



## PATIENT

Princess Morales

## SPECIES

Canine

## BREED

Shih Tzu

## SEX

Female

## AGE

9Y

## WEIGHT

7lbs

## INTERPRETED BY

Sebastian Schaub, DVM  
Dr. med. vet.  
DipECVDI

## IMAGING PERFORMED BY

HVSFA

## HOSPITAL NAME

Hospital Veterinario  
San Francisco de Asis

## REFERRING VET

Dra. Rodriguez

## INVOICE

74083

## DATE

3-9-26

## PRESENTING CLINICAL SIGNS

- The patient presented due to an apparent seizure episode. On physical examination, a grade IV heart murmur was detected. Baseline blood chemistry revealed elevated renal values, and the CBC showed leukocytosis.
- The patient was hospitalized and started on intravenous fluids, phenobarbital, and ampicillin. Since hospitalization, no additional seizure episodes have been observed.
- Given the neurological presentation, an intracranial mass, abdominal mass is suspected.

## COMPUTED TOMOGRAPHY OF THE SKULL, THORAX AND ABDOMEN

A high resolution pre- and post-contrast CT study of the skull and abdomen and a post-contrast CT study of the thorax is provided for review.

## COMPUTED TOMOGRAPHIC FINDINGS

### Skull

Multiple teeth are absent and atrophy of the alveolar bone in all jaw quadrants is appreciated.

The nasal cavity presents the expected aerated spaces between thin & even conchae and turbinates with smooth mucosal lining.

Both temporomandibular joints present congruent joint spaces with even subchondral bone surfaces and are considered within normal limits.

Both tympanic bullae are aerated, the mucosal lining is not seen, the bony wall is smooth and thin. The horizontal segment of the external ear canal bilaterally is obliterated by soft tissue attenuating material with equivocal mild contrast enhancing – presenting a convex shaped lateral border.

The brain presents no deviation from normal anatomy and symmetry. The brain parenchyma is homogeneous and within normal limits for attenuation and distribution of contrast enhancement. The ventricular system is non-dilated and symmetric.

The submandibular and medial retropharyngeal lymph nodes are small and elongated with a normal short-to-long-axis-ratio is < 0.5, the attenuation and contrast enhancement pattern is uniform.

### Thorax

The bony and surrounding soft tissue structures are within normal limits.

In the pleural cavity a small amount of gravity dependent, fluid attenuating material is appreciated. The lung lobes are retracted from the thoracic wall by the fluid attenuating material.

The cranial mediastinal lymph nodes are mildly prominent.

The cardiovascular structures including the pulmonary vasculature are within normal limits.

The bronchial tree presents with regular branching and tapers uniformly towards the periphery as expected, the bronchial walls are thin and smooth. The bronchus-to-artery ratio is within normal limits.

The lung parenchyma presents the expected architecture and attenuation behavior.

Small incidental gas pockets are seen within the esophageal lumen; there is no evidence of abnormal dilation.



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## Abdomen

The serosal fat presents normal attenuation behavior. There is no evidence of peritoneal effusion or peritonitis.

Both kidneys present within normal limits for size, shape and organ architecture. After contrast administration throughout the renal cortex, multiple well-defined, roundish parenchymal filling defects are seen.

The uterine horns are prominent and post contrast administration, multiple well-defined, roundish fluid attenuating areas are noted throughout the endometrial lining.

Originating from the adrenal gland bilaterally, a soft tissue attenuating and heterogeneous contrast enhancing nodule is visible; measuring up to 14 mm in diameter. The left adrenal nodule presents irregular central mineralization.

Both liver and spleen present with normal shape, even surface, uniformly attenuating parenchyma and homogeneous contrast enhancement, unremarkable.

The pancreas is evenly contoured; the pancreatic parenchyma is homogeneous and presents uniform contrast enhancement.

The position, delineation, wall and content of the gastrointestinal tract are considered within normal limits throughout.

The parenchyma of the right mammary complex #2 and #3 presents an irregular shaped, partially mineralizing, and heterogeneous contrast enhancing mass; measuring 22 x 10 x 35 mm. In the glandular tissue of the right mammary complex #5 a mild irregular contrast enhancing nodule is seen.

The left mammary complex #4 presents an irregular shaped, heterogeneous soft tissue attenuating mass with interspersed granular mineralization and a mild irregular contrast enhancement pattern is seen; measuring 21 x 20 x 28 mm. Multiple nodules are appreciated in the glandular tissue between the left mammary complex #2 and #3.

## COMPUTED TOMOGRAPHIC DIAGNOSIS

- Multiple mammary masses right and left mammary complexes – partially with metaplasia/dystrophic mineralization – consistent with primary mammary neoplasia, either benign, malignant, mixed
- Glandular cystic endometrial hyperplasia – can predispose for pyometra formation
- Bilateral adrenal soft tissue mass with dystrophic mineralization and without vascular invasion
- Mild pleural effusion
- Bilateral obliteration of the horizontal segment of the external ear canals by soft tissue material
- Lymphadenopathy cranial mediastinal lymph nodes – likely secondary to the pleural effusion
- Multiple absent teeth with secondary atrophy of the alveolar bone
- Multiple simple renal cortical cysts
- Normal brain
- No evidence of pulmonary metastatic disease

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The nodular enlargement of both adrenal glands is suggestive for bilateral (non)functional adrenal neoplastic transformation – such as adenoma, adenocarcinoma or pheochromocytoma.

An underlying cause for the pleural effusion cannot be specified – tapping the pleural effusion for complete fluid analysis is beneficial.



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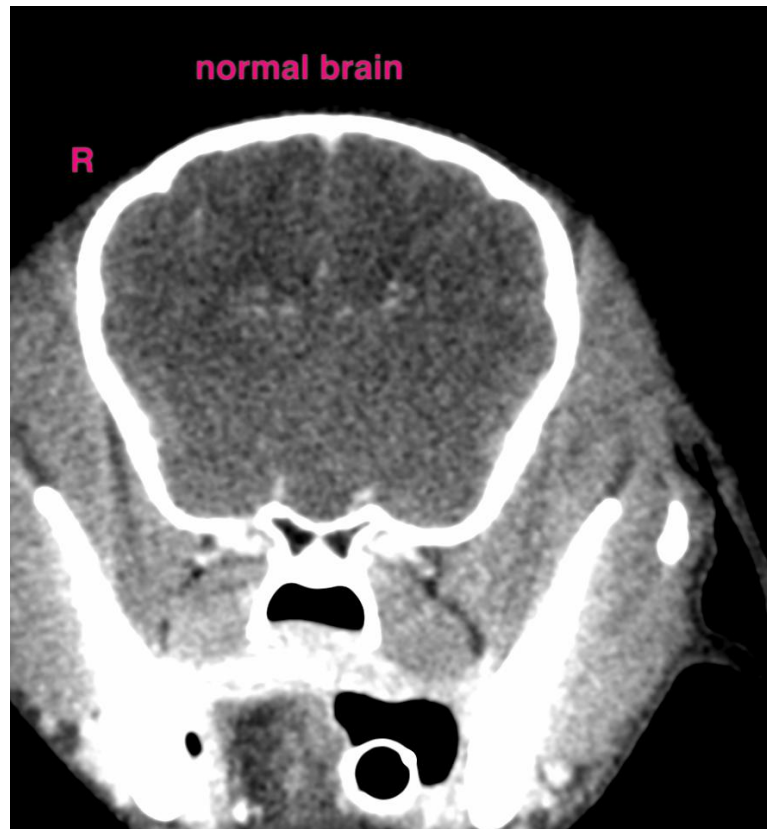
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In the present study of the brain there is no evidence of macromorphological disease. If not yet done so the workup should be complemented by examination of CSF and complete bloodwork to screen for brain disease that is not necessarily associated with structural changes of the brain parenchyma and rule out hepatoencephalopathy and other systemic illness. In case of the strong clinical suspicion of structural intraparenchymal changes an MRI may be considered.

The soft tissue material in the ear canals can be a sequela to otitis externa and thickening of the wall or present polypoid mass of the external ear canal. Otoscopy would be beneficial for specification.





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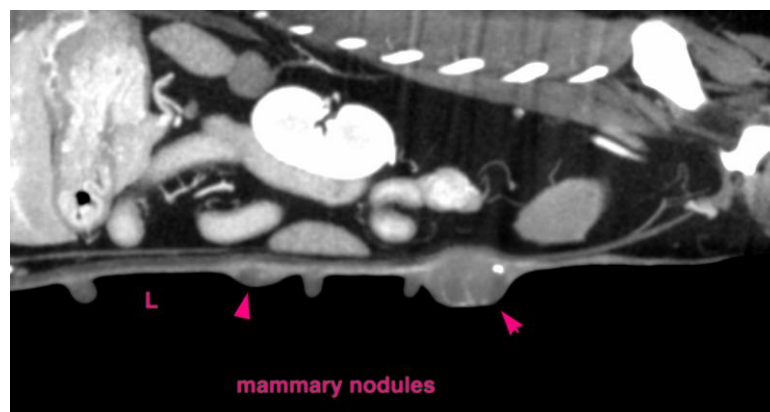
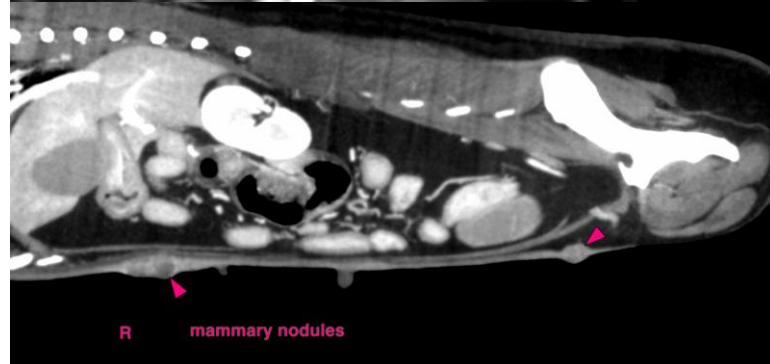
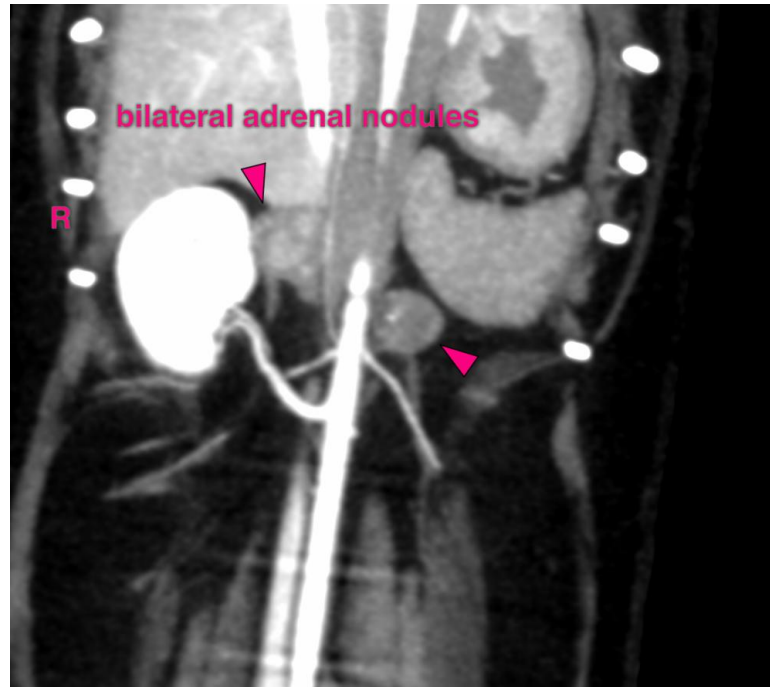
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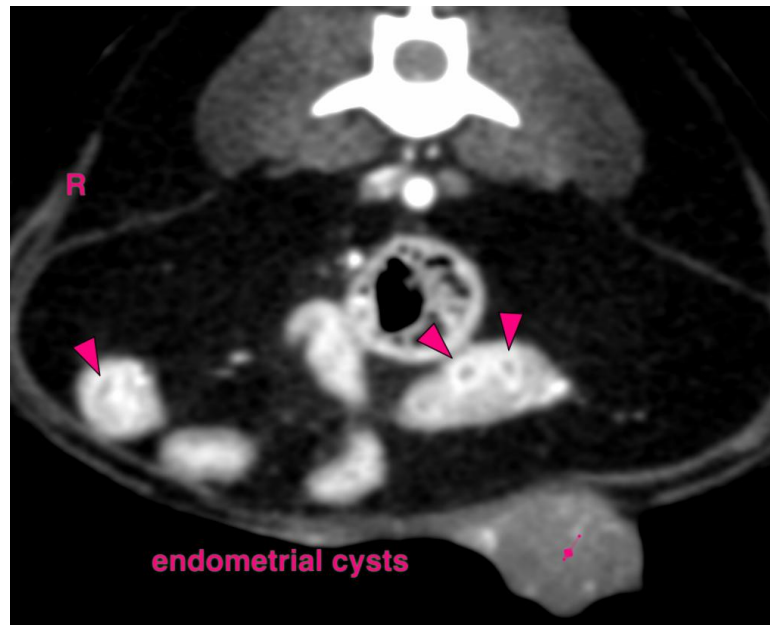
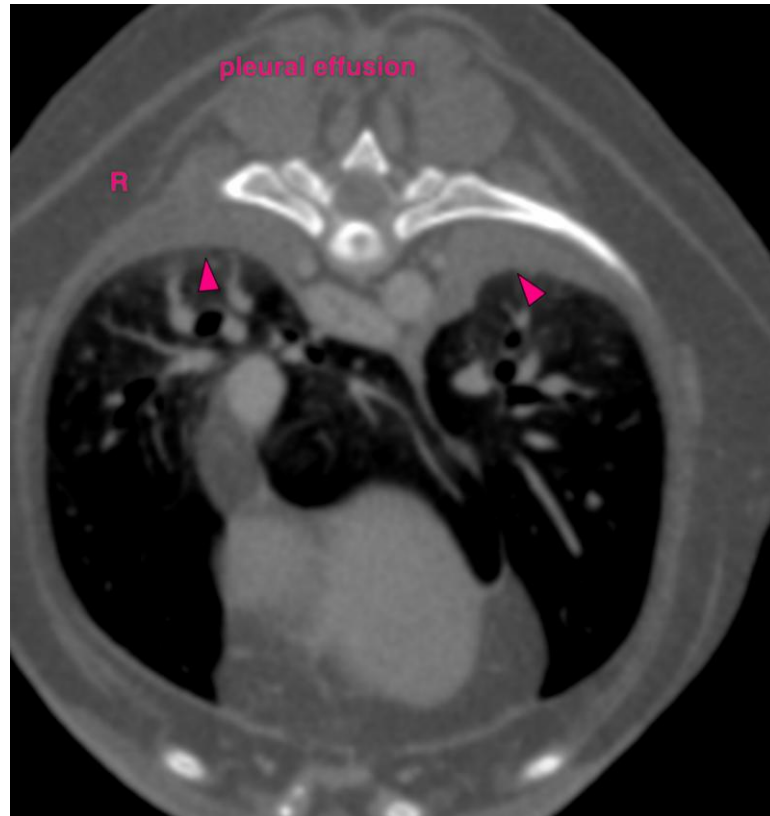
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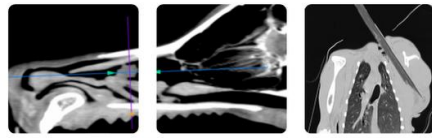
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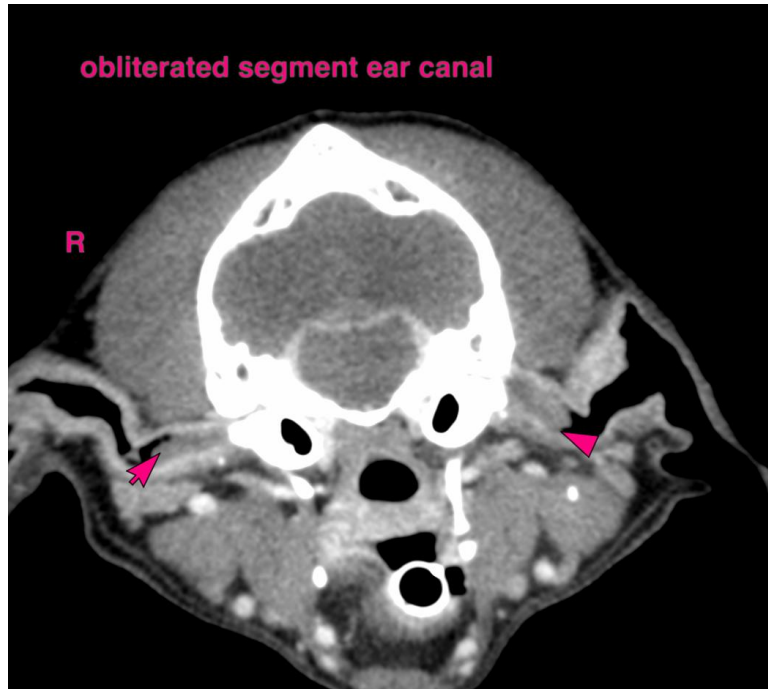
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

**Sebastian Schaub**, Sebastian Schaub, DVM, Dr. med. vet. DipECVDI  
[info@sonopath.com](mailto:info@sonopath.com)