

Role of the Physical Therapist in Treatment of Patients with Migraine Headaches in the Acute Inpatient Setting

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Outline

- Physical Therapy Process/Evaluation
- Physical Therapy Component of Dry Needling Practice
- Muscles Targeted for Treatment of Migraine Headaches



Physical Therapy Process Roadmap

- Physical therapist (PT) receives orders from physician to see patient admitted with a migraine headache.
- PT reviews case history from patient chart.
- PT completes patient evaluation.
- PT educates patient on treatment plan, including therapeutic exercise, postural education, cervical traction and integrative dry needling (IDN).



Sample Patient Case History

- Summary
 - A 22 year old female patient admitted to the hospital with a history of chronic migraine headaches since age 12. Patient now complains that her headaches are getting worse, and have increased in frequency to greater than 15 days a month. Patient also complains of pain over her forehead and above her ears, deep pain over her eyebrows, and the back of her head. Patient works part-time as a cashier at a grocery store, and is a full-time student at a local college. Patient reports that she has had to miss classes several times a month due to her headaches.



PT Evaluation: Examination

- Examination
 - Review patient case history with the patient
 - Systematic gathering of data from the past and the present related to current medical diagnosis
 - Description of current condition
 - Personal and environmental factors including social history, employment, and work (job/school)
 - General health status
 - Social and health habits
 - Family history
 - Current and previous functional status, including activity and participation
 - Co-existing conditions that might have implications for management
 - Screening/initial testing of the status of musculoskeletal, neuromuscular and cardiovascular/pulmonary and integumentary systems



PT Evaluation: Objective

- Tests and Measures:
 - Range of motion (ROM) of the cervical spine, shoulders, postural assessment
 - Strength assessment
 - Functional mobility and gait
- Assessment
 - Based on the information gathered from the history, examination, tests, and measures, the physical therapist determines which intervention is appropriate for this patient/client.
- Goals
 - The prognosis is the likelihood of achieving a particular outcome including a prediction of levels of improvement that should be reached at specific intervals during the course of therapy. Prognosis may be reflected in the goals established by the physical therapist and patient/client.



The Practice of Dry Needling

- Integrative Dry Needling (IDN)
 - IDN is a therapeutic modality for soft tissue dysfunction that involves soft tissue injuries including tissue inflammation, sensitized nerve tissue, scar tissue formation, tissue adhesion, deficiency of blood and lymphatic circulation.
 - Requirements to Practice:
 - Clinical practice of IDN is standardized, quantified, reproducible, and prognosis is reliably predictable.
 - Requires 25-50 hours of face-to-face supervised practice including special training in safety issues.
 - To be IDN certified, one must have 4-5 years of education in physical therapy or medical school.



The Objective of Dry Needling

- Physiological Target of Integrative Dry Needling (IDN)
 - IDN process is invasive and works to restore both local tissue homeostasis and systemic homeostasis (reducing both physical and physiological stress).
 - Physical stress means muscular which creates biomechanical imbalance such as joint and posture imbalance.
 - Physiological stress includes physiological dysfunction such as inflammation, tissue ischemia.



How Dry Needling Works

- Physiological Mechanism of Integrative Dry Needling (IDN)
 - IDN creates both local and systemic therapeutic effects.
 - Electrical percutaneous stimulation further increases the efficacy of manual needling by rhythmic vibration of the tissues.
 - IDN itself does not treat diseases but restores tissue homeostasis by activating the process of biological self-healing and self-repair physiology.
 - IDN anti-inflammatory process involves balancing the sympathetic nervous system by creating a balance between the vasodilators (adenosine and nitric oxide) and vasoconstrictors (superoxide and many others).



Limitations of Dry Needling

- Clinical Limitations of Integrative Dry Needling (IDN)
 - IDN Therapy is a process of physiological adjustment to normalize homeostasis in order to promote self healing. However, as the severity of pathological condition increases, the self-healing potential of the patient decreases.
 - If the patient's self-healing potential is severely hindered, the response to IDN may be limited.



Possible Risks of Dry Needling

- Risks and Cautions of Dry Needling
 - Any allergic reaction to the needle
 - Syncope caused by emotional stress and fear of pain
 - Hematoma – muscle bruising
 - When infection is present, dry needling is to be avoided.
 - Increased muscle spasms, increased pain and muscular edema can occur.
 - Nerve injury, injury to vein or artery insult to spinal cord are all rare but may occur.



Contraindications of Dry Needling

- Contraindications of Dry Needling
 - Open wounds or broken skin should be avoided.
 - Malignancies
 - Aneurysm
 - Hematomas
 - Arteriosclerosis
 - Osteoporosis
 - Prosthetic implants and implant devices – increased risk of infection



IDN for Migraine Headaches

- Muscles to be treated with IDN for migraine headaches
 - Occipitofrontalis
 - Strong fascial connection between occipitalis and frontalis (galea aponeurotica)
 - Occipitalis (back of the head)
 - Tension headaches can be caused by spasms in muscles at the back of the head, neck and shoulders. Tightness in the hamstrings, plantar fascia of the lower extremities can also cause increasing tension in the back of the head with resulting tension headaches.
 - Frontalis (front of the head)
 - Tension anywhere in posterior back down the kinetic chain can lead to shortening of the galea aponeurotica resulting in tension headaches
 - Upper Trapezius
 - Myofascial trigger points here lead to tension headaches, with sharp pain felt in the temporal bone and into the masseter, behind the eye and ear (on the same side), and along the side of the neck.



IDN for Migraine Headaches

- Muscles to be treated with IDN for migraine headaches
 - Temporalis (side of the head – front and behind the ears)
 - Pain is felt above the ear and over the forehead on the side of tight muscle
 - Forward head posture also increases tension in this muscle
 - An over-developed Upper Trapezius can also be a contributor to the problem associated with both Temporalis and Masseter
 - Muscles of the neck, face and head are important in the global muscle function of the body
 - Habits such as chewing gum can cause repetitive stress and strain to this area
 - This muscle is considered beneficial to be treated in almost all patients with headaches.
 - Masseter
 - Forward-head posture puts masseter under undue stress
 - Changes in suboccipital muscles lead to changes in the head and face muscles.
 - Pain is referred into the eyebrow, upper and lower jaw (not toothache)
 - Masseter tightness is significant contributor to headaches.



Video: Dry Needling for Migraine Headaches

<https://cornerstonept.co/headaches-pain-causes-and-remedies/dry-needling-and-headaches-1528905128448.html>

