Vancouver CoastalHealth
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MEMORANDUM

Date: May 22, 2012
To: All Physicians

From: Dr. Simon Bicknell, Medical Director Medical Imaging LGH
CC: Dennis Hummerston, Operations Director, Coastal HSDA; Egidio Pasin, Site Coordinator Medical Imaging LGH; Bruce Coulter, MR/CT/IVR Supervisor Medical Imaging LGH;

Re: MR Prioritization

Dear Physicians,

As you are aware, the demand for MR Imaging is continuing to rise and as a department we are focusing on providing the best care possible for our patients.

For quite some time now, we have been requesting that referring physicians give us their own indication as to the degree of urgency an examination request may have, based on many different factors that are best known by that referring physician. As part of the latest round of MRI funding from the Ministry of Health, we have been instructed to indicate a priority on each and every requisition that is booked for an MRI. Although this will be an inconvenience to you and may result in imaging delays for your patient(s), it is necessary for us to ensure timely service for our patients and appropriate management of our ever-growing waitlist. **Please note, we still require physicians to indicate the degree of urgency an examination request may have in addition to the Ministry of Health priority.**

Attached to this memorandum is a priority coding guideline. Effective Tuesday, July 3rd, 2012 all requisitions to be booked for an MRI at LGH will require a priority coding (P1 - 4) as per the attached guidelines. Requisitions that are received from a physician without a priority coding will simply be returned for that information.

The guidelines need to be interpreted in context of each individual's needs, as there may be additional factors to consider such as NSF in renal failure patients as well as other factors including age and other supporting imaging or patient information.

Please note, the P1-4 priorities do not have an assigned timeline associated with them. The Ministry of Health uses these priorities for categorization purposes only.

Thank you for your anticipated cooperation and assistance in this matter.

Yours sincerely,

Dr. Simon Bicknell

Level 1 Guidelines for Prioritization of Magnetic Resonance Imaging (MRI) Studies

Where imaging is critical for the immediate management of the patient. The patient/case should be directly discussed with the Radiologist. This includes Inpatients, Outpatients, and Emergency patients.

- Preoperative evaluation of posterior fossa neoplasm, deep supratentorial neoplasm, or exclusion of additional metastatic lesions, if CT does not answer these question
- Acute hydrocephalus where cause not identified on CT
- Infection: suspected encephalitis
- Suspected intracranial venous thrombosis if CTA unavailable or unable to be performed.
- Preoperative evaluation of spinal cord neoplasm
- Evaluation of spinal cord injury in acute trauma if no bony abnormality is noted, to assess cord injury or compression
- Acute cord compression thought to be due to malignancy
- Acute stroke (CT preferred as initial investigation)
- Acute osteomyelitis
- Aortic dissection (CT equivocal)
- Intracranial hemorrhage - assessment of underlying lesion
- MRA's (where good quality CT or conventional angio not possible)
- Muscle necrosis or compartment syndrome
- Infection - AIDS with suspected focal lesion
- Any acute hydrocephalus if MRI needed for Rx planning (e.g. ventriculostomy)
- Any spinal column or spinal cord injury pre-op (e.g. for ligament assessment and to R/O associated disc protrusion
- Suspected encephalitis or abscess.

Level 2 Guidelines for Prioritization of Magnetic Resonance Imaging (MRI) Studies

Lesions/Disease processes in which the diagnosis is known and immediate treatment is not necessary, or lesions/disease processes which by history and physical findings do not require immediate treatment but do require prompt evaluation. The results of the MRI study will likely alter patient management and provide additional information for surgical or medical management.

- Acute joint injury - if MRI will determine need for surgery
- Primary sarcoma of bone or soft tissue
- Preoperative assessment of possible mediastinal or chest wall invasion by tumor if CT is inconclusive
- Preoperative assessment of renal vascular invasion by renal cell carcinoma if ultrasound or CT is inconclusive
- R/O abscess, CT inconclusive or negative
- R/O occult fractures from ER: Hip / scaphoid
- Suspected ADEM (ped)
- Supratentorial neoplasm - further delineation of a lesion seen on CT, or exclusion of additional metastatic lesion when surgery not immediately contemplated
- Infratentorial neoplasm - high suspicion of posterior fossa neoplasm with CT negative
- Skull base and nasopharyngeal tumors - for further localization and surgical planning
- Craniocervical junction lesions - strong clinical suspicion or follow-up
- Chronic osteomyelitis
- Strong suspicion of avascular necrosis if plain film, nuclear medicine or CT inconclusive, or evaluation of opposite hip if surgery contemplated
- Suspected intracranial vascular lesion
- NAT (ped)
- Suspicion of spinal osteomyelitis or discitis
- Cardiac - viability assessment
- Cardiac - mass

Level 3 Guidelines for Prioritization of Magnetic Resonance Imaging (MRI) Studies

Lesions/Disease processes in which the diagnosis is known and immediate treatment is not necessary, or lesions/disease processes which by history and physical findings do not require immediate treatment and delays in MRI evaluation will not negatively affect treatment outcomes. The results of the MRI study will likely alter patient management and provide additional information for surgical or medical management.

- Pituitary adenoma - suspected
- Acoustic neuroma - suspected
- Multiple sclerosis: head and c-spine - initial diagnosis
- Further assessment of orbital mass lesions where CT is inconclusive or for further assessment of optic chiasm or intracanalicular portion of optic nerve
- Child with suspected metabolic disorder
- Congenital brain and spinal disorders where surgical management is contemplated
- Spinal cord lesion - syrinx, tumor, cyst. Follow-up postoperative spinal cord conditions and assessment of post-traumatic spinal cord damage
- MRCP
- Other acute joint injury still largely restricted to knee, elbow and ankle. Definitely not "bilateral joints"
- Locking joint - knee, elbow, ankle
- Chronic joint symptoms - if MRI will determine need for surgery - e.g. query meniscal tear
- Complex congenital heart disease
- Evaluation of diseases of the great vessels, if further characterization is required after CT, or where iodinated contrast allergy makes MR the choice for initial evaluation of abnormalities of the aorta and pulmonary artery
- Further characterization of mediastinal and apical masses, apical chest masses where CT inconclusive
- Staging of invasive carcinoma of the bladder and prostate
- Pretransplant assessment of hepatic vasculature
- Further assessment of focal hepatic lesion to differentiate between hemangioma and other conditions, if US, CT and NM inconclusive
- Further hepatic evaluation for additional focal lesion prior to resection for neoplastic disease
- Staging of cancer of the vagina, cervix, vulva and uterus
- Metastatic w/u
- Ovarian mass evaluation
- Fetal abnormality
- Monitor chemo/radiation treatment for cancer patients
- Cardiac - r/o ARVD
- AVN - any joint or bone – for children
- Breast - assessment of residual or recurrent disease post lumpectomy

Level 3 Guidelines – continued…

Breast - unknown primary with axillary node positive malignancy
Breast - assess response to neoadjuvant chemotherapy
Cardiac – constrictive pericarditis (when cardiac ultrasound equivocal)
Cardiac – non ischemic cardiomyopathy

Level 4 Guidelines for Prioritization of Magnetic Resonance Imaging (MRI) Studies

This category includes cases where MRI is required for follow-up on patients with stable findings or patients in whom lesions/disease processes may undergo slow progression or those for which surgery is not required or limited therapeutic options are available.

- Post-traumatic brain and spinal cord assessment (remote injury)
- Chronic hydrocephalus without underlying mass lesions
- Assessment of complex congenital brain and spine malformations
- Chronic joint symptoms where other forms of investigations have been performed and are inconclusive
  - Shoulder- should have arthrogram first for rotator cuff tear. For possible labral tears rather CT or MR arthrograms
  - Elbow - chronic elbow pain, query loose body - CT better if calcified, MR if not
  - Wrist - should have x-ray, stress views, arthrogram and CT first
  - Hip - is not susceptible to internal derangement and generally MRI is not indicate except query labral tear - MR arthrogram
  - Knee - chronic or bilateral pain, patellofemoral syndrome / chondromalacia
  - Ankle - chronic
- Muscular disorder
- Muscloskeletal storage disorder (e.g. Gaucher's)
- Multiple sclerosis follow-up
- Neurodegenerative disorders
- Dementing conditions
- Chronic seizure disorder for patients in whom surgery is not planned and CT negative, with no EEG focus
- Screening of family members with family history of aneurysm
- Pituitary adenoma - for follow-up or patients not being considered for surgery
- Degenerative disc disease with persistent symptoms
- Postoperative spine with persistent symptoms
- Follow-up for syringomyelia
- Follow-up aortic dissection
- Temporomandibular joint-internal derangement
- Bone and soft tissue tumors likely to be benign
- Seizures - child with seizures and EEG focus, children awaiting epilepsy surgery, adult onset first focal seizure, postoperative assessment where CT inconclusive for extent of removal or assessment of residual lesion
- Breast implant evaluation, screening for malignancy in certain high risk groups eg. BRCA1 carrier, and "problem solving" in diagnostic work-up
- Cardiac - ARVD