ABNORMAL BRAIN AND SPINE MRI REFERRAL GUIDELINE

MAINE MEDICAL PARTNERS - NEUROLOGY • 49 SPRING STREET, SCARBOROUGH, ME • (207) 883-1414

HIGH RISK

SUGGESTED EMERGENT CONSULTATION

SYMPTOMS AND LABS

Newly found brain/spinal cord mass or lesion with or without signs or symptoms (except for meningioma, which are to be referred to neurosurgery)

Demyelinating lesion with focal neurological signs/symptoms

Acute restricted diffusion positive lesion

EXAM: Asymptomatic OR seizure, HA, focal weakness or numbness, cognitive changes

SUGGESTED PREVISIT WORKUP

Have films imported to IMPAX or sent to MMP Neuro STAT and have adult neurology review for scheduling

Send to ER if patient is decompensating or has significant edema around the lesion

MODERATE RISK

SUGGESTED CONSULTATION OR CO-MANAGEMENT

SYMPTOMS AND LABS

Known mass/lesion that has remained stable but never evaluated

Possible demyelinating lesion in patient < 60 who is asymptomatic

Subacute stroke or small vessel disease in patients with no known vascular risk factors

Ventriculomegaly, concerning for NPH

Atrophy out of proportion to age

Colloid or arachnoid cyst with or without symptoms

Chiari I malformation

Cavernous malformation

SUGGESTED WORKUP

Referral to adult neurology and patient will be seen next available

Ensure all imaging has been sent or pushed to IMPAX before scheduling.

LOW RISK

SUGGESTED ROUTINE CARE

SYMPTOMS AND LABS

“Small vessel disease” in patients with known vascular risk factor

Global atrophy without symptoms

Aneurysm

Pituitary adenoma

SUGGESTED MANAGEMENT

Management of vascular risk factors

Refer aneurysm to neurosurgery or vascular neurology

Refer pituitary tumors to endocrine and neurosurgery

CLINICAL PEARLS

- It is common to see nonspecific T2 hyperintense lesions in the subcortical white matter in patients with risk factors for small vessel disease (hypertension, hyperlipidemia, tobacco use, diabetes). This is also common in older patients (> 70 y/o) or in patients with history of migraines.
- Not all newly discovered mass lesions necessarily need steroids. Steroids are needed based on clinical presentation- if patient is asymptomatic or mildly symptomatic, no need to reflexively start steroids.
- Ensure all images are either pushed to IMPAX or have been received at our office prior to scheduling a patient to discuss an abnormal MRI. Having MRI reports available is also helpful, but not as important as having the actual images.

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ATAXIA/IMBALANCE/FALLING REFERRAL GUIDELINE

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HIGH RISK

SUGGESTED EMERGENT CONSULTATION

SYMPTOMS AND LABS

Less than 1 month of imbalance, ataxia or repeated falls or rapid progression of symptoms

EXAM:
Ataxia, muscle weakness, hyperreflexia, sensory loss, nystagmus or dysconjugate gaze

LABS/IMAGING:
Forward test results performed to date

SUGGESTED PREVISIT WORKUP

PT consultation for safety ASAP.

Send to ER if sudden onset of symptoms

MODERATE RISK

SUGGESTED CONSULTATION OR CO-MANAGEMENT

SYMPTOMS AND LABS

Greater than 1 month of imbalance, ataxia, or falling

Second opinion request

EXAM:
Ataxia, muscle weakness, sensory loss, nystagmus or dysconjugate gaze

LABS:
Forward test results performed to date

SUGGESTED WORKUP

PT consultation for safety ASAP

LOW RISK

SUGGESTED ROUTINE CARE

SYMPTOMS AND LABS

3rd or 4th opinion- Unless change in clinical status

Chronic diagnosis without recent change

EXAM:
Normal or chronic unchanged findings

SUGGESTED MANAGEMENT

PT consultation for safety

CLINICAL PEARLS

- Very often after neurologic evaluation and diagnosis the imbalance persists. Early PT evaluation and therapy for safety is of paramount importance.

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CONFUSION/DELIRIUM REFERRAL GUIDELINE

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HIGH RISK

SUGGESTED EMERGENT CONSULTATION

SYMPTOMS AND LABS

Recurrent bouts of confusion over weeks or continuous cognitive decline over days to weeks

SEND TO ER:
Rapid onset and not resolving

EXAM:
Assess for neurologic deficit or evidence of seizure

SUGGESTED PREVISIT WORKUP

ER Eval:
Medical team to rapidly assess for source: Cardiac/hemodynamic, respiratory, Metabolic, infectious, toxic, traumatic, hormonal, nutritional. Psych?

Elderly: assess UTI, constipation, pain, depression, lack of sleep

LABS:
CMP, CBC, Tox, TSH, B12, UA, cultures, telemetry, imaging

MODERATE RISK

SUGGESTED CONSULTATION OR CO-MANAGEMENT

SYMPTOMS AND LABS

Longstanding episodes of confusion with normal baseline mental status

Second opinion

EXAM:
Assess for neurologic deficit or evidence of seizure

LABS:
Send any labs, EEG, Imaging

SUGGESTED WORKUP

Vital history for confusion:

- Duration
- Pre/post features
- Trajectory
- Precipitating/alleviating factors
- Associated exam findings

LOW RISK

SUGGESTED ROUTINE CARE

SYMPTOMS AND LABS

Clear non-neurologic source:
Cardiac/hemodynamic, respiratory, metabolic, infectious, toxic, med effect, traumatic, hormonal, nutritional, pain, psychiatric do not require neurologic consultation

EXAM:
Normal exam or functional exam

SUGGESTED MANAGEMENT

If non neuro source found:

Complete treatment, reverse trigger

Consider combination of etiologies

LABS:
Assess for metabolic derangement, infection, or other clear cause for encephalopathy

CLINICAL PEARLS

- Untreated delirium may drift to dementia- workup is urgent
- Delirium can present in various forms: agitation/ fluctuating mental status/ apathy/mimicking focal neuro deficit
- Universal cognitive deficit in Delirium: Altered of level of consciousness

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DEMENTIA/MILD COGNITIVE IMPAIRMENT REFERRAL GUIDELINE

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HIGH RISK

SUGGESTED EMERGENT CONSULTATION

SYMPTOMS AND LABS

Rapid over days/weeks

Rapid over hours/days- rule out delirium

EXAM:
Cognitive exam documented

SUGGESTED PREVISIT WORKUP

If delirium suspected recommend medical evaluation prior to neuro consult: Consider Metabolic, infectious, toxic, traumatic, hormonal, nutritional, sleep disorder, psychiatric

LABS:
CMP, CBC, Tox, TSH, LFT, UA, CT/MRI, LP?

MODERATE RISK

SUGGESTED CONSULTATION OR CO-MANAGEMENT

SYMPTOMS AND LABS

Progressive cognitive decline over weeks/months /years

Candidate for clinical trial for dementia

Atypical features (park.)/young onset
Transfer of care

EXAM:
MOCA/MMSE abnormal or functionality impaired

SUGGESTED WORKUP

May start Acetylcholinesterase Inhibitor prior to visit if dementia diagnosis is clear

If considering Dementia trial- avoid changing/adjusting meds

LABS:
CT or MRI recommended
TSH, B12, RPR, Lyme, Testosterone

LOW RISK

SUGGESTED ROUTINE CARE

SYMPTOMS AND LABS

Mild to moderate dementia in elderly patient without atypical features

Symptoms resolving

Critically/terminally ill

Normal exam “worried patient/family”

Good Geri/Geripsych f/u

EXAM:
MOCA 30/30, MMSE 30/30

SUGGESTED MANAGEMENT

Assess for mimickers

Depression/anxiety
OSA
ADD
Meds effect

LABS:
obvious metabolic/toxic/medication source

CLINICAL PEARLS

- Dementia should be managed by PCP
- If prominent features are neuropsychiatric (hallucinations/ paranoid delusions/severe depression/anxiety) consider geriatric psychiatry
- If prominent comorbidities (cardiac/pulmonary/oncological/ metabolic/complicated social issues) consider geriatrics
- Every patient/family with dementia should optimally have a social worker/case manager involved- access association resources

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DIZZINESS/VERTIGO REFERRAL GUIDELINE

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HIGH RISK

SUGGESTED EMERGENT CONSULTATION

SYMPTOMS AND LABS

Acute spontaneous, non-positional vertigo with inability to walk and brainstem deficits (e.g. dysphagia, dysarthria, diplopia, unilateral incoordination, unilateral weakness or numbness), mechanism or symptoms to suggest vertebral dissection (e.g. neck/eye pain; rapid, repeated or prolonged hyperextension of neck)

EXAM:
Non-fatigable nystagmus, ataxia, CN palsies

SUGGESTED PREVISIT WORKUP

Urgent ED evaluation for possible cerebellar or brainstem stroke

MODERATE RISK

SUGGESTED CONSULTATION OR CO-MANAGEMENT

SYMPTOMS AND LABS

Dizziness with headache/migraine

EXAM:
Generally normal exam

SUGGESTED WORKUP

Non-urgent neurology consultation

LOW RISK

SUGGESTED ROUTINE CARE

SYMPTOMS AND LABS

Pre-syncope without peripheral neuropathy; benign positional vertigo, medication side effects, hyperventilation syndrome, Meniere's disease, acoustic neuroma (hearing loss, tinnitus)

EXAM:
Orthostasis, fatigable and provoked nystagmus (if BPPV)

SUGGESTED MANAGEMENT

If pre-syncope, consider cardiology evaluation and discontinue any causative medications.

If suspect BPPV or Meniere's, consider ENT evaluation.

If chronic dizziness not responsive to therapies, consider neuro-otology referral to Mass Eye and Ear

If acoustic neuroma, MRI w/ and w/o gad and neurosurgery consultation

CLINICAL PEARLS

- Etiology of dizziness in population based studies include: 40% peripheral vestibulopathy, 25% other (e.g. syncope, disequilibrium, medication side effects, TBI, hypoglycemia, vision/hearing/sensory loss), 15% psychiatric and 10% central brainstem/vestibular lesion, 10% undetermined
- If suspect benign paroxysmal positional vertigo (BPPV) due to provoked, brief vertigo and nystagmus, consider ENT evaluation and vestibular therapy.

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Reviewed by Megan Selvitelli, MD

V2.0 11/20

HEADACHES REFERRAL GUIDELINE

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HIGH RISK

SUGGESTED EMERGENT CONSULTATION

SYMPTOMS AND LABS

Papilledema with negative imaging or low concern for mass lesion.

Severe temporal headache in elderly patient

Severe headache associated with neurologic deficits (CN palsies, weakness, numbness, neck pain)

EXAM:
Papilledema. Temporal artery tenderness, CN palsies, weakness, numbness, nuchal rigidity

LABS:
High WBC/inflammatory parameters

SUGGESTED PREVISIT WORKUP

Most truly urgent headache patients need ED evaluation: Severe/ paroxysmal onset; fever/meningismus; altered level of consciousness; focal neurologic deficits.

Always feel free to call Neurology office emergency physician to help with triage.

MODERATE RISK

SUGGESTED CONSULTATION OR CO-MANAGEMENT

SYMPTOMS AND LABS

Patient with signs and symptoms of headaches that are not clear migraine or tension headache OR there has been a suboptimal response to initial therapies OR potential treatment with Botox for intractable migraines (greater than 14 migraines/month + greater than 2 failed preventative medicine trials)

EXAM:
Non-focal neurologic exam, no papilledema or meningismus

SUGGESTED WORKUP

Referral to neurology. Due to high volume from providers throughout all of Maine as well as southern New Hampshire, wait may be up to several months.

If patient has been seen by other neurologist(s) without benefit, consider referral to tertiary headache clinic. (e.g. Darmouth Hitchcock Medical Center, Brigham and Women's Hospital)

LOW RISK

SUGGESTED ROUTINE CARE

SYMPTOMS AND LABS

Patient with clear signs and symptoms of episodic migraine or tension headache and displays expected response to NSAIDs, triptans or other pain relievers do not require consult.

Clearly migrainous visual aura with or without headache usually does not require consultation.

EXAM:
Normal neurologic exam with or without pericranial muscular tenderness

LABS:
Many imaging findings are incidental. A telephone call to review findings may save an unnecessary consultation and patient anxiety.

SUGGESTED MANAGEMENT

Trials of standard preventive pharmacologic agents by primary care provider(see below).

Consider alternative physical and/ or psychologic techniques, lifestyle modification, and counseling.

Assess for analgesic overuse/rebound.

Consider and treat any secondary causes of headache including sinus disease, TMJ syndrome, sleep disorders, mood and anxiety disorders.

CLINICAL PEARLS

- Numerous preventative therapies are available for both migraine and tension type headaches and include:
- Herbal supplements: Riboflavin 200mg twice daily, Magnesium 200mg twice daily, Co-enzyme Q10 100mg twice daily
- Anticonvulsants: Topiramate 100mg nightly or 50mg twice daily, Valproic acid 250-500mg twice daily, Gabapentin 300mg three time daily, Zonisamide 100-200mg nightly
- Antihypertensives: Propranolol LA 60-120mg daily, Verapamil, ACE inhibitors
- Antidepressants: Amitriptyline/Nortriptyline 10mg-100mg nighlty, Duloxetine 30-60mg daily
- Preventative agents may take up to one month to note a 50% reduction in frequency and severity of headaches. If initial agent is ineffective after two months of therapy at goal dose, then transition to alternative agent.
- Alternative therapies may include PT, massage therapy, stress reduction techniques, acupuncture

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MULTIPLE SCLEROSIS REFERRAL GUIDELINE

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HIGH RISK

SUGGESTED EMERGENT CONSULTATION

SYMPTOMS AND LABS

Hemiparesis/plegia, paraparesis/plegia, hemisensory paresthesia/numbness, diplopia with ataxia, vertigo and/or unilateral or bilateral visual loss

EXAM:
Examples: hemiparesis/plegia, paraparesis/plegia, hemisensory deficits, optic neuritis dx by ophthalmologist, hyperreflexia, spasticity

SUGGESTED PREVISIT WORKUP

Send to ER or call REMIS if:

Disabling and/or acute onset of one or more of above symptoms unable to bve managed or evaluated as outpatient (paraplegia, hemiplegia, dysphagia, severe visual loss, severe ataxia) OR alternative diagnosis considered (CVA)

Request urgent neurology consultation for:

New, persistent, subacute symptoms suspected to be due to MS

MODERATE RISK

SUGGESTED CONSULTATION OR CO-MANAGEMENT

SYMPTOMS AND LABS

History of focal CNS symptoms: (paresthesias, numbness, weakness, ataxia, diplopia, history of optic neuritis) which lasted for days or weeks but resolved or improved

History of recurrent episodes of one or more of above symptoms in the past with recent reoccurrence

Progressive LE weakness, numbness, ataxia with onset of symptoms in late 40s or 50s

Existing MS diagnosis:
- need for transfer of care
- second opinion on management
- 2nd opinion for suspected MS dx

EXAM:
unilateral upper/lower OR bilateral lower limb motor or sensory deficits, ataxia, hyperreflexia

MRI:
suggestive or diagnostic of MS

SUGGESTED WORKUP

Request more urgent MS evaluation (less than 4 weeks) for recent new symptoms improved or resolved if patient w/o current neurologist OR patient is transferring care from out of state and needs medication management (ex. infusions)

LABS to r/o mimickers:
CBC, CMP, TSH, B12, ANA, RF, SSA/B, ACE, Lyme, RPR

Routine scheduling for transfer of care/ second opinion

LOW RISK

SUGGESTED ROUTINE CARE

SYMPTOMS AND LABS

Less than 48 hours symptom duration, non-localizing symptoms, alternative diagnosis considered that would require more acute evaluation (stroke, cord compression, malignancy)

Patients seeking more than a 3rd opinion after negative neurological work ups

EXAM:
Normal or alternate diagnosis more likely

MRI:
Brain and cervical spine negative

SUGGESTED MANAGEMENT

Consider general neurology referral if still concerned about a neurological etiology

CLINICAL PEARLS

- Common Neurologic Symptoms of Multiple Sclerosis:
- Optic Neuritis (decreased acuity and color saturation, scotoma, pain w/eye movements)
- Partial Transverse Myelitis (weak legs, numbness, neurogenic bladder, Lhermitte's phenomenon)
- Cerebellar/Brainstem (imbalance, dysarthria, diplopia, dysphagia, tremor, vertigo)

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NEUROMUSCULAR COMPLAINT: PERIPHERAL NEUROPHATHY, NUMBNESS, WEAKNESS - REFERRAL GUIDELINE

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HIGH RISK

SUGGESTED EMERGENT CONSULTATION

SYMPTOMS AND LABS

Known myasthenia gravis with worsening swallowing, speech, or vision problems (If respiratory sx- send to ER)

Progressive motor and/or sensory deficits resulting in impaired function present for ‹ 1 month

Progressive limb weakness over weeks to months with atrophy and muscle twitching

Progressive proximal weakness dysphagia, dysarthia, or dyspnea present ‹ 3 mos.

EXAM:
Muscle atrophy with fasciculations, Ptosis, Weakness ‹ 3/5

LABS:
Positive myasthenia antibodies
CK › 2 x normal with weakness

SUGGESTED PREVISIT WORKUP

For neuropathy and myopathy evaluations, patients will be scheduled for EMG testing. We do not diagnose and treat based on outside studies and typically will need to repeat these

MODERATE RISK

SUGGESTED CONSULTATION OR CO-MANAGEMENT

SYMPTOMS AND LABS

Chronic progressive limb weakness and/or sensory deficits in a stocking - glove pattern w/out a diagnosis or with a diagnosis requiring treatment

Chronic progressive muscle weakness, cramping, or elevated CK of unknown cause

Known diagnoses of neuromuscular disease with stable symptoms transferring care or requesting 2nd opinion

Diffuse fasciculations without weakness or muscle atrophy

Cervical/lumbar radiculopathies with acute neurologic deficits and focal neuropathies will be seen semi-urgently

SUGGESTED WORKUP

Radiculopathies with acute neurologic deficits will be seen semi-urgently- please specify symptoms.

Diagnosed muscular dystrophies and hereditary neuropathies should be referred to the Muscular Dystrophy Clinic

Unilateral numbness and/or weakness involving face, arm, and leg is unlikely to be due to a neuromuscular cause: EMG is not indicated.

LABS:
Neuropathy: B12, RPR, TSH, HbA1c, ESR, ANA
Myopathy: CK, ESR, CRP, TSH, ANA

LOW RISK

SUGGESTED ROUTINE CARE

SYMPTOMS AND LABS

General fatigue without muscle weakness

Patient has known peripheral neuropathy without significant change in symptoms

New onset small fiber sensory loss in patient with known diabetes- Check reversible neuropathy labs: TSH, B12, Folate, RPR to assess for other causes.

Consider neuropathic pain treatment with topical capsaicin/Lidoderm patches, gabapentin/lyrica, nortriptyline/amitriptyline

Clinical symptoms of diffuse numbness/paresthesia with normal sensory exam is unlikely to be due to neurologic disease- assess for toxic-metabolic cause

SUGGESTED MANAGEMENT

We do not see patients for pain management and do not treat Complex Regional Pain Syndrome or Fibromyalgia

We do not see neck/back pain in the absence of associated neurologic symptoms in arm/leg- These patients should be referred to the Spine Center.

CLINICAL PEARLS

- Known Myasthenia with increasing breathing problems or new onset (‹ 1 week) of breathing and swallowing problems without known diagnosis
- Acute onset (‹ 7days) of rapidly progressive numbness/ weakness in both legs with or without urinary or respiratory symptoms

Neuropathic pain treatment:

- 1) Anticonvulsant medications such as Gabapentin and Lyrica
- 2) Antidepressants such as nortriptyline/amitriptyline or duloxetine
- 3) Topical medications such as topical lidocaine preparations or capsaicin cream.

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SEIZURE REFERRAL GUIDELINE

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HIGH RISK

SUGGESTED EMERGENT CONSULTATION

SYMPTOMS AND LABS

First Seizure

EXAM:
Should be normal or unchanged from baseline

SUGGESTED PREVISIT WORKUP

Please rule out syncopal convulsion and check orthostatics if indicated

Please obtain prior ER reports and acute imaging, and any EEG data performed outside of MMC/MMP including EEG traciings, if able

Initial ER visit indicated most of the time for assessment of new onset seizure and then urgent outpatient neurology consult if patient back to baseline

LABS:
EKG, CBC, electrolytes, tox screen and blood EtOH (if warranted)

MODERATE RISK

SUGGESTED CONSULTATION OR CO-MANAGEMENT

SYMPTOMS AND LABS

Active alcoholics with withdrawal seizures

Seizures with known cause and patient on appropriate medications are less urgent

Second opinion epilepsy referrals are NOT urgent.

Chronic epilepsy

EXAM:
Should be normal or unchanged from baseline

SUGGESTED WORKUP

Make sure we have all prior neurology records and test results including EEG, MRI, PET scans, Neuropsych tests

If chronic patients are controlled, indicate reason for referral to help us prioritize

If patient has a neurologist, indicate if this is transfer of care or testing only. Indicate seizure frequency

LABS:
Any recent blood AED levels.

LOW RISK

SUGGESTED ROUTINE CARE

SYMPTOMS AND LABS

Suspected syncope (we can do EEG test only)

Patients with active polysubstance abuse with symptomatic seizures

Seizures triggered by hypoglycemia or known metabolic derangement

Chronic stable epilepsy. Patient requesting 3rd/4th opinions

SUGGESTED MANAGEMENT

Complete abstinence from drugs or EtOH, correct metabolic derangements

If patient has chronic epilepsy, is seizure free on stable medications and has no reason to consider changing medications, they can be managed by PCP. We can provide phone support if questions arise such as screening for chronic toxicity

Test only EEG, ambulatory EEG and inpatient monitoring is available for patients with competent neurologists

LABS:
Tox screen positive

CLINICAL PEARLS

- Syncopal convulsion is the most common diagnosis mistaken for seizures and requires careful history. Cardiology referral often indicated.
- Please ensure all prior neurologic records and testing is available before the consult.

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Reviewed by Megan Selvitelli, MD

V2.0 11/20

SLEEP DISORDER REFERRAL GUIDELINE

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HIGH RISK

SUGGESTED EMERGENT CONSULTATION

SYMPTOMS AND LABS

Most sleep disorders are non-urgent. If referring physician deems consult is urgent please contact Dr. Kaminow

SUGGESTED PREVISIT WORKUP

LABS:
sleep studies if applicable, labs to include CBC, CMP, TSH, ferritin

MODERATE RISK

SUGGESTED CONSULTATION OR CO-MANAGEMENT

SYMPTOMS AND LABS

Parasomnia (sleep walking etc.), restless legs syndrome, daytime sleepiness, sleep paralysis, cataplexy (loss of body tone with retained wakefulness), sleep breathing disorder, sleep wake cycle disorders.

SUGGESTED WORKUP

Send referral information

LABS:
sleep studies if applicable, labs to include CBC, CMP, TSH, ferritin

LOW RISK

SUGGESTED ROUTINE CARE

SYMPTOMS AND LABS

Primary complaint of insomnia- typically will not be scheduled

If primarily sleep related breathing disorder will need to be triaged to see if pulmonary referral is more appropriate.

SUGGESTED MANAGEMENT

Send referral information

CLINICAL PEARLS

- Many patients with underlying medical illnesses report insomnia and this can be a common medication side effect as can daytime sleepiness. This should be evaluated prior to sending for neurologic consultation.
- Counseling on sleep hygiene measures is recommended

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STROKE REFERRAL GUIDELINE

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HIGH RISK

SUGGESTED EMERGENT CONSULTATION

SYMPTOMS AND EXAM

Sudden onset of neurological dysfunction with persistent weakness or numbness on half of the face/body, difficulty speaking or understanding speech, partial loss of vision or double vision, dizziness, imbalance, difficulty walking.

The patient is likely to have abnormal neurological exam findings; signs and symptoms that improved › 24 hours from onset are more likely to be associated with stroke on imaging

SUGGESTED PREVISIT WORKUP

PATIENTS WITH ACUTE ONSET OF STROKE SYMPTOMS SHOULD BE DIRECTED TO CALL 911 AND SHOULD BE EVALUATED IN THE ED.

Imaging: MRI brain, CT head if unable to do MRI; CTA or MRA head and neck preferred, carotid ultrasound only if unable to do either CTA/MRA

Cardiac Evaluation as indicated: TTE with bubble study and EKG; Troponin and Telemetry while hospitalized

Labs: Fasting lipid panel, fasting blood glucose or HbA1c, CBC, CMP, and consider PT/INR, aPTT, and urinalysis in appropriate cases

MODERATE RISK

SUGGESTED CONSULTATION OR CO-MANAGEMENT

SYMPTOMS AND EXAM

Symptoms as outlined in the “high risk” column; the patient has already had a complete stroke work up and appropriate secondary stroke prevention measures are in place. Include a clinical exam noting any significant or new neurologic deficits.

Referral indication may include the need for an opinion regarding stroke etiology, or for recurrent strokes.

SUGGESTED PREVISIT WORKUP

Results for Imaging, Cardiac Evaluation, and Labs from the “high risk” column should be provided, or promptly ordered if necessary, by the referring provider

Continue secondary stroke prevention measures.

Neurologist can help determine if there is a need for more specialized testing, such as TEE, prolonged cardiac monitoring, or evaluation for blood coagulation disorders.

LOW RISK

SUGGESTED ROUTINE CARE

SYMPTOMS AND EXAM

Remote history of stroke without new neurologic symptoms or exam findings; question of stroke etiology or long term management.

If symptoms are related to ongoing neurologic deficit, spasticity, or pain then a Physiatry / Physical Medicine & Rehabilitation consult should be considered.

SUGGESTED MANAGEMENT

Ensure appropriate secondary stroke prevention measures are in place.

If questioning need for neurologic evaluation, please call to speak with one of our neurologists.

CLINICAL PEARLS

- Actual reports of diagnostic testing (imaging, cardiac evaluation, labs) are strongly preferred over second hand reports of results.
- Please make sure actual images are available for review on IMPAX or disc prior to the patient’s appointment. If needed, get guidance from where the images were done.
- If images cannot be sent to MaineHealth IMPAX Server, then consider sending CD’s of all neuroimaging, including MRI, MRA, CT, CTA, and carotid ultrasounds, before the appointment so we can have imaging transferred to the server. CD’s brought to the office sometimes cannot be opened on the doctors’ desktop computers.

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Reviewed by Christopher Cummings, MD

V2.0 11/20

TIA
REFERRAL GUIDELINE

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HIGH RISK

SUGGESTED EMERGENT CONSULTATION

SYMPTOMS AND EXAM

Sudden onset of *transient* neurological dysfunction, usually lasting several minutes to a few hours, including weakness or numbness on half of the face/body, difficulty speaking or understanding speech, partial loss of vision or double vision, dizziness, imbalance, difficulty walking.

The neurological exam should be normal or have no new findings following the episode. Signs and symptoms that improved › 24 hours from onset are more likely to be associated with stroke on imaging.

SUGGESTED PREVISIT WORKUP

Patients should be referred to the ED if symptoms occurred within the last 72 hours, or have not completely resolved.

Imaging: MRI brain, CT head if unable to do MRI; CTA or MRA head and neck preferred, carotid ultrasound only if unable to do either CTA/MRA

Cardiac Evaluation as indicated: TTE with bubble study and EKG; Troponin and Telemetry while hospitalized

LABS:
Fasting lipid panel, fasting blood glucose or HbA1c, CBC, CMP, and consider PT/INR, aPTT, and urinalysis in appropriate cases

MODERATE RISK

SUGGESTED CONSULTATION OR CO-MANAGEMENT

SYMPTOMS AND EXAM

Symptoms and exam as outlined in the “high risk” column; however, symptoms occurred › 72 hours ago, the patient has already completed a work up for TIA, and appropriate secondary stroke prevention measures are in place.

SUGGESTED WORKUP

Results for Imaging, Cardiac Evaluation, and Labs from the “high risk” column should be provided, or promptly ordered if necessary, by the referring provider

Continue secondary stroke prevention measures. Neurologist can help determine if there is a need for more specialized testing, such as TEE, prolonged cardiac monitoring, or evaluation for blood coagulation disorders.

LOW RISK

SUGGESTED ROUTINE CARE

SYMPTOMS AND EXAM

Symptoms inconsistent with those in the “high risk” column, including isolated sensory complaints without objective findings on exam or prior diagnostic testing, are likely to be caused by another process, such as migraine aura, benign paroxysmal -positional vertigo, orthostasis, adverse effects of medication, delirium, etc., especially in the setting of a negative stroke work-up in the past.

SUGGESTED MANAGEMENT

Ensure appropriate primary stroke and cardiovascular prevention measures are in place.

Consider potential causes of the symptoms, and pursue further evaluation as indicated.

CLINICAL PEARLS

- Transient neurological symptoms that last only seconds are unlikely to be TIA.
- Paresthesia isolated to the face or part of a limb , slurred speech without facial droop or other deficits and vertigo without any other deficits, are unlikely to be TIA and alterative explanations should be considered.
- Actual reports of diagnostic testing (imaging, cardiac evaluation, labs) are strongly preferred over second hand reports of results.
- Please make sure actual images are available for review on IMPAX or disc prior to the patient’s appointment.

Maine Medical PARTNERS

Reviewed by Christopher Cummings, MD

V2.0 11/20

TREMOR/PARKINSON'S REFERRAL GUIDELINE

MAINE MEDICAL PARTNERS - NEUROLOGY • 49 SPRING STREET, SCARBOROUGH, ME • (207) 883-1414

HIGH RISK

SUGGESTED EMERGENT CONSULTATION

SYMPTOMS AND LABS

Sudden worsening of tremor or Parkinson's symptoms in a patient with a deep brain stimulator (DBS).

Acute onset tremor/movement disorder which is severe and disabling.

EXAM:
High amplitude resting and/or action tremor. Severe rigidity, bradykinesia

SUGGESTED PREVISIT WORKUP

Rule out medication induced tremor in the case of new onset tremor.

Consider the possibility of anxiety contributing to tremor in a patient with a previously mild tremor.
DBS patients should call the office of the doctor who manages their DBS.

LABS:
Urinalysis should be checked with any acute decline in Parkinson's symptoms.

MODERATE RISK

SUGGESTED CONSULTATION OR CO-MANAGEMENT

SYMPTOMS AND LABS

Suspected Parkinson's disease (PD): Tremor, slowed walking, loss of dexterity, poor balance.

Suspected Essential tremor: Bilateral action tremor.

EXAM:
PD- Unilateral resting tremor, cogwheel rigidity, decreased arm swing, micrographia, shuffling gait.
ET-high frequency action tremor

SUGGESTED WORKUP

Neuroimaging does not need to be performed prior to being evaluated by neurology in the case of suspected Parkinson's disease or essential tremor.

LABS:
Lab work is not necessary prior to being seen by neurology.

LOW RISK

SUGGESTED ROUTINE CARE

SYMPTOMS AND LABS

Long standing bilateral tremor of the hands which is non-bothersome and not interfering with daily activities

EXAM:
Low amplitude action tremor of the hands and/or head

SUGGESTED MANAGEMENT

Reassurance that essential tremor is a slowly progressive condition.

If the patient is already taking a beta blocker switching to propranolol can be attempted.

Examine the medication list for possible medication induced tremor.

LABS:
Thyroid function should be checked.

CLINICAL PEARLS

- Patients treated with DBS should have home programmers which would allow them to make sure that the unit is still on.
- Tremor of PD most often starts unilaterally in the hands but a unilateral resting leg/foot tremor can also be the presenting symptom.
- Reconsider the diagnosis of essential tremor in anyone with a new onset tremor that progresses significantly over the course of months to a few years.
- The most common cause for an acute worsening in Parkinson's symptoms is infection, usually UTI.
- Never suddenly withdraw levodopa or a dopamine agonist because of the risk for a withdrawal syndrome
- A family history of tremor and/or alcohol responsive tremor is strongly suggestive of the diagnosis of essential tremor.

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