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SANTA CLARA VALLEY MEDICAL CENTER
Hospital & Clinics

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Neurosurgery Referral Guidelines

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This information is designed to aid practitioners in making decisions about appropriate medical care. These guidelines should not be construed as dictating an exclusive course of treatment. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institutional type of practice.

E-CONSULT DISCLAIMER:

E-consults are based on the clinical data available to the reviewing provider, and are furnished without benefit of a comprehensive evaluation or physical examination. All advice and recommendations must be interpreted in light of any clinical issues, or changes in patient status, not available to the reviewing provider. The ongoing management of clinical problems addressed by the e-consult is the responsibility of the referring provider. If you have further questions or would like clarifications regarding e-consult advice, please contact the reviewing provider. If needed, the patient will be scheduled for an in-office consultation.

All URGENT consultations require provider-to-provider communication. If your patient has a medical emergency, please direct them to the closest emergency room for expedited care.

Please note these guidelines important for ALL SPINE referrals:

- **Spine referrals WILL NOT BE accepted without a recent (<1 year) MRI** scan of the relevant spine (unless contra-indicated, in which case CT scan is a minimum).
- Patients with **axial neck or back pain, with or without radicular symptoms but neurologically intact** should undergo a **period of conservative treatment** first, such as Physical Therapy. They should only be **referred to neurosurgery if conservative treatments have failed**. However, note that pure axial neck/back pain without surgical MRI findings are usually not treated surgically and may be managed by pain specialists.
- If referring a patient for consideration for surgical treatment of degenerative spine problems, **please ensure the patient is at least willing to accept surgery as a possible option**.

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APPROPRIATE NEUROSURGERY REFERRALS

CRANIAL PROBLEMS

1. **Background**
2. **Pre-referral evaluation and treatment**
    a. Testing
        i. MRI imaging, if indicated

3. **Indications for referral**
    a. EMERGENCY referral
        i. Patients with **cranial tumors (neoplasia) and acute deterioration** should go to the ER.
        ii. Patient with **shunt malfunction** should go to the ER.
        iii. Patients with **cerebrovascular problems and acute deterioration** should go to the ER.
    b. URGENT referral
        i. **Cranial tumors (Neoplasia)**
            1. The urgency will depend on the history, physical examination and MRI findings. All referrals are triaged and seen in a timely fashion.
        ii. **Cerebrovascular problems which are surgical**
            1. This includes **extracranial carotid stenosis, cerebral aneurysms and vascular malformations (AVMs, Cavernous malformations, Dural fistula)**.
                a. For extracranial carotid stenosis:
                    i. Refer symptomatic or asymptomatic carotid stenosis in the neck that is 50% or more stenotic
    c. ROUTINE referral
        i. **Facial pain (Trigeminal Neuralgia)**
            1. This is an under-referred problem.
            2. Refer for consideration of conservative or surgical treatment options.
        ii. Patients with **CSF shunt questions or suspicion of problem**
    d. Do not refer
        i. Patient with **CSF shunts without specific problems**.
            1. Patients with CSF shunts do NOT need to be seen routinely in the neurosurgery service when there are no specific problems. The patient need only be referred to neurosurgery IF there is a suspicion of a problem or if the patient would like to ask questions about their shunt.

ii. **Trauma referrals** are usually from trauma, ER or PM&R services.
    1. We do not routinely follow up on adult mild head injuries (GCS 13-15 throughout admission and GCS 15 on discharge) with or without CT findings. There are some rare exceptions based on clinical course and CT findings.
    2. The majority of mild head injured adult patients are asked to follow up with their primary care doctor IF there are ongoing problems. Head injury advice is of course given to them and their families on discharge.

4. **Please include the following with your referral**
    a. Results of pre-referral MRI, if indicated

PERIPHERAL NERVE PROBLEMS

1. **Background**
2. **Pre-referral evaluation and treatment**
    a. Testing
        i. Nerve conduction studies

3. **Indications for referral**
    a. Routine referral
        i. Carpal Tunnel Syndrome with or without confirmation by nerve conduction studies should be referred to the neurosurgery clinic.
            1. This is an under-referred problem.
            2. Conservative treatments are offered if appropriate.
            3. Neurosurgery provides a fast track service for this group of patients as soon as the nerve conduction studies confirm the clinical diagnosis.
            4. The vast majority of surgical cases are day cases and there is minimal waiting time between scheduling patient for surgery and their actual operation.
        ii. Ulnar neuropathy with or without confirmation by nerve conduction studies.
        iii. Sural nerve or muscle biopsy service is offered by neurosurgery to help with diagnosis of neuromuscular problems.
            1. Referring doctor should also complete a pathology request form specifying the clinical history and questions you want the pathologist to help answer.

4. **Please include the following with your referral**
    a. Results of nerve conduction studies

SPINAL PROBLEMS

1. **Background**
2. **Pre-referral evaluation and treatment**
    a. Testing
        i. MRI of the relevant part of the spine BEFORE referral
            1. MRI should be less than 1 year old
            2. If the patient cannot have a MRI because of contraindications, then the patient should at least have a CT scan of the relevant part of the spine.
                a. Claustrophobia is NOT a sufficient reason not to get a MRI scan. Patients should be scheduled to get the MRI done under sedation or referred to an open MRI scanner facility.
        ii. Please note – **referrals will not be accepted without a recent (<1year) MRI scan of relevant spine** (unless contraindicated, in which case CT scan is a minimum).
    b. Management
        i. Patients with pure axial neck or back pain with MRI evidence of only degenerative spine disease WITHOUT large disc prolapses (i.e, no acute fractures, deformities, tumors, spinal vascular problems and infections):
            1. Patients are usually NOT treated surgically and if need be, should be referred to pain specialists.
        ii. Patients with axial neck or back pain WITH/WITHOUT radicular symptoms, WITHOUT MRI/MRI report evidence of fracture, neoplasia or infection AND neurological function intact and stable (i.e no progressive weakness or numbness or bladder/bowel dysfunction that is NOT pain related).
            1. Refer for Physical Therapy and re-assess after this or other forms of conservative treatment.
            2. They should only be referred to neurosurgery if conservative treatments have failed.
            3. Consider referral to pain specialists.
        iii. Arm pain (brachalgia) or Leg pain (sciatica):
            1. Severe pain requires good analgesic control and NOT urgent referral to clinic.
            2. If the pain remains severe despite maximal conservative treatment, please contact on call neurosurgery team via HealthLink to discuss the case and possibility of urgent referral.

3. **Indications for referral**
    a. EMERGENCY referral
        i. **Cauda Equina Syndrome** is an emergency. The patient should be sent to the ER for assessment. Do NOT make a clinic referral even as an urgent referral.
    b. URGENT referral
        i. **New onset Upper Motor Neuron symptoms or signs** (e.g Cervical or thoracic Myelopathy) **WITH MRI evidence of pathology** (e.g Degenerative spinal canal stenosis, neoplasia)
    c. ROUTINE referral unless progressive neurological deterioration
        i. If referring a patient for consideration for surgical treatment of degenerative spine problems, **please ensure the patient is at least willing to accept surgery as a possible option.**
        ii. **Spine referrals WITHOUT MRI/MRI report evidence of fracture, neoplasia or infection AND stable neurological function** (i.e no progressive weakness or numbness or bladder/bowel dysfunction that is NOT pain related), **which have failed conservative treatment** with physical therapy or other measures.
        iii. **Arm pain (brachalgia) or Leg pain (sciatica) which is of a radicular nature**, including neurogenic claudication **IF the MRI/MRI report shows evidence of disc prolapse, spinal canal stenosis, foraminal stenosis or other significant finding** reported by the radiologist **AND the patient has failed conservative treatment.**
        iv. Neck or Back pain referrals with no significant arm or leg symptoms who meet do not refer exception criteria.
    d. Do not refer
        i. Patients with complaints of **Neck or Back pain with no significant arm or leg symptoms** (ie Arm/leg/bladder/bowel symptoms - numbness, weakness or pain are non-existent or minimal)
            1. **EXCEPTIONS**: If the MRI/MRI report shows evidence of:
                a. Fracture
                b. Neoplasia
                c. Infection
                d. Previous spine hardware
                e. Significant spine deformity (kyphosis, scoliosis)
        ii. Patients for non-surgical pain services, ie epidural injections
            1. Refer to pain specialist

4. **Please include the following with your referral**
    a. Results of pre-referral imaging tests

REFERRALS TO BE DIRECTED TO CLINICS OTHER THAN NEUROSURGERY

NON-SURGICAL MANAGEMENT OF SPINE PROBLEMS, ie epidural injections – Refer to pain specialist

1. For non-surgical management of spine problems, such as epidural injections, please refer to pain specialist and NOT neurosurgery. Neurosurgery only offers surgical treatments. We have no injection services.

PURE AXIAL NECK/BACK PAIN WITH MRI FINDINGS OF DEGENERATIVE SPINE DISEASE ONLY – Refer to pain specialist

1. Patients with pure axial neck or back pain with MRI evidence of only degenerative spine disease WITHOUT large disc prolapses (i.e, no acute fractures, deformities, tumors, spinal vascular problems and infections) are usually NOT treated surgically and if need be, should be referred to pain specialists.

Revisions:

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