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# DHA TELEHEALTH CLINICAL GUIDELINES

## FOR VIRTUAL MANAGEMENT OF

### NECK PAIN – 22

#### Version 1

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## INTRODUCTION

Dubai Health Authority (DHA) is the responsible entity for regulating, licensing and monitoring health facilities and healthcare professionals in the Emirate of Dubai. The Health Regulation Sector (HRS) is an integral part of DHA and was founded to fulfil the following overarching strategic objectives:

Objective #1: Regulate the Health Sector and assure appropriate controls are in place for safe, effective and high-quality care.

Objective #2: Position Dubai as a global medical destination by introducing a value-based, comprehensive, integrated and high-quality service delivery system.

Objective #3: Direct resources to ensure happy, healthy and safe environment for Dubai population.

## ACKNOWLEDGMENT

This document was developed for the Virtual Management of Neck Pain in collaboration with Subject Matter Experts. The Health Policy and Standards Department would like to acknowledge and thank these professionals for their dedication toward improving the quality and safety of healthcare services.

### The Health Regulation Sector

### Dubai Health Authority

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## EXECUTIVE SUMMARY

Telehealth is based on Evidence Based Practice (EBP) which is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient.

It means integrating individual clinical expertise with the best available external clinical evidence and guidelines from systematic research.

EBP is important because it aims to provide the most effective care virtually, with the aim of improving patient outcomes. As health professionals, part of providing a professional service is ensuring that practice is informed by the best available evidence.

This clinical guideline for the virtual management of Neck Pain is presented in the format comprising of clinical history/symptoms, differential diagnosis, investigations and management.

Identification of 'Red Flags' or serious conditions associated with the disease is an essential part of this telehealth guideline as it aids the physician to manage patients safely and appropriately by referrals, if indicated during virtual telehealth assessment, to ER, family physicians or specialists for a face to face management.

## DEFINITIONS/ABBREVIATIONS

**Virtual Clinical Assessment:** Is the evaluation of the patient's medical condition virtually via telephone or video call consultations, which may include one or more of the following: patient medical history, physical examination and diagnostic investigations.

**Patient:** The person who receives the healthcare services or the medical investigation or treatment provided by a DHA licensed healthcare professional.

## ABBREVIATIONS

<b>CT</b>	:	Computed Tomography
<b>DHA</b>	:	Dubai Health Authority
<b>DISH</b>	:	Diffuse Skeletal Hyperostosis
<b>EBP</b>	:	Evidence Based Practice
<b>ER</b>	:	Emergency Room
<b>HRS</b>	:	Health Regulation Sector
<b>MPS</b>	:	Myofascial Pain Syndrome
<b>MRI</b>	:	Magnetic Resonance Imaging
<b>NSAIDs</b>	:	Nonsteroidal Anti-Inflammatory Drugs
<b>DHA</b>	:	Dubai Health Authority
<b>EBP</b>	:	Evidence Based Practice
<b>OPLL</b>	:	Ossification of the Posterior Longitudinal Ligament

## 1. BACKGROUND

- 1.1. Neck pain often occurs in combination with limited movement and poorly defined neurologic symptoms affecting the upper limbs. The pain can be severe and intractable and can occur with radiculopathy or myelopathy.
- 1.2. Neck pain has a prevalence of 10 to 20% in the population, which is similar to that of low back pain. However, unlike low back pain, lost time from work related to neck pain is infrequent. Degenerative changes of the cervical spine represent the most common cause of acute and chronic neck pain in adults.

## 2. SCOPE

- 2.1. Telehealth services in DHA licensed Health Facilities.

## 3. PURPOSE

- 3.1. To support the implementation of Telehealth services for patients with complaints of Neck Pain in Dubai Health Authority (DHA) licensed Health Facilities

## 4. APPLICABILITY

- 4.1. DHA licensed physicians and health facilities providing Telehealth services.
- 4.2. Exclusion for Telehealth services are as follows
  - 4.2.1. Emergency cases where immediate intervention or referral is required.
  - 4.2.2. Prescribe Narcotics, Controlled or Semi-Controlled medications.

## 5. EVALUATION

### 5.1. General approach

- 5.1.1. Initial assessment of the patient with neck pain begins with identification of any "red flags," including recent major trauma, which will guide the pace and nature of the diagnostic evaluation.
- 5.1.2. Patients with red flags generally require referral for face to face urgent evaluation.
- 5.1.3. For patients without red flags, the evaluation consists of the following:
  - a. A detailed history
  - b. Neurologic assessment
  - c. Assessment of radicular symptoms or signs using provocative maneuvers

## 6. RED FLAGS

- 6.1. Lower extremity weakness, gait or coordination difficulties, and/or bladder or bowel dysfunction suggests possible cervical cord compression or myelopathy.
- 6.2. A shock-like paresthesia occurring with neck flexion (Lhermitte's sign) suggests compression of the cervical cord by a midline disc herniation or spondylosis but may also be a sign of intramedullary pathology such as multiple sclerosis.

- 6.3. Fever raises concern for infection. Immunocompromised patients are at increased risk of infection and thus there is a low threshold for performing an infectious workup in this setting.
- 6.4. Unexplained weight loss or history of cancer raises concern for malignancy.
- 6.5. Headache, shoulder or hip girdle pain, or visual symptoms in an older person may suggest rheumatologic disease (e.g., polymyalgia rheumatic or giant cell arteritis).
- 6.6. Anterior neck pain is not typical for cervical spondylosis, and non-spinal causes of neck pain, including angina pectoris and visceral etiologies (esophageal obstruction, biliary disease, apical lung tumor) should be considered
- 6.7. Concurrent chest pain, shortness of breath, diaphoresis
- 6.8. Significant trauma (e.g. Fall, motor vehicle accident)
- 6.9. History of rheumatoid arthritis
- 6.10. Relatively young (<20) or old (>55)

## 7. CLINICAL HISTORY

- 7.1. The history is aimed at characterizing the pain and excluding red flags. Details of
  - 7.1.1. Onset
  - 7.1.2. Duration
  - 7.1.3. Characteristics of the pain
  - 7.1.4. Radiation to the arm



- 7.1.5. Associated with paresthesias
- 7.1.6. Extent to limits activity.
- 7.2. Enquire also about:
  - 7.2.1. Posture (upright, forward head with slumped thorax, or forward head with upright thorax)
  - 7.2.2. General movements (rigid and guarded, general stiffness, or loose and free)
  - 7.2.3. Neck rotation and lateral bending – sensation of pain/ spasm
  - 7.2.4. Range of motion for the cervical spine - Abnormal neck range of motion is a nonspecific finding that may be seen in cervical strain, cervical spondylosis, cervical discogenic pain, cervical facet syndrome, diffuse skeletal hyperostosis, cervical radiculopathy, and cervical spondylotic myelopathy.
- 7.3. If physical examination is required, then the patient should be referred for a face to face consultation and will include observation of neck movement, range of motion, palpation of the trapezius and paraspinal muscles, neurologic assessment for radicular and upper motor neuron signs, and provocative maneuvers in patients with radicular symptoms.

7.4. Assessment of severity: Assessment of pain severity can help inform decision-making regarding need for imaging and/or treatment. Mild pain generally refers to pain that does not limit or interrupt daily activities (such as driving, desk work, or sleep), does not affect performance of occupation, and is easily ignored when distracted. Moderate to severe pain generally refers to pain that negatively affects sleep or the ability to perform daily activities and/or occupation.

7.4.1. A 2007 multidisciplinary task force proposed the following classification schema for patients seeking care for neck pain:

- a. Grade I – No signs of major pathology and little interference with daily activities
- b. Grade II – No signs of major pathology but may impact daily activities
- c. Grade III – Neck pain with neurologic signs or symptoms (radiculopathy)
- d. Grade IV – Neck pain with major pathology (e.g., fracture, myelopathy, neoplasm, spinal infection)

7.4.2. These classifications can help determine urgency of care and appropriateness of intervention.

- a. Patients with grade I to II findings generally have a benign and self-limited course and initial treatment usually includes simple posture

modifications, exercises to maintain range of motion, and/or use of oral analgesics.

- b. Patients with grade III symptoms also tend to have a benign course, though some may require specific intervention.
- c. Patients with grade IV findings generally require more urgent evaluation and treatment.

## 8. INVESTIGATION

### 8.1. Laboratory tests

Laboratory studies are not necessary for the routine evaluation of neck pain, particularly if a musculoskeletal etiology is suspected. Laboratory testing may be helpful when non-spinal causes of neck pain are suspected (eg, rheumatologic, infectious, oncologic)

8.1.1. CBC with differential, ESR, CRP, and appropriate cultures should be obtained in patients with suspected infection.

8.1.2. CBC, urinalysis, and basic serum chemistries may be appropriate in initial tests in patients with suspected malignancy

### 8.2. Imaging

8.2.1. Most patients with atraumatic neck pain without red flags do **not** require imaging.

8.2.2. Imaging (eg, cervical spine radiography, computed tomography [CT], or magnetic resonance imaging [MRI]) is generally reserved for patients with red flags, patients with progressive neurologic findings, and patients with moderate to severe neck pain who do not respond to conservative management over 6 weeks.

8.2.3. In most patients in whom imaging is indicated, cervical spine radiography should be performed first. If this study identifies an abnormality other than age-appropriate degenerative changes, an MRI should then be obtained. However, if there is any concern for a potentially serious diagnosis (eg, infection, malignancy, serious neurologic deficits, or signs of spinal cord compression), an urgent MRI of the cervical spine should be performed instead of radiography.

## 9. TREATMENT

Treatment is based on pain control, length of symptoms (acute versus chronic) and presence of neurological symptoms. The goals of any treatment plan are to reduce pain, muscle irritability, and spasm; to reestablish normal cervical lordosis; and to restore function. Most mild to moderate strains resolve in the first 2 to 3 weeks with conservative measures. Patients with severe axial neck pain and particularly whiplash injuries may continue to have

symptoms, including headache, for longer periods of time. Acute therapy for neck pain syndromes includes

9.1. Posture modification

9.1.1. Simple posture modifications are an important part of the treatment regimen. These include sitting straight with the crown of the head tall, the chin minimally tilted down as if holding an apple under the chin, the shoulders down, and the scapula retracted and depressed. The natural tendency as we concentrate while doing desk work is to shrug the shoulders, round the shoulders forward, crane the neck forward, and intermittently breath-hold. Learning to recognize a neutral posture and a natural breathing pattern, and then identify early when these have been violated, allows us to reset many factors that lead to muscle tension.

9.1.2. Sleep position is important. The head and neck should be aligned with the body, best accomplished with a small pillow under the neck. A helpful sleep position is to have the patient lie flat on his or her back with thighs elevated on pillows, thereby flattening the long spinal muscles. Avoidance of cervical extension is helpful for patients with cervical foraminal stenosis due to uncovertebral hypertrophy or foraminal disc herniations.

9.1.3. Avoidance of a sustained seated posture is often very helpful. Patients should limit time spent sitting in front of a video terminal, prolonged telephone use, and excessive fine motor handwork. Patients with neck discomfort and sedentary jobs should make an effort to transition to standing and walking frequently, perform cervical range of motion exercises, and maintain a neutral posture whenever possible.

## 9.2. Pharmacologic measures

9.2.1. Although evidence is limited and inconsistent, acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs) may be effective for mild to moderate pain and are often the mainstays of pharmacologic therapy . which we can use in teleconsultation.

9.2.2. NSAID – eg: Diclofenac 50 mg three times a day or Ibuprofen 400 mg three times a day

9.2.3. Occasional patients with more severe pain may require mild opioid analgesics or tramadol and if this is required, the patient will need a referral for face to face consultation.

### 9.3. Home exercise

9.3.1. Home exercise maintains range of motion and helps patients become active participants in their care. Gentle stretching exercises, including shoulder rolls and neck stretches, should be instituted on daily basis once acute symptoms are under control:

a. Neck rotation: Slowly turn the head to the right. Place tension on the chin with the fingertips. Hold for a few seconds and return to the center. Repeat to the left.



b. Neck tilting - Tilt the head to the right, trying to touch the ear to the tip of the shoulder. Place tension on the temple with the fingertips. Hold for a few seconds and return to the center. Repeat to the left.



c. Neck bending – Try to touch the chin to the chest. Hold for a few seconds and return to the neutral position. Breathe in gradually, and exhale slowly with each exercise. Relax the neck and back muscles with each neck bend.

- d. Shoulder rolls – In the sitting or standing position, pull the arms backwards. Try to pinch the shoulder blades together, and then roll the arms forward then backward in a rhythmic, rowing motion.
- 9.3.1. Patients should be advised to heat their neck and upper back in a bathtub, shower, or with moist towels heated in a microwave prior to beginning exercises. The muscles are gently stretched in sets of 10 to 15 repetitions with each held for five seconds. It is best to perform the exercises in the morning and just before sleeping.
- 9.3.2. After the acute pain has resolved, stretching exercises should be continued three times per week to maintain neck flexibility.
- 9.4. Spinal manipulation
- 9.4.1. Spinal manipulation is a form of manual therapy that involves the movement of a joint near the end of its clinical range of motion.
- 9.4.2. Spinal manipulation may be appropriate for those not responding to conservative measures, including medication and home exercise instruction.
- 9.5. Cervical collar
- 9.5.1. Routine use of cervical collars should be discouraged; regular use may actually delay improvement. Nevertheless, a soft cervical collar is safe



and inexpensive, and may be helpful during periods of increased pain, particularly to facilitate sleep when this is interrupted by pain.

9.5.2. It is important to stress that collars should be worn for short periods of time (three hours or less) during the day for a period of only one to two weeks in order to avoid the development of muscle atrophy.

9.6. Patients with moderate or severe persistent symptoms beyond 6 weeks should have radiologic studies to define the etiology of their neck pain and will need referral to Family Physician/Specialist for a face to face consultation

## 10. MANAGEMENT

10.1. Refer to APPENDIX 1 for the Virtual Management of Neck Pain Algorithm

## 11. CAUSES/DIFFERENTIAL DIAGNOSIS

11.1. Musculoskeletal Conditions

11.1.1. Cervical strain — Cervical strain generally presents with pain and/or stiffness on neck movement. There is often a history of antecedent injury to the cervical para-spinal muscles, although it may result from the physical stresses of everyday life including poor posture and sleeping habits. In some cases, there may be no clear precipitating cause. The diagnosis of cervical strain is made on the basis of clinical presentation. Imaging is unnecessary. Neck pain and stiffness may last

for up to 6 weeks; alternative diagnoses should be considered in patients with longer-lasting or atypical symptoms.

11.1.2. Cervical spondylosis — Abnormalities seen on cervical spine imaging include osteophyte formation along the vertebral bodies and changes in the facet joints and lamina at multiple vertebral levels. However, correlation between the degree of disease on imaging and the presence or severity of pain is poor.

11.1.3. Cervical discogenic pain — It typically presents with pain and/or stiffness on neck movement, which is sometimes associated with pain in the upper extremities. Symptoms are often exacerbated when the neck is held in one position for prolonged periods, such as occurs with driving, reading, or working at a computer. It can occur with or without local inflammation.

11.1.4. Whiplash injury — Most commonly occur following rear-end or side impact motor vehicle collisions, but can occur from other mechanisms (e.g., occupation requiring repeatedly positioning the neck in extension). Symptoms typically include neck pain and stiffness which may present immediately after the injury or may be delayed for several days. Other symptoms may include headache, shoulder or back pain, dizziness,

paresthesias, fatigue, and sleep disturbances. The pathophysiology of this condition is unclear. Microvascular bleeding and local release of inflammatory mediators may explain the acute injury, but some patients remain symptomatic for months or even years.

11.1.5. Cervical facet osteoarthritis — Generally presents with pain and/or stiffness on neck movement. Pain may arise spontaneously or may be brought on by a flexion-extension injury. In the latter setting, there is some overlap with whiplash injury. Symptoms can be somatically referred to the shoulders, periscapular region, occiput, or proximal limb. There may be decreased range of motion associated with neck spasm.

11.1.6. Myofascial pain syndrome (MPS) — is a relatively common source of chronic pain in the general population. The pain is of a deep aching quality, occasionally accompanied by a sensation of burning or stinging. The pain often occurs in one anatomic region, such as the right side of the neck and shoulder. This distinguishes MPS from fibromyalgia, which is typically associated with widespread pain, though there is considerable overlap between the two diagnoses.

11.1.7. Diffuse skeletal hyperostosis (DISH) — is a syndrome of inappropriate bone deposition in the insertions of the ligaments and tendons. Large

osteophytes connect adjacent vertebral bodies in a somewhat asymmetric fashion. Patients with DISH may have neck, thoracic spine, low back, and/or extremity pain. Spinal morning stiffness is common. Some affected patients may complain of dysphagia due to prominent anterior vertebral hyperostosis. The diagnosis is based on specific radiographic criteria.

## 11.2. Radiculopathy/Myelopathy

11.2.1. Cervical radiculopathy — Generally presents with pain, sensory abnormalities, and/or weakness in an upper extremity. The diagnosis of cervical radiculopathy is suspected on the basis of clinical presentation. MRI with evidence of cervical nerve root compression is supportive, however imaging is usually not necessary unless there is progressive neurologic impairment. Symptoms may persist for up to 6 to 8 weeks and may be recurrent.

11.2.2. Cervical spondylotic myelopathy — Cervical spondylotic myelopathy refers to spinal cord injury or dysfunction caused by degenerative changes narrowing the spinal canal. Patients may present with a variety of neurologic complaints including lower extremity weakness, gait or coordination difficulties, and bladder or bowel dysfunction. The diagnosis

of cervical spondylotic myelopathy is suspected clinically and confirmed by MRI scan showing cervical spinal canal narrowing, spinal cord compression and signal abnormality.

- 11.2.3. Ossification of the posterior longitudinal ligament - (OPLL) is a condition of abnormal calcification of the posterior longitudinal ligament, usually in the cervical spine. Typically, present in the fifth to sixth decades of life with neck pain, stiffness, and progressive myelopathic symptoms. Cervical spine radiography or computed tomography (CT) is used to make the diagnosis.

### 11.3. Non-Spinal Conditions

Many non-spinal conditions can present with a constellation of symptoms that include neck pain. However, in most of these conditions, neck pain is not the most prominent feature and the diagnosis is often evident from other characteristic clinical manifestations (eg, fever, nuchal rigidity, exertional pain, diffuse joint pain):

- 11.3.1. Cardiovascular disease – Angina pectoris and myocardial infarction
- 11.3.2. Infection – Osteomyelitis, discitis, deep neck abscess,
- 11.3.3. Malignancy – Metastatic disease to cervical spine
- 11.3.4. Neurologic conditions – Tension headache and cervical dystonia
- 11.3.5. Referred shoulder pain – Impingement or rotator cuff tear

- 11.3.6. Rheumatologic conditions – Polymyalgia rheumatic or fibromyalgia
- 11.3.7. Thoracic outlet syndrome
- 11.3.8. Vascular conditions – Vertebral artery or carotid artery dissection
- 11.3.9. Visceral etiologies – Esophageal obstruction, biliary disease, apical lung tumor
- 11.3.10. Multiple sclerosis
- 11.3.11. Syringomyelia
- 11.3.12. Epidural abscess
- 11.3.13. Other causes of spinal cord dysfunction

## 12. REFERRAL CRITERIA

- 12.1. Refer to Family Physician/Specialist
  - 12.1.1. Past history of neck trauma
  - 12.1.2. Persists after several weeks of self-care
  - 12.1.3. Is accompanied by headache, numbness or tingling
  - 12.1.4. Neck pain associated with lower extremity weakness, gait or coordination difficulties, and/or bladder or bowel dysfunction
  - 12.1.5. A shock-like paresthesia occurring with neck flexion
  - 12.1.6. Immunosuppression
  - 12.1.7. Unexplained weight loss

- 12.1.8. History of rheumatoid arthritis
- 12.1.9. Neck pain associated with headache, shoulder or hip girdle pain, or visual symptoms
- 12.1.10. Relatively young (<20) or old (>55)
- 12.1.11. Anterior neck pain
- 12.2. Refer to ER
  - 12.2.1. Recent neck trauma
  - 12.2.2. Concurrent chest pain, shortness of breath, diaphoresis
  - 12.2.3. Neck pain associated with fever/ chills

## REFERENCES

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## APPENDIX 1 – VIRTUAL MANAGEMENT OF NECK PAIN ALGORITHM

