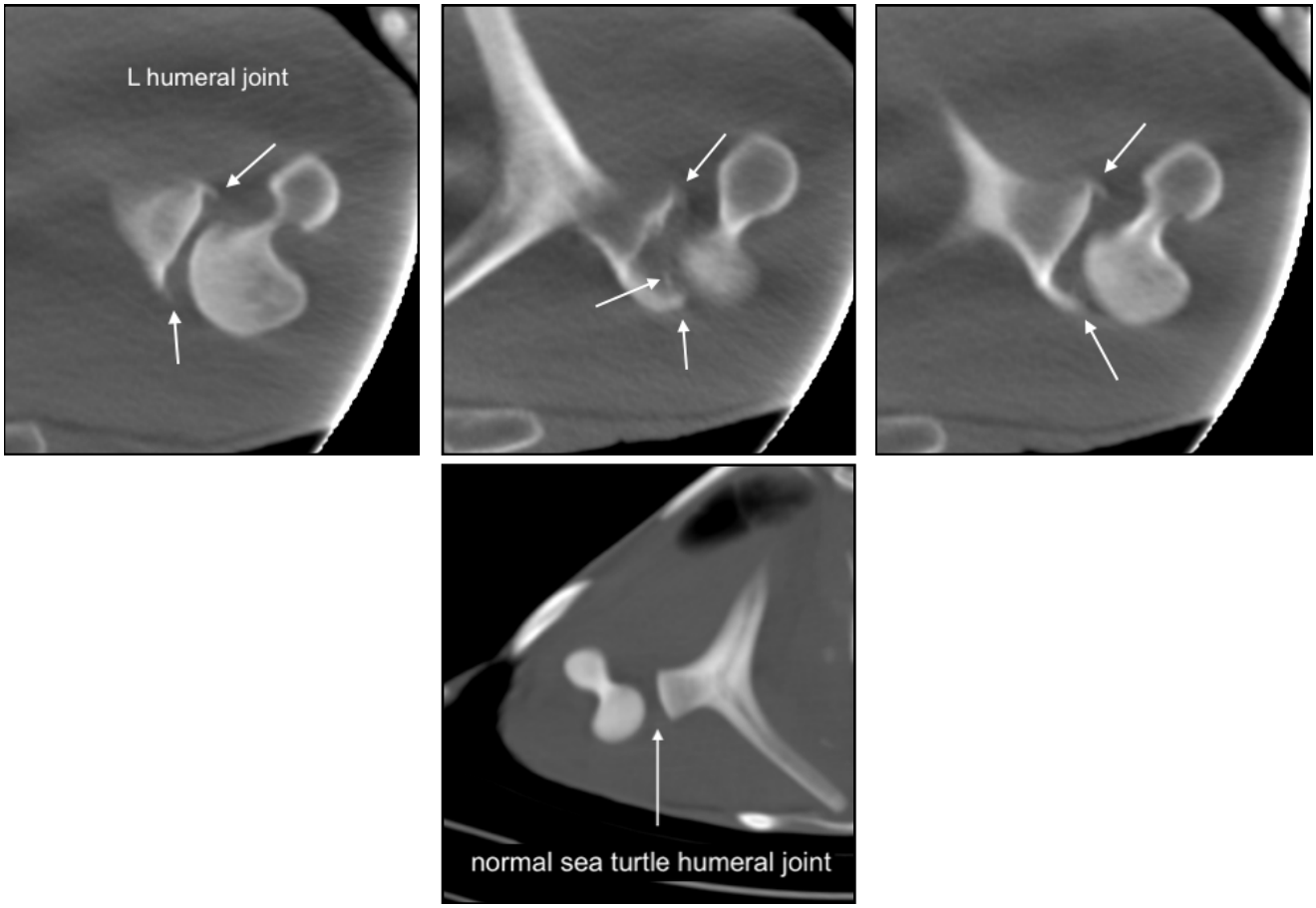

hyperattenuating thyroid (other sea turtle)

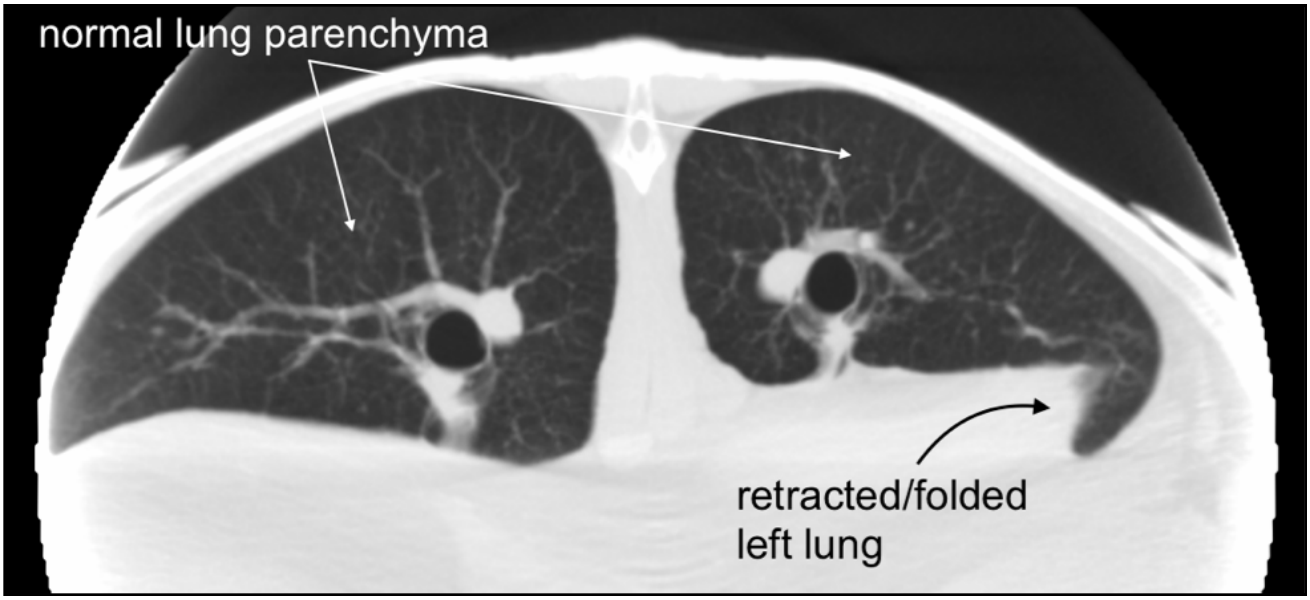

central ring artifact

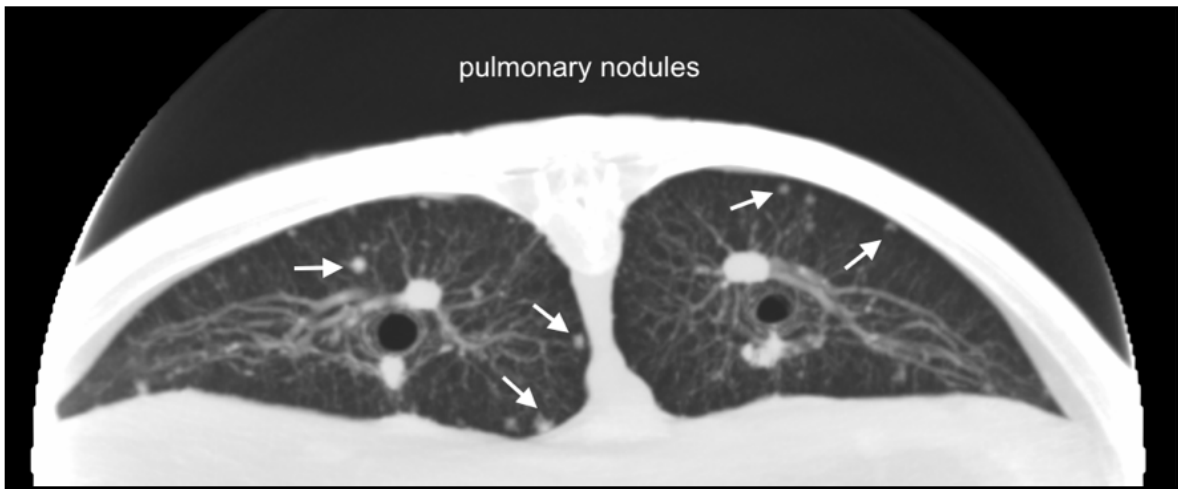

R humeral joint

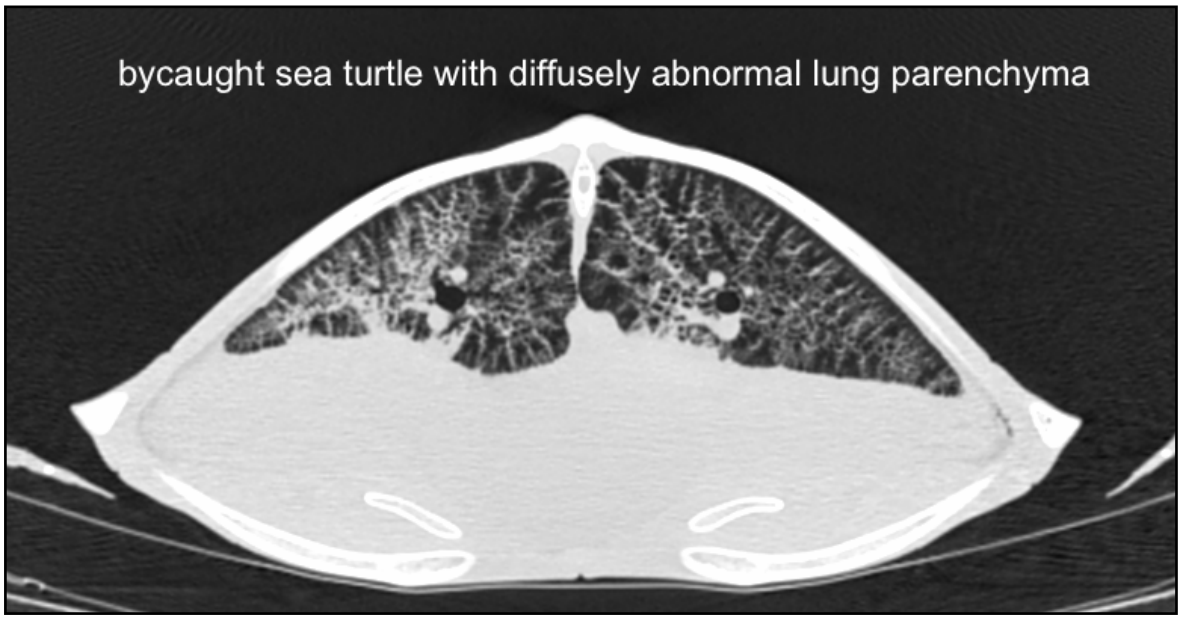


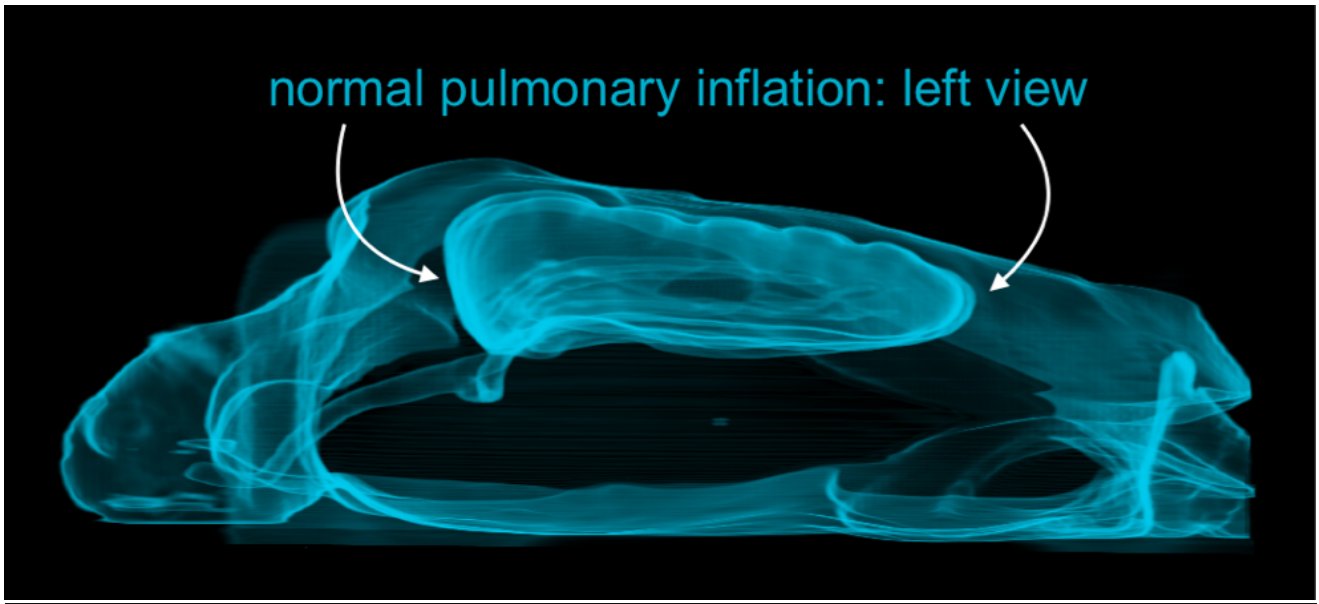


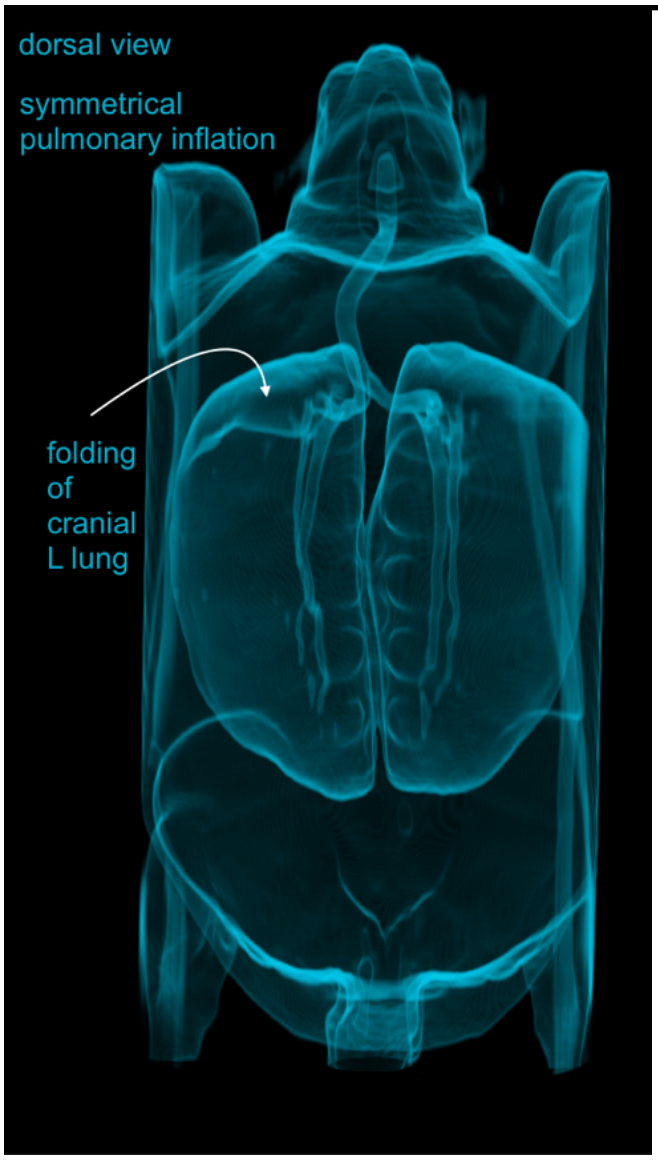

L humeral joint
normal sea turtle humeral joint

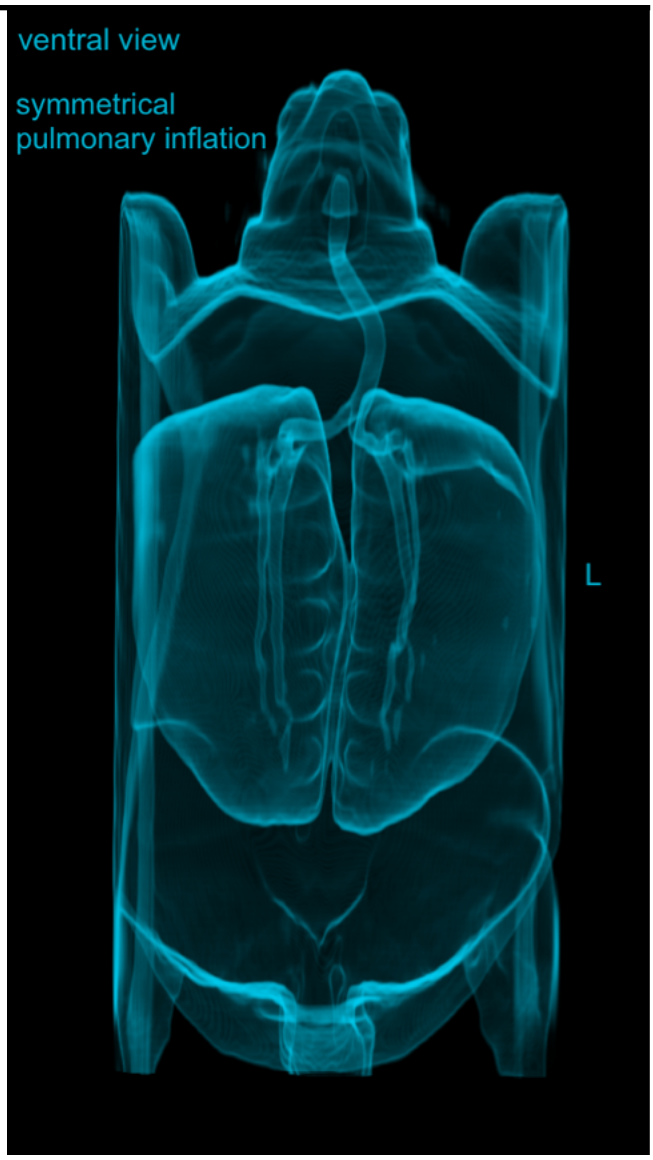

normal lung parenchyma
retracted/folded
left lung

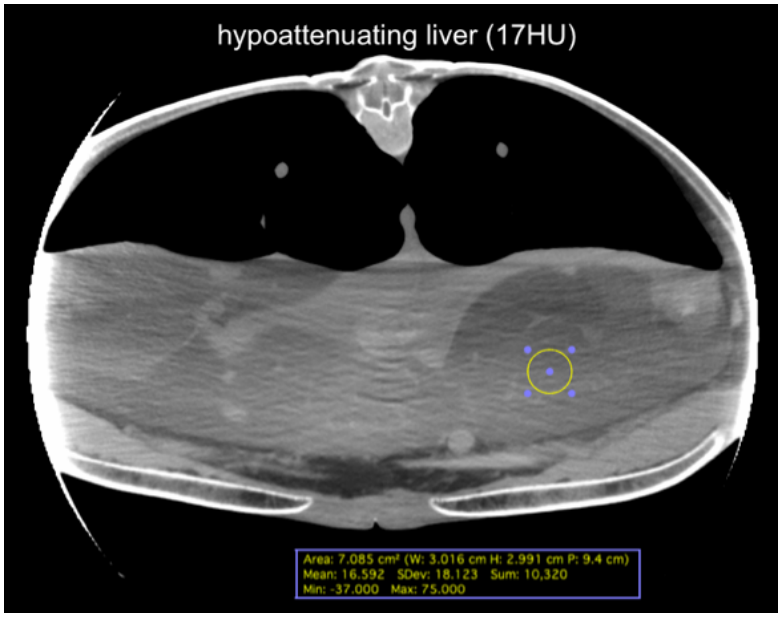

pulmonary nodules

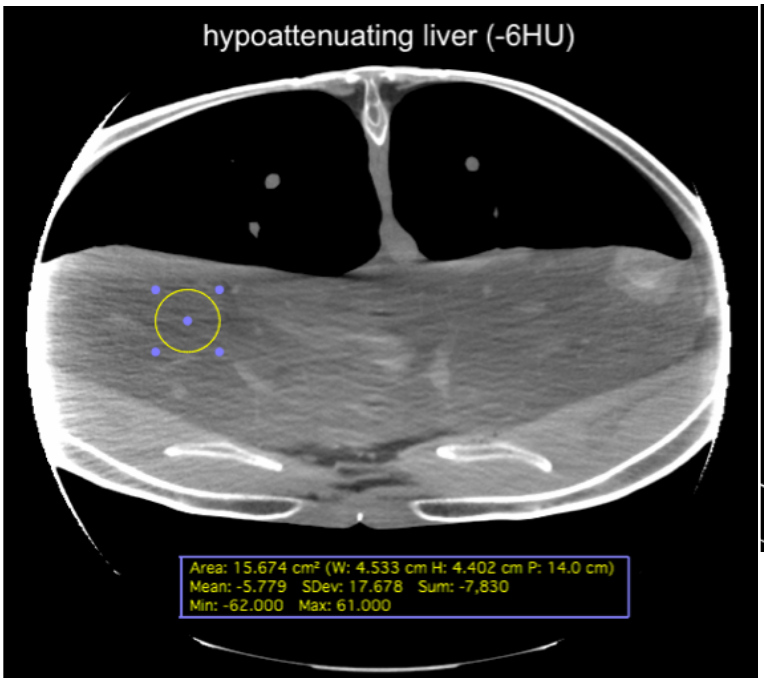

bycaught sea turtle with diffusely abnormal lung parenchyma

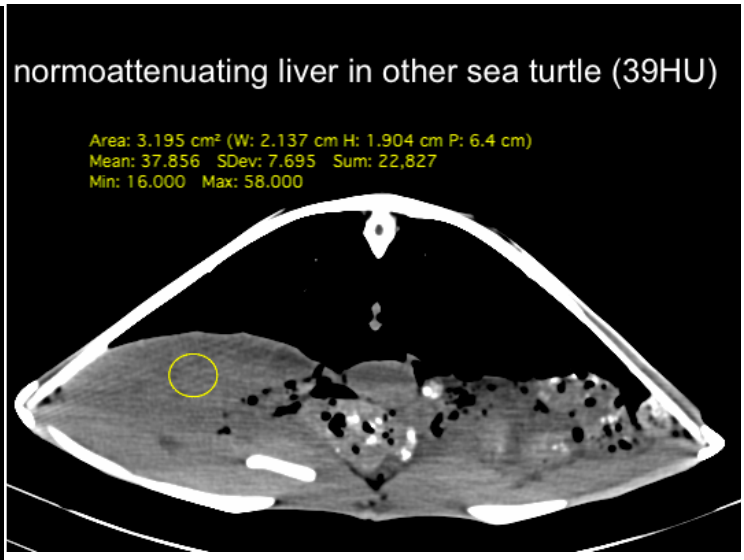

normal pulmonary inflation: left view

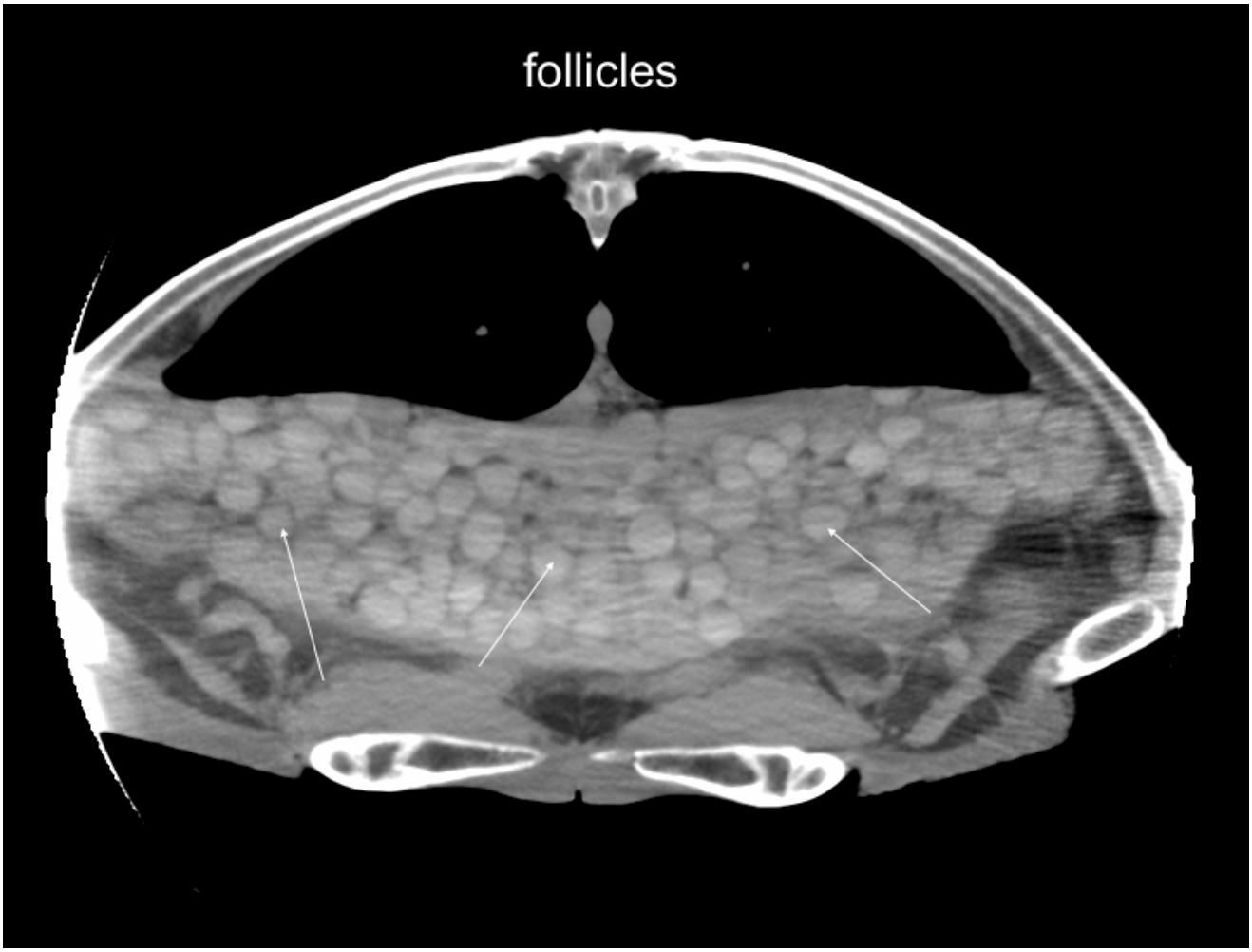

dorsal view
symmetrical
pulmonary inflation
folding
of
cranial
L lung

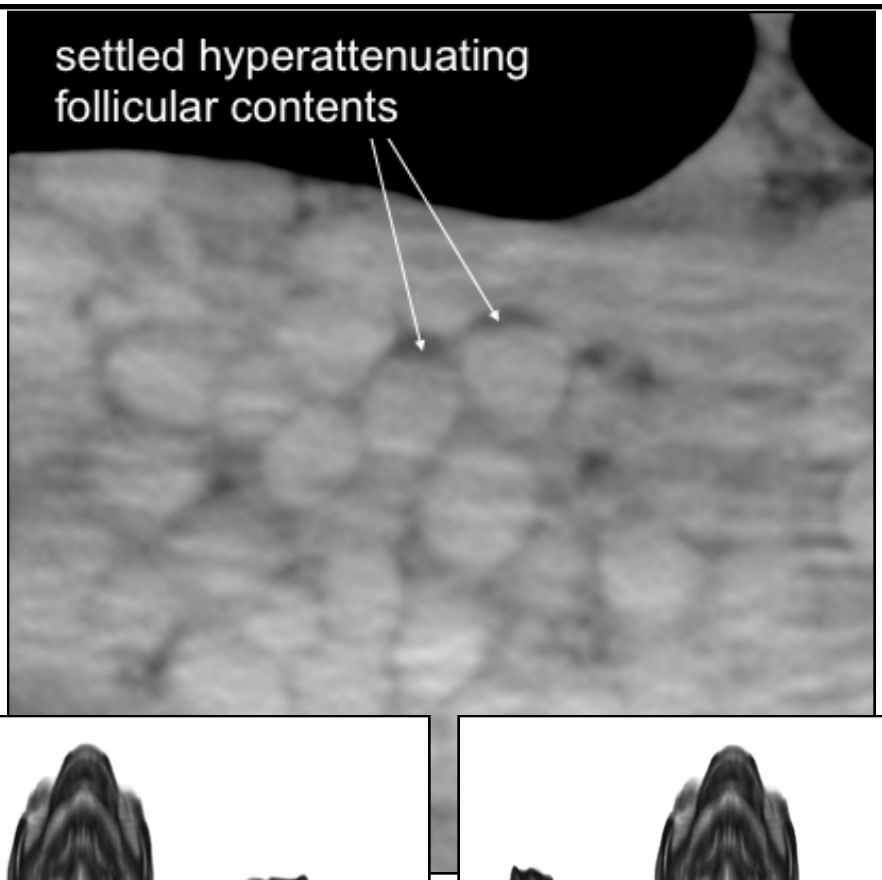

ventral view
symmetrical
pulmonary inflation
L

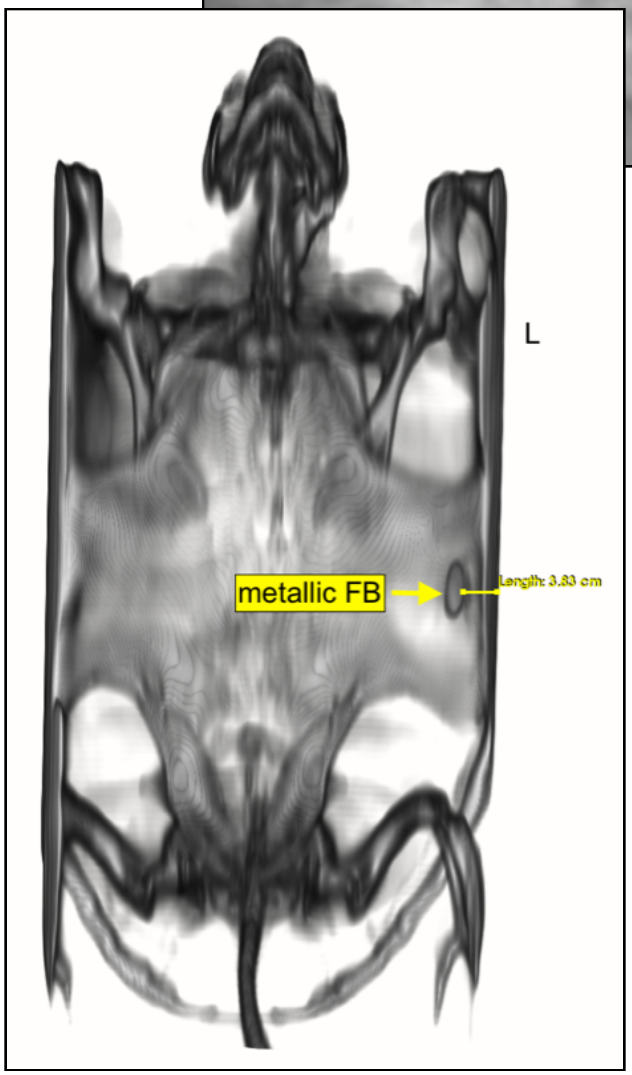

hypoattenuating liver (17HU)
Area: 7.085 cm² (W: 3.016 cm H: 2.991 cm P: 9.4 cm)
Mean: 16.592 SDev: 18.123 Sum: 10,320
Min: -37.000 Max: 75.000

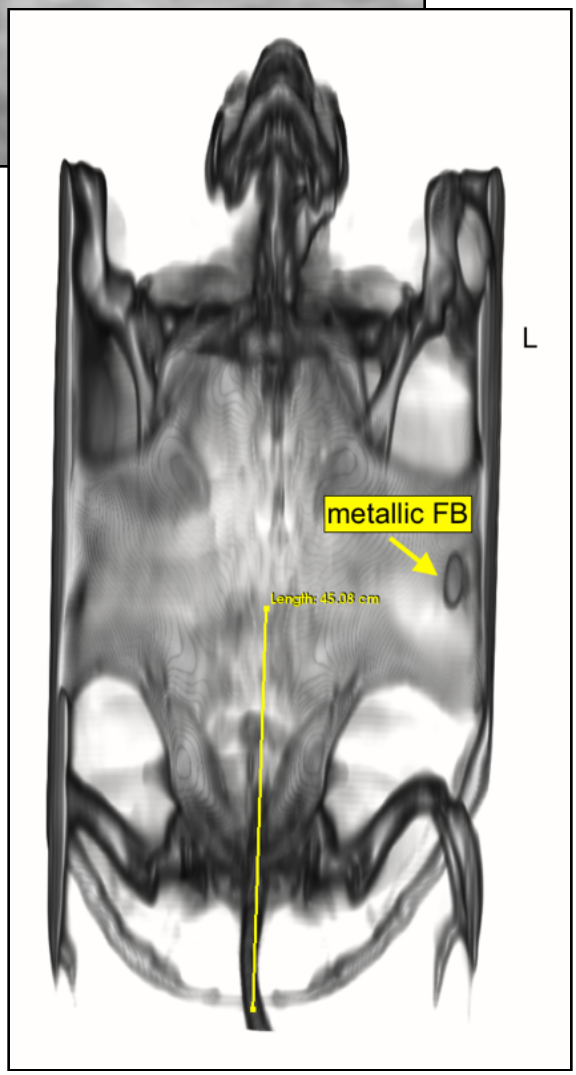

hypoattenuating liver (-6HU)
Area: 15.674 cm² (W: 4.533 cm H: 4.402 cm P: 14.0 cm)
Mean: -5.779 SDev: 17.678 Sum: -7,830
Min: -62.000 Max: 61.000

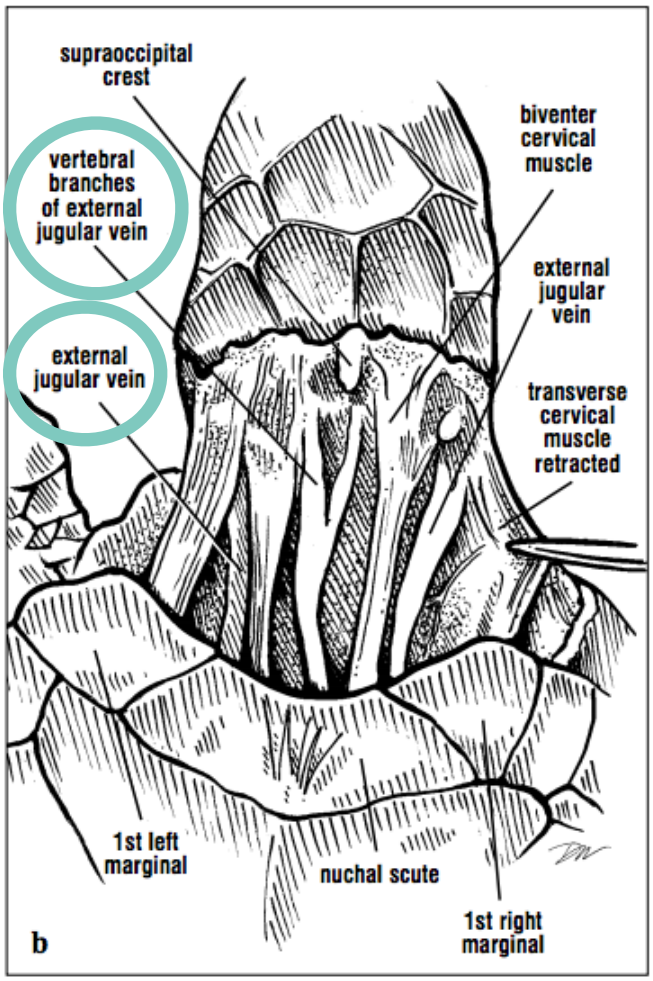

normoattenuating liver in other sea turtle (39HU)
Area: 3.195 cm² (W: 2.137 cm H: 1.904 cm P: 6.4 cm)
Mean: 37.856 SDev: 7.695 Sum: 22,827
Min: 16.000 Max: 58.000

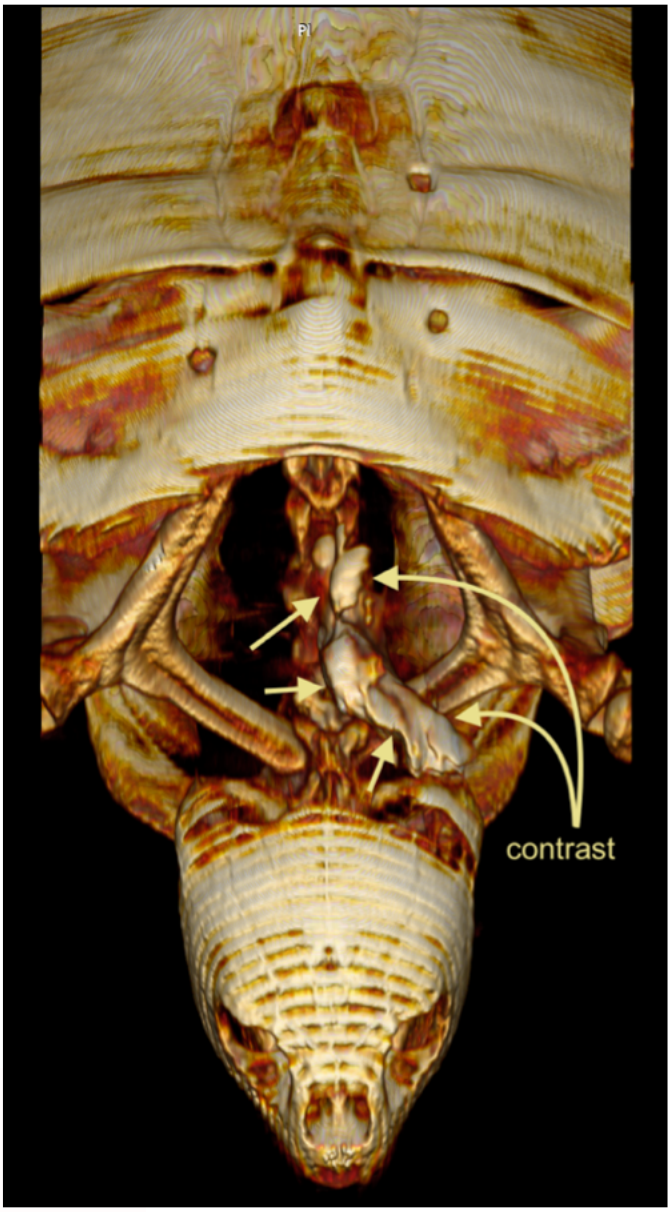

follicles

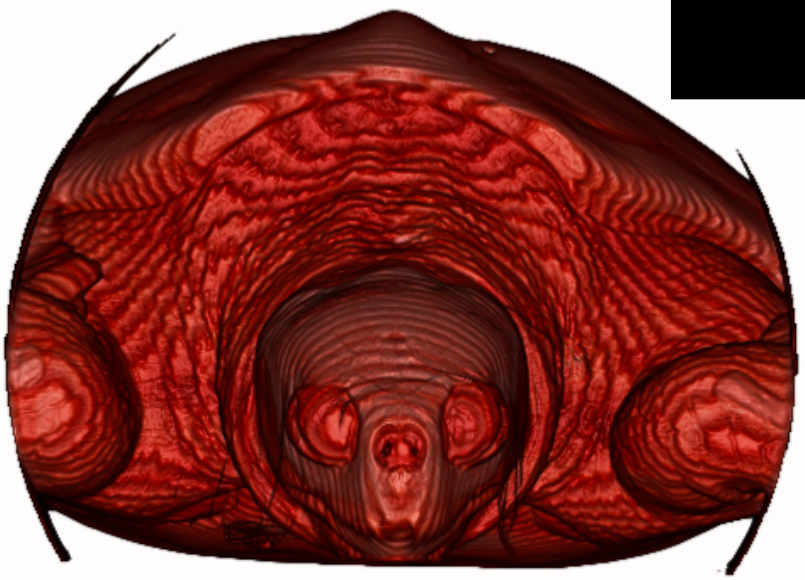

settled hyperattenuating
follicular contents


L
metallic FB
Length: 3.83 cm

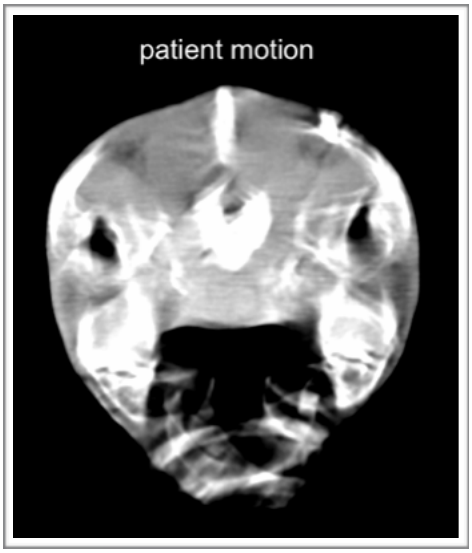

L
metallic FB
Length: 45.03 cm


supraoccipital crest
vertebral branches of external jugular vein
external jugular vein
biventer cervical muscle
external jugular vein
transverse cervical muscle retracted
1st left marginal
nuchal scute
1st right marginal
b


contrast



small SFOV


patient motion