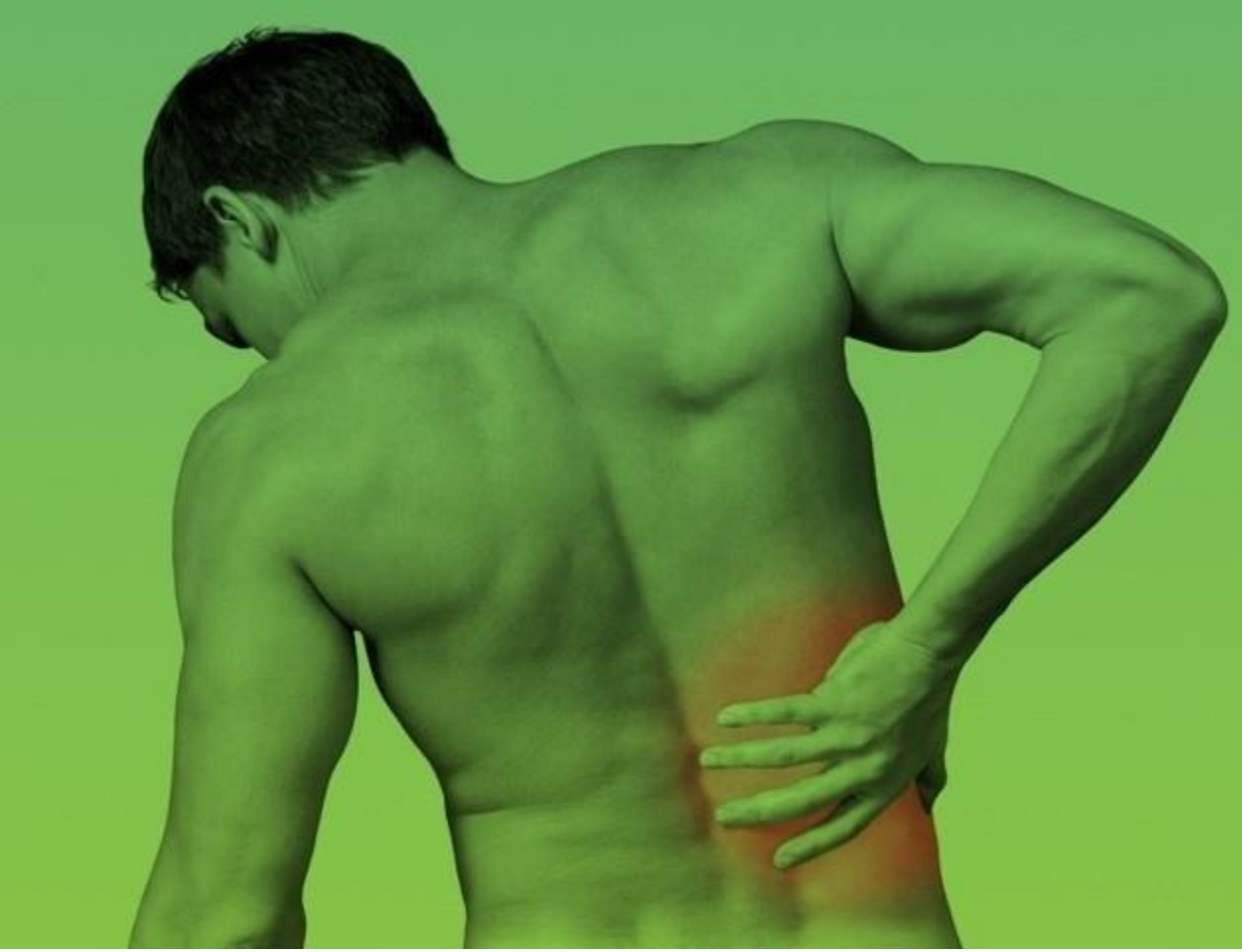

Lumbar Myofascial Pain Syndrome (Lumbar MPS)

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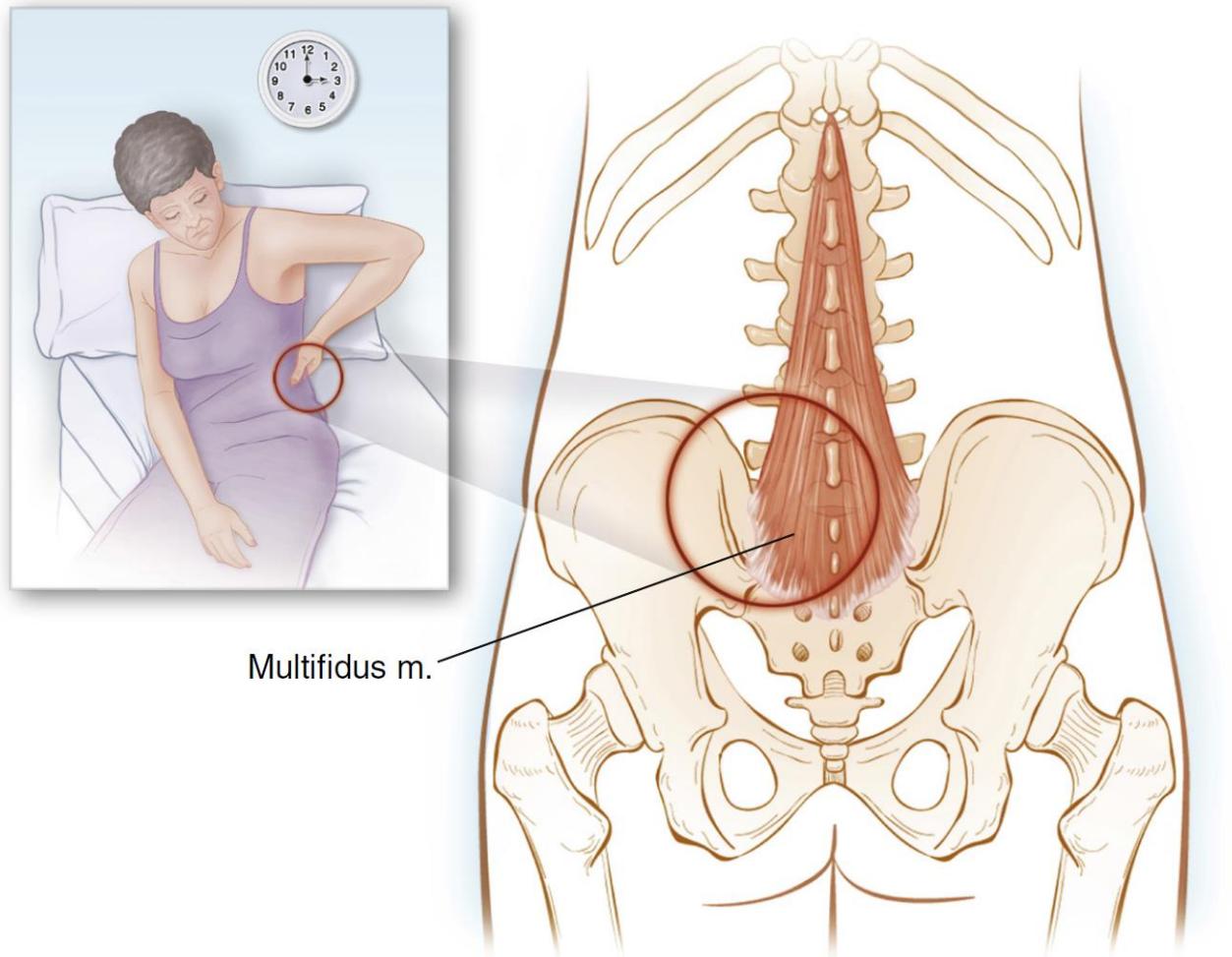
INTRODUCTION

- Myofascial pain syndrome is a chronic pain syndrome that affects a focal or regional portion of the body.
- The sine qua non of myofascial pain syndrome is the finding of myofascial trigger points on physical examination.
- Although these trigger points are generally localized to the regional part of the body affected, the pain of myofascial pain syndrome often is referred to other areas.
- This referred pain often is misdiagnosed or attributed to other organ systems, leading to extensive evaluations and ineffective treatment.

Waldman, Steven D. Atlas of Uncommon Pain Syndromes E-Book. Elsevier health sciences, 2020.

THE CLINICAL SYNDROME

- The muscles of the back work together as a functional unit to stabilize and allow coordinated movement of the low back and allow maintaining an upright position.
- Trauma to an individual muscle can result in dysfunction of the entire functional unit.
- The rhomboids, latissimus dorsi, iliocostalis quadratus lumborum, multifidus, and psoas muscles are frequent sites of myofascial pain syndrome (esp. the points of origin and attachments)
- Injection of these trigger points serves as a diagnostic and therapeutic maneuver.
- Patients with myofascial pain syndrome involving the muscles of the low back often have referred pain into the hips, sacroiliac joint, and buttocks.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SIGNS AND SYMPTOMS

- The trigger point is the pathognomonic lesion of myofascial pain.
- Mechanical stimulation of the trigger point by palpation or stretching produces not only intense local pain, but also referred pain.
- In addition to local and referred pain, an involuntary withdrawal of the stimulated muscle often occurs that is called a **jump sign**. This jump sign also is characteristic of myofascial pain syndrome.
- Taut bands of muscle fibers often are identified when myofascial trigger points are palpated.
- Stiffness and fatigue (coexistence)

PATHOPHYSIOLOGY OF THE MYOFASCIAL TRIGGER POINT

- The main pathophysiology remains elusive.*
- Common to all theories is the belief that trigger points are the result of microtrauma to the affected muscle.
- This microtrauma may occur as a single injury to the affected muscle or as the result of repetitive microtrauma or chronic deconditioning of the agonist and antagonist muscle unit.

*Cao QW, Peng BG, Wang L, et al. Expert consensus on the diagnosis and treatment of myofascial pain syndrome. World J Clin Cases. 2021;9(9):2077-2089. doi:10.12998/wjcc.v9.i9.2077

PREDISPOSING FACTORS

- Unaccustomed physical activity in weekend athlete
- Poor posture while sitting for a long time
- Previous injuries resulted in abnormal muscle function
- Poor nutritional status (intensifier)
- Coexisting psychological or behavioral abnormalities, including chronic stress and depression (intensifier)
- The muscles of the low back seem to be particularly susceptible to stress-induced MPS

PROBABLE CONJUNCTIONS

- Radiculopathy
- Chronic regional pain syndromes
- Psychological or behavioral abnormalities, including depression

DIAGNOSTING TESTING

- No specific test exists for lumbar myofascial pain syndrome.
- Plain radiographs help delineate bony abnormality of the lumbar spine, including arthritis, fracture, congenital abnormalities (e.g., trefoil spinal canal), and tumor.
- LS-MRI (for all patients with recently diagnosed MPS)
- Screening laboratory tests, consisting of CBC, ESR, ANA & automated blood chemistry testing

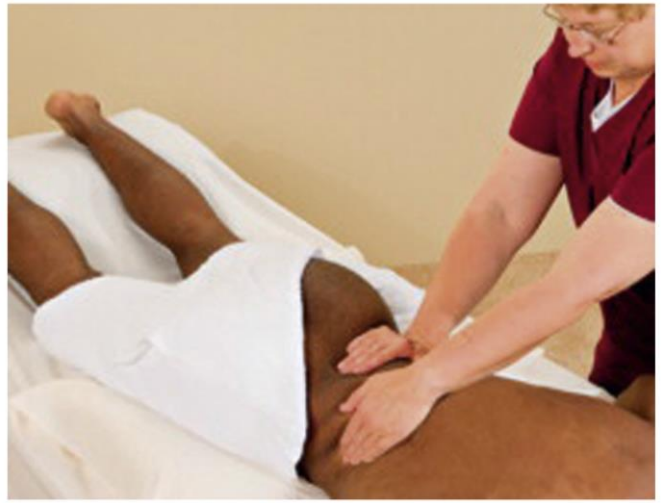
DIFFERENTIAL DIAGNOSIS

Lumbar myofascial pain syndrome is a clinical diagnosis of exclusion

- Lumbar strain
- Inflammatory arthritis
- Disorders of the lumbar spinal cord, roots, plexus, and nerves
- Congenital abnormalities, such as AVMs, trefoil spinal canal, and spondylolisthesis

FIRST STEP TREATMENT

- Physical therapy, including correction of functional abnormalities (e.g., poor posture, improper chair or computer height)
- Heat modalities (e.g. Diathermy or Tecar therapy (TT)*)
- Deep sedative massage
- Nonsteroidal anti-inflammatory drugs (NSAIDs)
- Skeletal muscle relaxants
- Cupping therapy**



*Yeste-Fabregat M, Baraja-Vegas L, Vicente-Mampel J, Pérez-Bermejo M, Bautista González IJ, Barrios C. Acute Effects of Tecar Therapy on Skin Temperature, Ankle Mobility and Hyperalgesia in Myofascial Pain Syndrome in Professional Basketball Players: A Pilot Study. Int J Environ Res Public Health. 2021;18(16):8756. Published 2021 Aug 19. doi:10.3390/ijerph18168756

**Moura CC, Chaves ÉCL, Cardoso ACLR, Nogueira DA, Corrêa HP, Chianca TCM. Cupping therapy and chronic back pain: systematic review and meta-analysis. Rev Lat Am Enfermagem. 2018;26:e3094. Published 2018 Nov 14. doi:10.1590/1518-8345.2888.3094

NEXT

- Local trigger point injection (LA ± CS)
- Dry needling (larger needles (0.9-mm diameter) may be better than that of smaller ones (0.5-mm diameter))*

All current evidence is not robust to draw a firm conclusion regarding the efficacy and safety of DN for LBP.**

- TCAs (primary pharmacological option & better than SSRIs)
- Clonazepam
- Botulinum Toxin***

*Wang G, Gao Q, Li J, Tian Y, Hou J. Impact of Needle Diameter on Long-Term Dry Needling Treatment of Chronic Lumbar Myofascial Pain Syndrome. Am J Phys Med Rehabil. 2016;95(7):483-494. doi:10.1097/PHM.0000000000000401

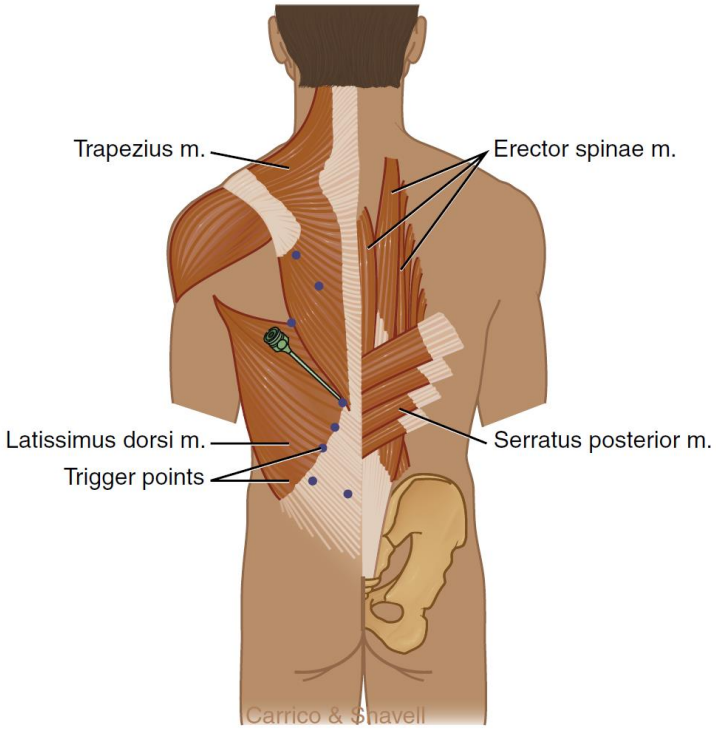
**Hu HT, Gao H, Ma RJ, Zhao XF, Tian HF, Li L. Is dry needling effective for low back pain?: A systematic review and PRISMA-compliant meta-analysis. Medicine (Baltimore). 2018;97(26):e11225. doi:10.1097/MD.0000000000011225

***Sim WS. Application of botulinum toxin in pain management. Korean J Pain. 2011;24(1):1-6. doi:10.3344/kjp.2011.24.1.1

TRIGGER POINT INJECTION TRICKS

- Trigger point injections are directed at the primary trigger point, rather than the area of referred pain.
- It should be explained to the patient that the goal of trigger point injection is to block the trigger of the persistent pain and, it is hoped, provide long-lasting relief.
- It is important that the patient understands that for most patients with myofascial pain syndrome, more than one treatment modality is required to provide optimal pain relief (a series of two to five treatment sessions).
- The prone or lateral position is preferred.
- Antiseptic preparation of the overlying skin is mandatory.

- Relocate the trigger points after aseptic preparation of the overlying skin while wearing sterile gloves.
- A volume of 0.5 to 1 mL of solution (0.25% preservative-free bupivacaine and 40 mg of methylprednisolone) is injected into each trigger point.
- Proper needle is a 25-gauge needle of a length adequate to reach the trigger point.



COMPLICATIONS AND PITFALLS

- Pneumothorax or damage to the retroperitoneal organs, including the kidneys in use of large needles
- Transient increase in pain following injection
- Ecchymosis and hematoma formation (can be decreased if pressure is placed on the injection site immediately after the injection)


THANK YOU