Final Report
MRI OF LEFT KNEE

PROFESSIONAL INTERPRETATION BY: VITAL IMAGING MEDICAL GROUP
TECHNICAL SERVICES PROVIDED BY: RADSTAR STAND-UP MRI

Patient Name: MARIA DEL ROSARIO SANTILLAN **Patient ID:** 190008
D.O.B: Mar 26,1967 00:00 **Referring Physician:** VLAD GENDELMAN
Center MRN: 190008
Study Date: Aug 05,2014 05:47 **Report Date:** Aug 07,2014 09:45
Approved By: Stanton Kremsky MD **Approval Date:** Aug 07,2014 10:55
To Contact Radiologist Call (714)367-4713

PROFESSIONAL INTERPRETATION REPORT

TECHNIQUE:
Multiplanar images were obtained without contrast in coronal (T1-weighted and STIR), axial (T2-weighted gradient echo), and sagittal (T2-weighted and PD).

The following person contributed to the production of the report: Cliff Tao

INDICATION: Knee and leg pain.

FINDINGS:
A 1.9 x 1.8 cm mass in the popliteal space. The anterior and posterior cruciate ligaments are intact. Medial and lateral collateral ligament complexes are normal. Normal medial and lateral menisci. The patellar cartilage is within normal limits. The tibiofemoral articular cartilage is normal. There is no evidence of osteochondral injury. The extensor mechanism is within normal limits. The overall bone marrow signal is normal. Normal musculature and tendons.

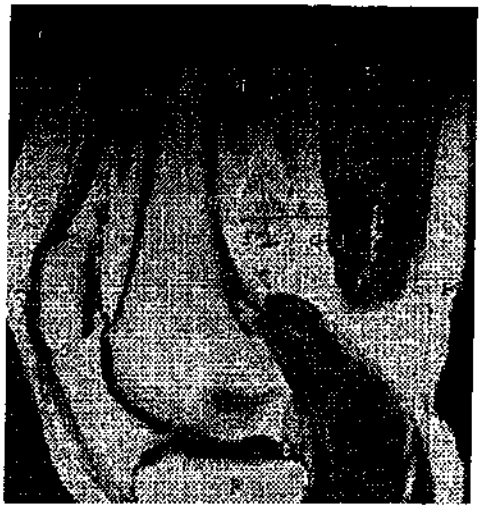
IMPRESSION

1. Possible hemangioma, lymphadenopathy, pseudoaneurysm or other mass of the posterior knee. Please correlate clinically and follow-up with ultrasound exam.
2. No other abnormalities noted.

Thank you for referring this patient

Approved and electronically signed by me on the approved date below.

Stanton Kremsky MD
Aug 07,2014 10:55



Scientific Articles on Positional/Dynamic MRI of Spine and Extremeties Several published scientific studies and reviews have established that positional/dynamic MRI often reveals pathology that is clinically relevant but radiologically occult when imaged in a single position. Below you will find a sampling of such articles. More articles may be available upon request).

SPINE

1.Magnetic resonance imaging of the cervical spine showed spinal cord signal changes on T2 weighted images without any spinal cord compression. Flexion-extension plain radiographs of the spine showed no instability. Dynamic MR imaging of the cervical spine, however showed compression on extension. Compression of the spinal cord was caused by dynamic annulus bulging and ligamentum flavum buckling. (Guppy KH, Hawk M, Chakerbarti I, Banerjee A. The use of flexion-extension magnetic resonance imaging for evaluating signal intensity changes of the cervical spinal cord. J Neurosurg Spine. 2009 Apr; 10(4):366-73).
2. The dominant motions at both the lower cervical and entire lumbar spine, where most clinical pathology occurs, are flexion-extension. (American Medical Association (AMA) Guides to the Evaluation of Permanent Impairment, 5th Edition, page 378).
3.Degenerative changes in the intervertebral disc significantly affect the kinematic patterns under postural load in vivo. kMRI is a useful tool to quantify the kinematic behavior of degenerative intervertebral discs.(Zou J, Yang H, Miyazaki M, Morishita Y,Wei F, McGovern S, Wang JC. Dynamic Bulging of intervertebraldiscs in the degenerative lumbar spine. Spine (Phila Pa 1976). 2009 Nov 1;34(23): 2545-50).

KNEE

4. MR imaging allows excellent non-invasive evaluation of knee joint kinematics with weight bearing. This tool may potentially be used for assessing knee kinematics in patients with knee pathology.(Patel VV, Hall K, Ries M, Lotz J, Ozhinsky E, Lindsey C, Lu Y, Majumdar S. A three-dimensional MRI analysis of knee Kinematics. J Orthop Res.2004 Mar; 22(2): 283-92).
5. Bone marrow edema is seen in osteoarthritis, avascular necrosis, and other clinical conditions including the bone edema syndrome. Dynamic contrast-enhanced magnetic resonance imaging may be useful tool for the early diagnosis of bone perfusion abnormalities and may be used to characterize marrow edema associated with a number of clinical conditions. (Aaron RK, Dyke JP, Ciombor DM, Ballon D, Lee J, Jung E, Tung GA. Perfusion abnormalities in subchondral bone associated with marrow edema, osteoarthritis, and avascular necrosis. Ann N Y Acad Sci.2007 Nov; 1117: 122-37).
6. Visualization of the moving normal and torn anterior cruciate ligaments indicates that kinematic MR imaging of the moving knee is advantageous in evaluating the continuity and tension in the cruciate ligaments. (Niitsu M. Kinematic MR imaging of the knee. Semin Musculoskeletal Radiol.2001 Jun; 5(2): 153-7).

WRIST

7. The carpal tunnel syndrome is the most common of the nerve entrapment syndromes. Also well known is the fact that the CTS can be a consequence of prolonged periods of wrist flexion. With the advent of magnetic resonance imaging (MRI), there is now a noninvasive technique that can accurately image the contents of the carpal tunnel and the anatomic relationships between these structures. (Skie M, Zeiss J, Ebraheim NA, Jackson WT. Carpal tunnel changes and median nerve compression during wrist flexion and extension seen by magnetic resonance imaging. J Hand Surg Am.1990 Nov; 15(6): 934-9).
8.MR imaging of the carpal tunnel has become a widely accepted means of investigating the median nerve entrapment syndrome with the nerve consistently identifiable on standard axial views. The alignment of the median nerve in the carpal tunnel, its shape, and its relationship to the flexor tendons are variable and dependent on wrist positioning. These findings may explain why certain wrists motion, flexion in particular, predisposes a person to carpal tunnel syndrome.(Zeiss J, Skie M, Ebraheim N, Jackson WT. Anatomic relations between the median nerve and flexor tendons in the carpal tunnel: MR evaluation in normal volunteers. AJR Am J Roentgenol.1989 Sep; 153(3): 533-6).
9. The radius of flexor tendon curvature is not constant as previously assumed and is larger than previous estimates. The addition of tendon force with the wrist flexed acts to reduce the radius of curvature which further increases the contact stress on the median nerve and other wrist structures. The use of MRI to determine the tendon paths has provided new insight into the relationships between the finger flexor tendons and other structures at the wrist.(Keir PJ, Wells RP. Changes in geometry of the finger flexor tendons in the carpal tunnel with wrist posture and tendon load: an MRI study on normal wrists. Clin Biomech(Bristol Avon).1999 nov;14 (9):635-45).