WDM 万东 Animal care
美的集团旗下品牌

i_Space 1.5T VET

Superconducting Magnetic Resonance Imaging System

Product Presentation



August 2024

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Beijing Wandong Medical technology CO.,Ltd.

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WDM-EDT202408-i_Space 1.5T VET

Advantages of Vet MRI

No ionizing radiation damage: MRI does not use X-rays, so there is no radiation risk to animals or operators, making it suitable for long-term and repetitive imaging studies.

High soft-tissue resolution: MRI provides clearer soft-tissue contrast, helping to more accurately diagnose soft-tissue disorders

High Gradient Intensity and Gradient Climbing Rate: With high gradient intensity and gradient climbing rate, MRI is capable of presenting high-definition information on the tissue structure and function of living animals.

Scientific research and disease mechanism research: MRI has important applications in brain science, neuroimaging and disease mechanism research in animal models, which helps to promote the output of original scientific research results.



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Catalogue



1 About Midea WDM
Side by side with the Fortune 500, innovative R&D accelerates to empower the clinic

2 i_Space 1.5T VET Introduction
Creating a total solution for 1.5T MRI VET

3 Excellent Appearance and Performance
Refreshed appearance/quiet platform for total efficiency

4 Proprietary Solution
Animal-specific scanning orientation / sequence design / information management

5 Full Clinical Application
Application solutions and advanced functions for Craniocerebral/abdominal/osteomuscular

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About Midea WDM

Fortune 500 empowered to lead medical care

Beijing Wandong Medical Technology Co., Ltd ("WDM"), founded in 1955, is committed to providing global users with high-performance medical imaging equipment and digital intelligence solutions.

2021, WDM has become a subsidiary of Midea Group, one of the Fortune 500, and its development has entered the fast lane. The Group firmly invests in building a sustainable and efficient innovation industrial system through innovative talents, system and investment to accelerate the breakthrough of key technologies and innovative products. And through in-depth synergy with universities, hospitals and research institutions, focusing on clinical needs, forward-looking cutting-edge exploration, and jointly promote the attack of high-precision technology in the field of medical devices.

WDM has mastered the core technologies of X-ray, MRI and CT, and built a matrix of intelligent high-end products and solutions, including MRI, CT, DSA, DR, DRF, DM, mobile DR, and vehicle-mounted equipment. In the recent three years, WDM has strongly launched a number of world's first and industry's first medical heavy equipment, including i_Vision 1.5T liquid helium-free superconducting magnetic resonance, full-width DR, Open CT, 128 cloud CT and other original original new products, which provide abundant solutions for hospitals to improve quality and efficiency and green and sustainable development.

Headquartered in Beijing, with intelligent production bases in Beijing and Suzhou. With products exported to more than 100 countries, a cumulative total of more than 100,000 sets of equipment, and more than 10 consecutive years of No. 1 domestic sales in DR, WDM has transformed its trust into a driving force to keep moving forward, and is firmly committed to clinical empowerment.



5 R&D centers, specialized laboratories for X-ray CT MRI

Midea Central Research Institute Medical Device Research Institute + A I Research Institute + WDM Research Institute synergistic innovation, layout of clinical & cutting -edge technology R&D Matrix

Established joint laboratories with a number of universities and clinical validation cooperation with many high-level hospitals

Leading national application platforms, break through first medical heavyweights devices.

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History of WDM VET MRI

2016

First animal testing at Beijing MR workshop



2017

Started animal testing in collaboration with the Nano Research Center of the Chinese Academy of Sciences to develop relevant sequences for animal use.



2019

Magnetic scanning of dolphins in Beijing Zoo at WDM MR Workshop.



2019

The First Vet Superconducting MRI System installed at Guangzhou Lide Animal Hospital

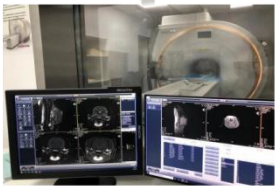


Partial installation users

Animal Medical center of Zhejiang University



Huazhong Agricultural University Animal Hospital



Chengdu Xiehe Yijia International Animal Hospital



Guangzhou Lide Animal Hospital



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1.5T VET MRI Total Solution

How can a superconducting MRI with higher image signal-to-noise ratio, higher resolution, faster scanning speed and better cost performance get all? With 20 years of iterative evolution of MR, WDM has launched i_Space 1.5T VET superconducting MR to give a definite answer. Equipped with top-of-the-line hardware, WDM provides comprehensive clinical solutions and worry-free pre-sale and after-sale maintenance services, creating a total solution for you, and assisting in the rapid improvement of clinical diagnostic capability in all dimensions.

Excellent Appearance &Performance



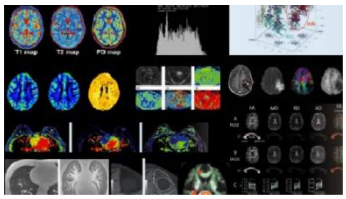
- Superior and elegant design that stands out
- Large **60cm** aperture fits a wide range of pet sizes
- Intelligent gradient waveform algorithm and Mute mute sequence, average scanning noise **70db**

Proprietary Solution



- **Animal-specific scanning orientation,** no need for complicated image orientation adjustments
- **Animal-specific sequences** designed to meet the needs of small field of view, thin layer scanning in the clinic
- **Image performance indicator** to effectively guide clinical parameter settings, mandatory function for animal scanning

Full Clinical Application



- From hardware to software, comprehensively incorporates the latest innovative technology of WDM, covering all parts of the body such as **craniocerebral, abdomen,osteomuscular,** etc. It is fully equipped with **advanced clinical functions of MR,** helps the diagnosis and treatment of diseases in terms of precision and efficiency, enhances the comfort of patients in the examination at the same time

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Excellent Appearance &Performance

Outwardly beautiful, inwardly technological

i_Space 1.5T VET superconducting MR system is a new intelligent MR launched by WDM with in-depth clinical research, which inherits WDM's two decades of R&D in the field of MR, and provides a comfortable and intimate testing environment for small animals and operators. Meanwhile, the acquisition speed and image quality of MR have been greatly improved, significantly increasing the circulation of small animals. It also pioneers the construction of an platform of intelligent magnet monitoring, data transmission, cloud storage, remote reading and maintenance, providing a **one-stop overall solution** from inspection, diagnosis, maintenance, storage to quality control, so that the users can truly enjoy the whole process of hassle-free service. i_ Space 1.5T VET superconducting MR system also adopts a **streamlined design**, which reduces the sharpness of the edges of the device, the appearance of the device is more smooth and clear, and the safety factor has been effectively improved. Equipped with a **large 60 cm aperture,** it is able to accommodate a wide range of small animal populations, from small mice to large dogs, enabling veterinary hospitals to accommodate more patients and bring in more revenue streams.



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Proprietary Solution

Animal-specific coils, improve efficiency and quality

Open head coil for easy anesthesia operation

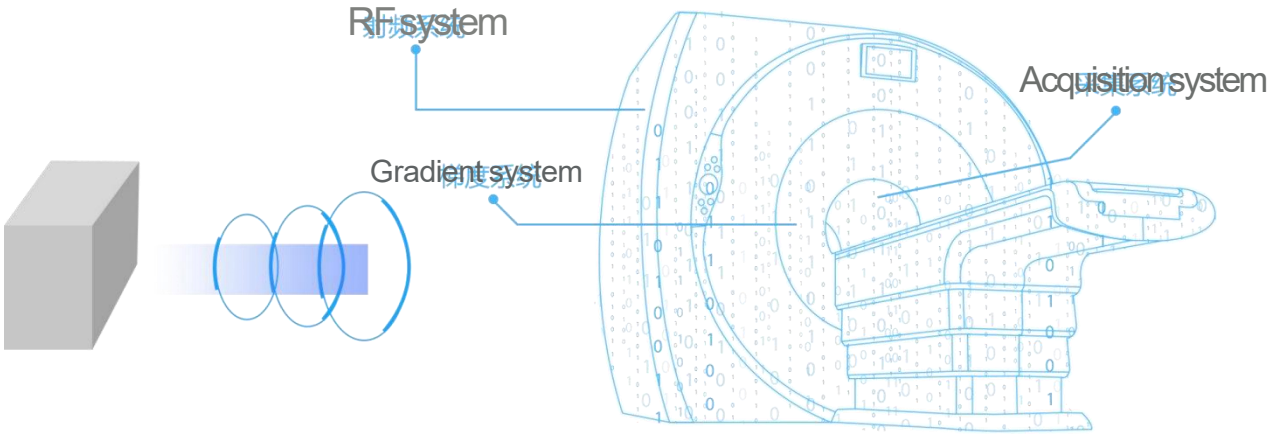
V-shaped spinal coil, conforms to the animal's body shape

Highly flexible coil, giving the technician more room for maneuver.



i_Space 1.5T VET superconducting MR system is equipped with animal-specific coils designed according to animal ergonomics, which not only perfectly fits veterinarians' habits, but also significantly improves animal imaging. It's available in a wide range of shapes and sizes of coils to accommodate animals of different sizes, which ensures excellent image quality and ease of use for veterinarians.

Fiber Optic Spectrometer System, Transmission without interference, attenuation reduction, effectively improving the signal-to-noise ratio by 38%

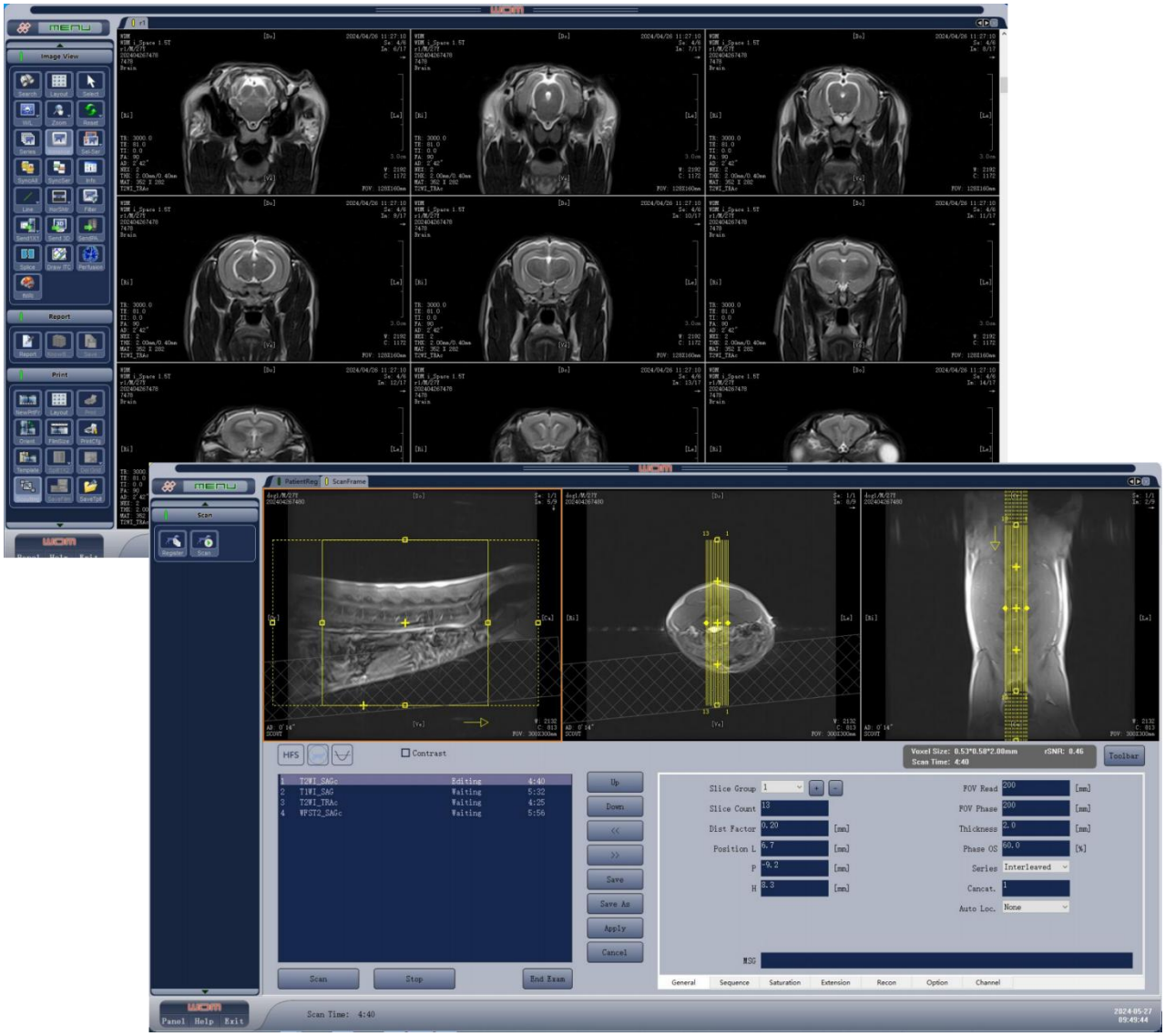


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Proprietary Solution

Animal-specific software , A new generation of operating systems for animals

- Animal-specific scanning orientation,no need for complicated image orientation adjustments
- Provides a variety of posing modes to accommodate a wide range of animal species
- Animal-specific sequences designed to meet the needs of small field of view, thin layer scanning in the clinic
- Enriched pet information management, including Species , Breed , Person Role , Anatomical Orientationpecies
- Image performance indicator to effectively guide clinical parameter settings, mandatory function for animal scanning

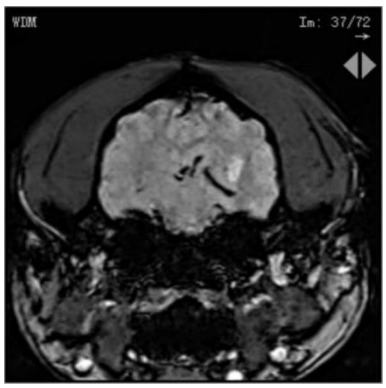


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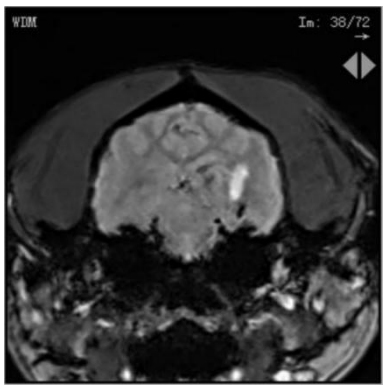
Full Clinical Application

Advanced Clinical Applications

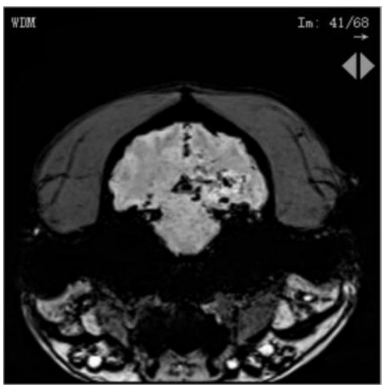
SWI can clearly show the quantity, size and location of microbleed lesions, which is important for tracking the changes in hemorrhagic lesions and monitoring the condition of animals in coma due to hemorrhage .SWI is highly sensitive in detecting intracranial microbleeds, which are usually associated with the deposition of deoxyhemoglobin and hemosiderin, and it can show focal low signal, which is valuable for evaluating microbleeds associated with cognitive dysfunction. SWI can find infarct sites and affected vessels that cannot be diagnosed by DWI , and can clearly diagnose acute cerebral hemorrhage caused by thrombolysis and reperfusion in acute cerebral infarction, which can help to evaluate whether cerebral infarction is accompanied by hemorrhage or not.SWI technology provides a high-resolution, high-contrast imaging modality in cranial MRI in animals, which can help to diagnose and study a wide range of brain diseases. .



SWI

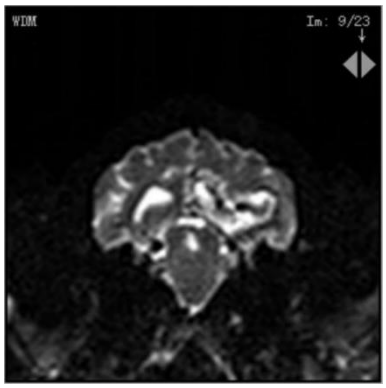


SWI mag

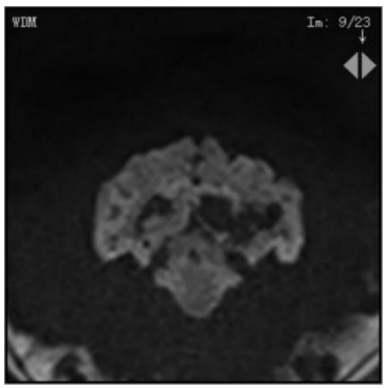


SWI MinIP

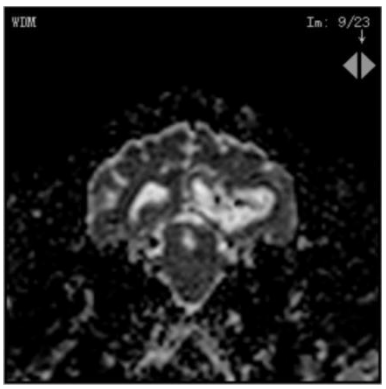
DWI can quickly reflect the diffusion of water molecules, and is especially widely used in the early diagnosis of stroke, helping to detect the occurrence of acute cerebral infarction as early as possible.DWI can also be used to diagnose other pathological conditions that affect the diffusion of water molecules, such as cytotoxic edema, etc. DWI combined with an ADC map can be used to more accurately determine whether the diffusion of water molecules is truly limited.High signal on DWI combined with low signal on the ADC map is usually indicative of true diffusion restriction, such as in acute stroke, high-grade gliomas, and lymphomas, etc.



EPI_DWI B0



EPI_DWI B1000



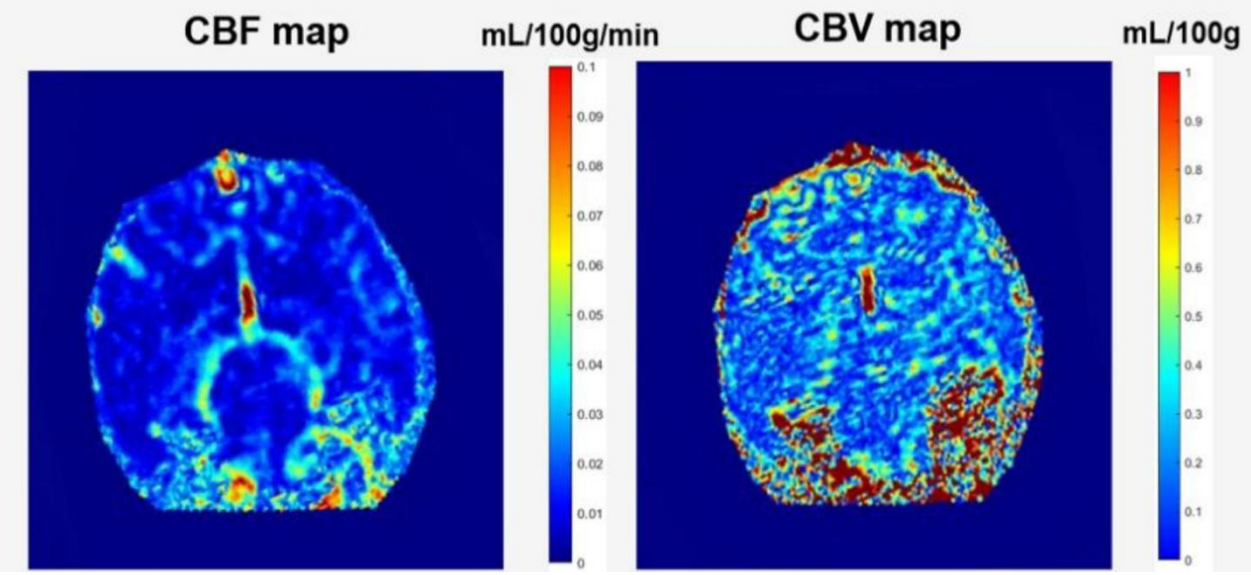
EPI_DWI ADC

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Full Clinical Application

DSC Brain perfusion imaging technique

In the field of veterinary medicine, understanding the blood perfusion of animal brain tissues is extremely important for diagnosis and treatment. Since the physiological or pathological activities of brain tissues are closely related to the local blood supply, obtaining information about the local tissue perfusion and mastering its hemodynamic and functional changes are especially crucial for clinical diagnosis and treatment. Especially when dealing with sudden cerebrovascular accidents in animals, Magnetic Resonance Imaging (MRI) perfusion technology is particularly important. This technique can help veterinarians predict the size of the cerebral infarct zone, assess the risk of spread to adjacent areas, and design effective salvage therapies. By intravenously injecting a contrast agent followed by an isotropic dynamic scanning of selected brain tissue levels, MRI brain perfusion technology is able to obtain a time- intensity profile for each tissue location. In animal medicine, the application of MRI brain perfusion technology not only improves diagnostic accuracy , but also helps to develop individualized treatment plans , monitor treatment effects , and make timely adjustments to treatment strategies. This is of great significance in increasing the cure rate and improving the prognosis of animals.



1.5T Cerebral blood flow and cerebral blood volume in animals experimentally perfused with DSC

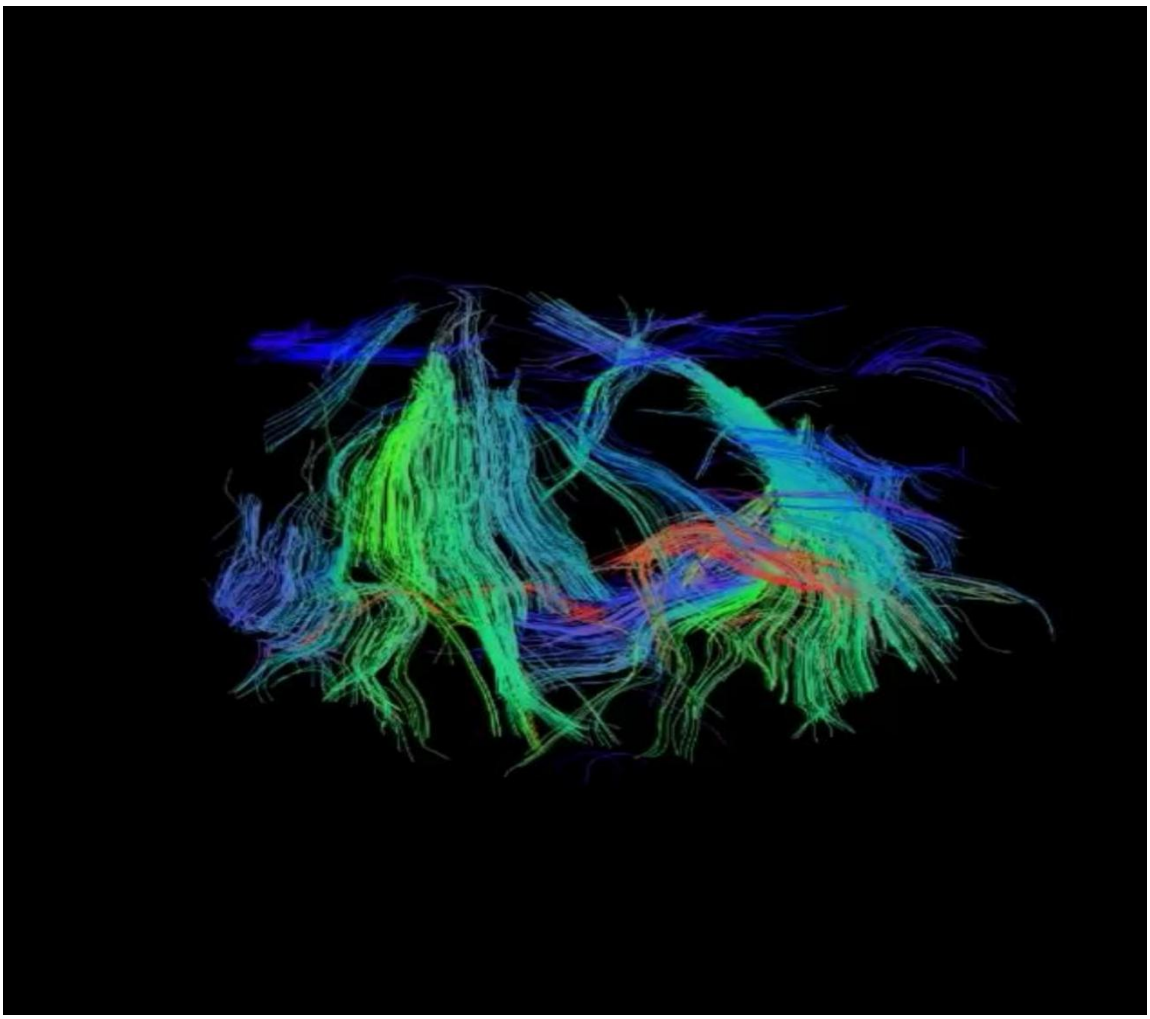
- Time-intensity curve analysis
- De-convolutional mathematical modeling calculations
- Automatic pre-processing: fully automatic motion correction, background removal
- Selection of arterial points: automatic selection of arterial points
- Calculation of parameter maps: automatic calculation of relative cerebral blood flow, relative cerebral blood volume, mean transit time, peak arrival time parameter maps and support of different color chart schemes

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Full Clinical Application

Neurofiber tract tracking ADP-DTI

Neurofiber tract tracking ADP-DTI (Advanced Processing Diffusion Tensor Imaging) is a neuroimaging analysis technique used to reconstruct and visualize nerve fiber tracts in the brain . In the field of veterinary medicine , this technology plays a crucial role. It is based on data from Diffusion Tensor Imaging (DTI), which calculates and tracks the diffusion direction of water molecules in neural tissues to determine the orientation and connectivity patterns of nerve fiber bundles. This technique contributes to the study of the structure and function of the animal brain, as well as to the understanding of issues related to neurological diseases, brain injuries and normal brain development in animals . Neurofiber tract tracking ADP-DTI technique has a wide range of applications in animal neuroscience research, neurosurgery planning and clinical diagnosis.

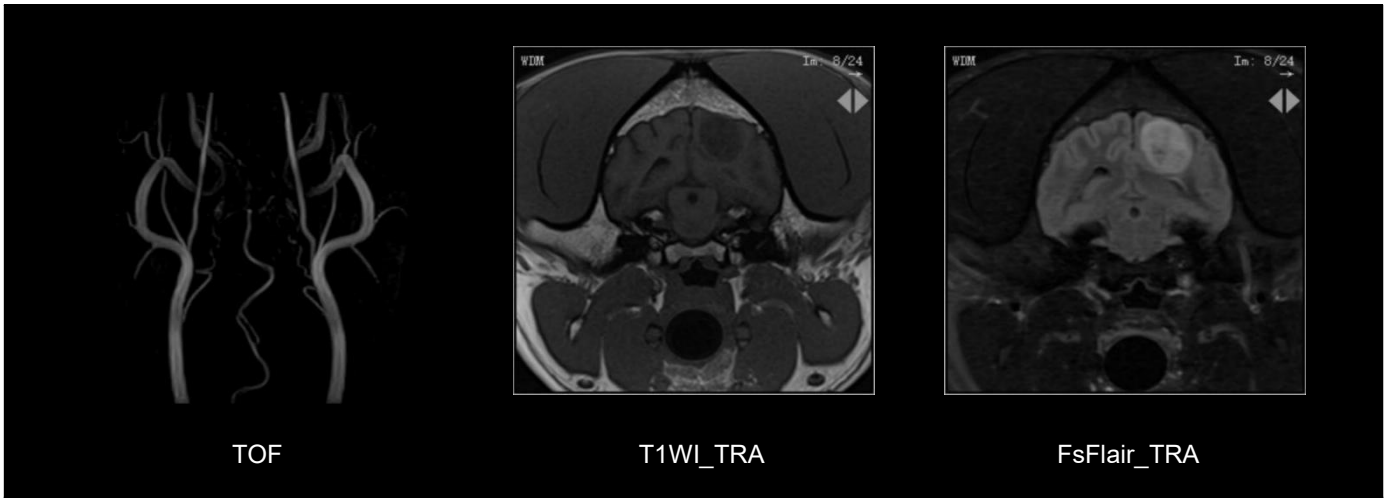


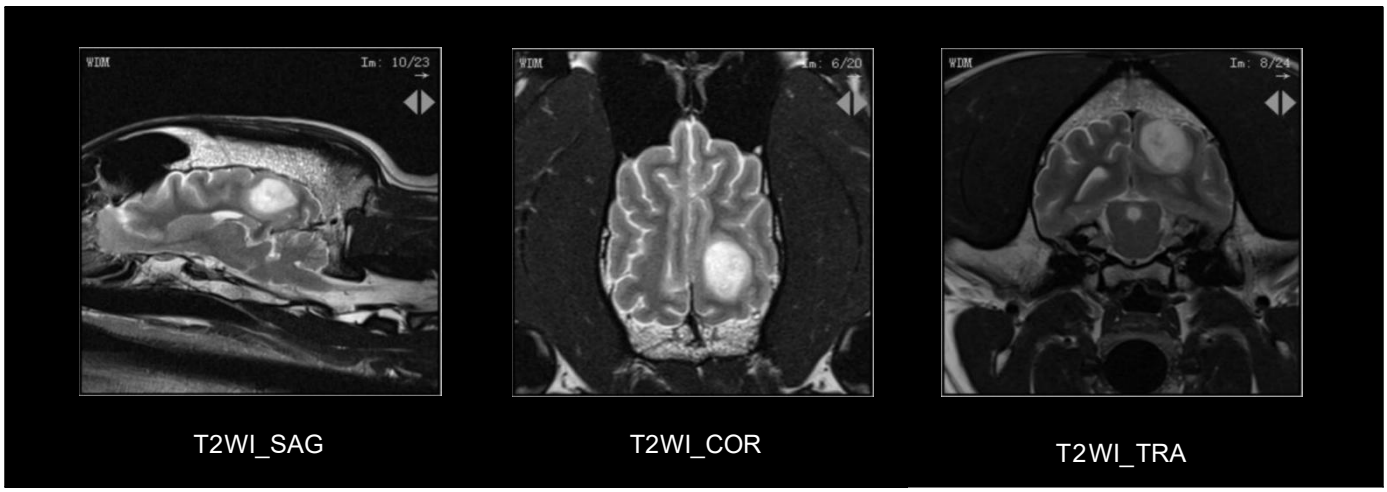
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Full Clinical Application

Craniocerebral Disease Solutions

Small animal MRI technology has developed through a series of optimized scanning sequences, protocols and workflows designed specifically for the cranial system of small animals. This technique leverages the properties of hydrogen atoms (protons) in different tissues to generate clinical images with high contrast. In small animal MRI, neural and soft tissues such as gray matter, white matter, and cerebrospinal fluid can exhibit significant contrast. Commonly used imaging sequences include T2-weighted (T2w) and T1-weighted (T1w) sequences. T2w sequences are particularly adept at highlighting high contrast in soft tissues, while T1w sequences are able to clearly depict the edges of bones. In addition, FLAIR sequences combine the features of T1w and T2w to effectively distinguish between free fluid and bound water, and are particularly suitable for diagnosing those lesions adjacent to the ventricles or subarachnoid space.



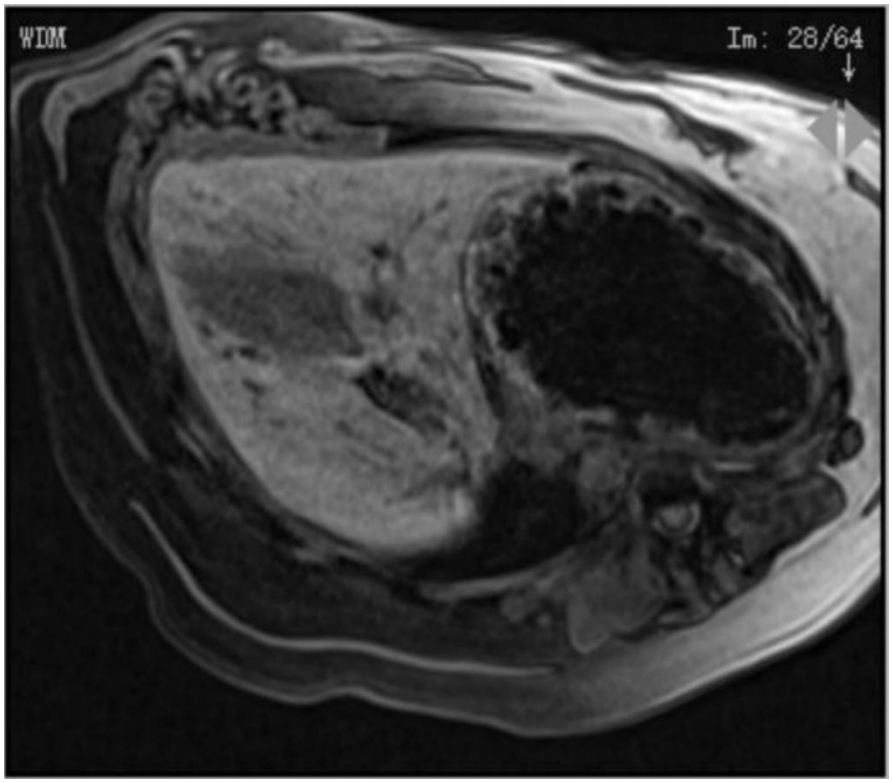


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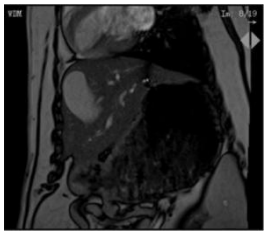
Full Clinical Application

Abdominal Disease Solutions

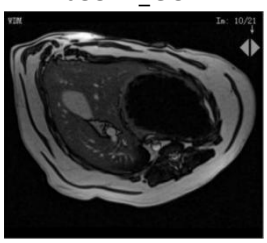
WDM MRI systems have demonstrated excellent performance in the field of small animal abdominal examinations. Relying on its excellent magnetic field uniformity,WDM has developed customized sequences, protocols and workflows for abdominal scans to ensure accurate imaging of small animal abdomens. High-quality, high-resolution images can be captured using either breath-hold or respiratory-triggered imaging protocols. WDM MRI systems utilize advanced motion suppression techniques, including multiple breath-hold and breath-triggered techniques, to effectively minimize the effects of respiratory motion. Combined with Fast Spin Echo (FSE) and Propeller K-Space Filling technology, WDM MRI system not only enhance imaging speed in T2-weighted imaging, but also significantly reduces motion artifacts, ensuring image clarity and diagnostic accuracy.



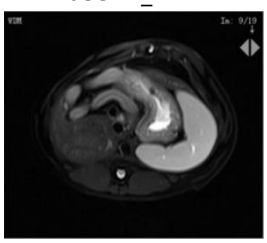
3D VALUE



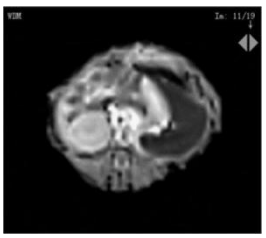
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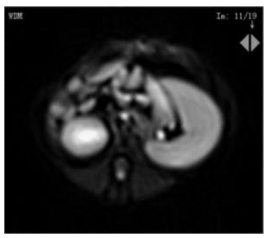
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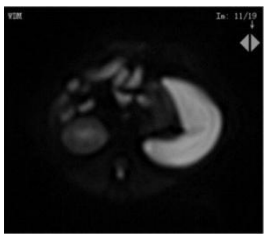
FST2 TRA



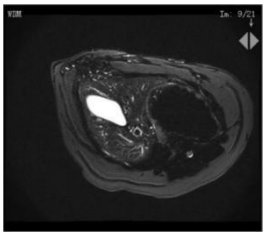
DWI ADC



DWI B0



DWI B800



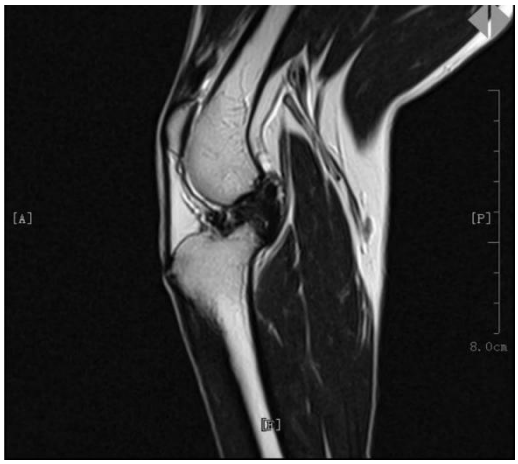
T2 Prop

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Full Clinical Application

Bone & Muscle Disease Solutions

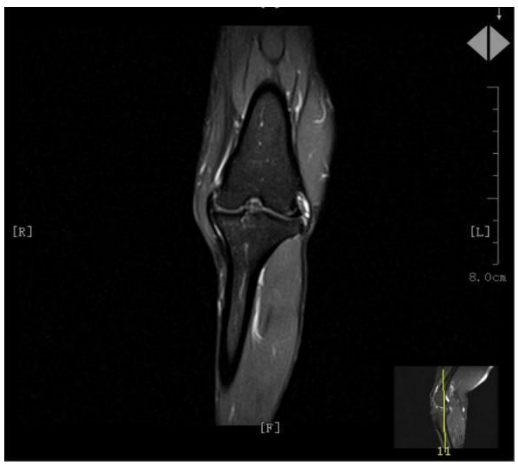
MRI technology has significant advantages in small animal orthopedic examinations, being able to clearly visualize structures such as cartilage, joint capsule, synovial fluid and joint ligaments. This gives MRI an unrivaled advantage in diagnosing lesions such as articular cartilage damage and joint effusion, and can even detect cartilage degeneration and necrosis earlier than other imaging modalities. WDM successfully acquired the world's leading orthopaedic specialty MRI manufacturer Esaote Italy in 2017, and fully integrated Esaote's related sequences and software technologies into WDM MRI products. With sequences, protocols and workflows optimized for orthopaedic applications, combined with extremely high magnetic field uniformity and high- density coils, WDM MRI are capable of capturing high-quality orthopaedic images. In small animal orthopedic imaging, the application of WDM MRI technology makes small lesions in joints invisible, greatly improving diagnostic accuracy and reliability. Whether it is cartilage damage, joint effusion or other joint lesions, WDM MRI provides clear and detailed images, providing clinicians with a powerful diagnostic tool. The integration and optimization of this technology provides important support for small animal health and disease management.



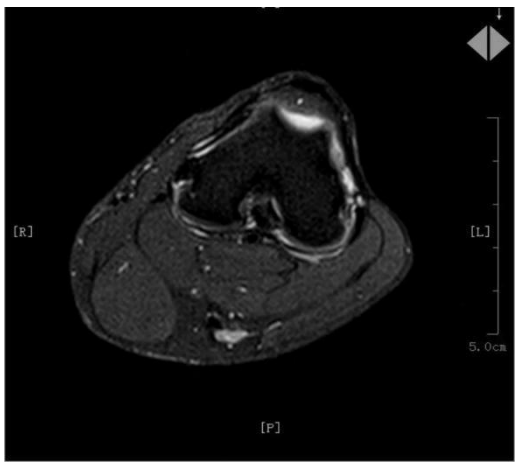
T2WI_SAG



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FST2_COR



FST2_TRA

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