



# VICSD GUIDE TO ADVANCED IMAGING

## MRI

## CT

<b>Brain</b>	<p><b>MRI IS THE BEST DIAGNOSTIC FOR INTRACRANIAL DISEASE.*</b></p> <ul style="list-style-type: none"> <li>• Cerebrovascular accidents</li> <li>• Congenital anomalies</li> <li>• Inflammatory/infectious disease</li> <li>• <b>PRIMARY AND METASTATIC NEOPLASIA*</b></li> <li>• Pituitary disease</li> <li>• Trauma with negative CT</li> <li>• Trauma &gt; 24 hours</li> </ul>	<p>CT is best used to evaluate the osseous structures of the skull and ear disease. CT is also an acceptable alternative screening study for evaluating brain lesions if MRI is cost prohibitive.</p> <ul style="list-style-type: none"> <li>• Head trauma &lt; 24 hours - subdural hematoma</li> <li>• Otitis – middle and inner ear</li> <li>• Skull fracture</li> </ul>
<b>Neck</b>	<ul style="list-style-type: none"> <li>• Neck masses</li> <li>• Oropharynx</li> <li>• Salivary gland masses</li> <li>• Thyroid masses (in conjunction with thyroid scintigraphy)</li> </ul>	<ul style="list-style-type: none"> <li>• Bony head and neck trauma</li> <li>• Dental associated masses</li> <li>• <b>NASAL NEOPLASIA*</b></li> <li>• Nasopharynx-masses/polyps</li> </ul>
<b>Orbits</b>	<ul style="list-style-type: none"> <li>• Optic nerve disorders</li> <li>• Ocular neoplasia</li> <li>• Retrobulbar neoplasms or masses</li> </ul>	<ul style="list-style-type: none"> <li>• Orbital trauma with fracture</li> <li>• Retrobulbar radiodense foreign body</li> </ul>
<b>Spine</b>	<p>MRI is the first-line diagnostic to evaluate the spinal cord and vertebral canal. MRI offers the ability to survey large segments of the spinal cord and does not require potentially harmful iodinated contrast for myelography.</p> <ul style="list-style-type: none"> <li>• Congenital anomalies</li> <li>• Discopondylitis</li> <li>• Intervertebral disc disease</li> <li>• Inflammatory disorders of the spinal canal</li> <li>• Neoplastic lesions of the spinal cord and vertebral canal</li> <li>• Post operative recurrence of intervertebral disc disease</li> </ul>	<p>CT is best used to evaluate osseous lesions of the vertebral canal such as neoplasia or other lesions that are radiographically evident. CT can be used to evaluate the spinal cord but requires a concurrent myelogram for most spinal studies.</p> <ul style="list-style-type: none"> <li>• Atlantoaxial malformation</li> <li>• Spinal trauma (vertebral fracture)</li> <li>• Intervertebral disc disease</li> <li>• <b>VERTEBRAL NEOPLASIA*</b></li> </ul>

**\*VICSD Exclusive Package which incorporates the modality into a complete imaging workup.**

VETERINARY IMAGING CENTER OF SAN DIEGO

7522-7524 Clairemont Mesa Blvd. San Diego, CA 92111 | P: 858.634.5430 | F: 858.634.5435 | E: info@vicسد.com



## MRI

## CT

### Abdomen

MRI is becoming more frequently used in veterinary abdominal imaging.

- All intra-abdominal masses
- Differentiation between hematoma and hemangiosarcoma
- Vascular evaluation

CT is very useful in evaluating the abdominal viscera. While abdominal CT is a primary screening test in human medicine, it is underutilized in veterinary medicine.

- Ectopic ureter evaluation
- IVP CT
- Metastatic evaluation
- Pancreatic evaluation
- **PORTOSYSTEMIC SHUNT EVALUATION\***
- Renal/ureteral calculus evaluation

### Orthopedics

MRI is best used to evaluate intra-articular trauma, such as cruciate ligament disease, or periarticular soft tissue injury, such as ligament or tendon injuries of the shoulder joint. In cases where soft tissue pathology is suspected, MRI is typically the first choice.

- Joint effusion
- Neoplastic osseous lesions
- Osteomyelitis and septic arthritis
- Primary bone tumors (in conjunction with bone scintigraphy)
- Soft tissue sarcomas
- Tendon or ligamentous injury

CT is very useful in evaluating bones and is more sensitive than radiographs for OCD lesions and elbow dysplasia. In older patients, CT is best in assessing fractures for bone pathology and pre-surgical planning. 3-D reconstructions are used for angular deformities and complex fractures. In cases where bone pathology is suspected, CT is typically the first choice.

- Osteochondrosis (OC or OCD) and elbow dysplasia
- **NEOPLASTIC/ PRIMARY OSSEOUS LESIONS\***
- Osteomyelitis/discospondylitis
- Angular limb deformities (in conjunction with 3-D reconstruction)
- Complex fractures (in conjunction with 3-D reconstruction)
- Tendon or ligamentous avulsion

### Pelvis

The pelvic canal cannot be evaluated with ultrasound. MRI is very useful in evaluating masses of the caudal abdomen and pelvic canal.

- Anal gland adenocarcinoma
- Bladder carcinoma
- Prostate carcinoma
- Soft tissue sarcoma
- Uterine neoplasia

CT is extremely useful in pre-surgical planning or complex pelvic fractures.

- Pelvic neoplasia
- Trauma (complex fractures)

### Thorax

MRI is rarely used in veterinary thoracic imaging.

- Cardiac imaging

CT is extremely useful in the evaluation of disorders of the lungs and thorax and is much more sensitive than survey radiographs for the detection of metastatic disease and pulmonary bulla.

- **METASTATIC SCREENING\***
- Pleural disease
- Pneumonia, abscess, and empyema
- Pneumothorax

### Vascular

- Intracranial aneurysm, arteriovenous malformation
- Thrombosis including aortic, caval,

- Cardiac malformation
- Pulmonary embolism
- **SHUNT EVALUATION WITH CONTRAST\***

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