Myofascial Pain Syndromes–Trigger Points

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INTRODUCTION

This review includes several fascinating research studies, case reports, and review articles illustrating the importance of myofascial trigger points [TrPs] in the etiology and presentation of migraine headaches, pelvic pain, traumatic muscle ruptures, and even postherpetic neuralgia. The first two articles report on TrPs as a cause of headaches and further infuse TrP thinking into the headache and neurology literature. Three authoritative articles clearly identify the critically important role of TrPs in pelvic pain and dysfunctions. The two articles by Fitzgerald and Kotarinos are considerably more detailed and more extensively sprinkled with a treasure chest of noteworthy pearls. Lastly, two case reports illustrate how treatment of TrPs can be very effective even when medical consensus suggests more standard interventions. Each article review indicates whether it is prepared by Simons [DGS] or Dommerholt [JD].

CLINICAL STUDIES

Fernández-de-las-Peñas C, Alonso-Blanco C, Cuadrado ML, Gerwin RD, Pareja JA: Trigger points in the suboccipital muscles and forward head posture in tension-type headache. Headache 46(3): 454-460, 2006.

Summary

Twenty patients with chronic tension-type headache and 20 matched controls without headache were examined for active and latent myofascial trigger points [TrPs] that were identified by the referred pain produced by palpation and muscle contraction. A blinded assessor made photographic measures of forward head posture and each subject kept a headache diary for four weeks. Sixty-five percent of the patients had active TrPs and 35 percent of them had latent TrPs in the suboccipital muscles. Thirty percent of control subjects had latent TrPs there. The difference in latent TrPs between groups was not statistically significant, but the difference in active TrPs was $P < 0.05$. Forward head posture was greater in patients than in controls, both when sitting and standing [$P < 0.01$]. The authors concluded that the frequency and duration of chronic tension-type headache and the degree of forward head posture correlated positively with the presence of active suboccipital TrPs.

Comments

This blinded, controlled study is a refreshing example of quality TrP research where it is desperately needed. For too long, the headache literature has been blind to the fact that TrPs are a

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major source of headache. This is the second Fernandez/Gerwin paper to start opening that Pandora's box (1). In the discussion the authors noted that in addition to suboccipital muscles, TrPs in other posterior cervical, neck, and shoulder muscles could contribute to headaches. One unidentified weakness of this study was the failure to examine these other muscles for active and latent TrPs. They may help to explain why a considerable number of these headache patients had only latent TrPs; other active ones causing it may not have been identified. The increased forward head posture with greater headache duration and frequency may be the result of shortening of the suboccipital muscles due to increased muscle tension from the increasingly taut bands of the more active TrPs.

The fact that patients and controls had nearly equal numbers of latent TrPs in the suboccipital muscles is consistent with, but does not necessarily indicate, that individuals with a genetic tendency to develop latent TrPs are more likely to develop active TrPs, and that the additional, active, TrPs in the headache subjects represents latent TrPs that were activated and produced headache symptoms. This possibility needs further investigation along with the TrP origin of other kinds of headache. [DGS]

Calandre EP, Hidalgo J, García-Leiva JM, Rico-Villademoros F: Trigger point evaluation in migraine patients: An indication of peripheral sensitization linked to migraine predisposition? Eur J Neurol 13(3): 244-249, 2006.

Summary

With this paper the authors explore the presence of myofascial trigger points [TrP] in persons with migraine headaches, the frequency of referred pain, and the correlation between TrPs and the frequency of migraine attacks, and duration of the illness. Ninety-eight persons with migraine headaches characterized by at least three migraine attacks per month were included. Of that group eight subjects had migraines with aura, and 90 without. Nearly 36 percent met the International Headache Society's criteria for chronic migraine. The control group consisted of 36 subjects and included 18 subjects with infrequent tension-type headaches defined as less than one attack per month. An examiner trained in the identification of TrPs palpated all subjects bilaterally in the frontal, temporalis, and trapezius muscles, and in the suboccipital and occipital areas, using no more than 4 kg of pressure force. The authors differentiated between referred pain with myofascial or migraineous characteristics. Migraineous referred pain was defined as pain characteristic of migraine attacks.

Twenty-nine percent of the control group reported myofascial referred pain compared to 94 percent of the migraine subjects reporting migraineous pain. Forty-one percent of the latter also reported myofascial referred pain. In 30 percent of the migraine group, palpation of TrPs elicited a "full-blown migraine attack which required abortive treatment." The number of TrPs in the control subjects with referred pain ranged from one to five, compared to none to fourteen in the migraine subjects. The researchers found a positive relationship between the number of TrPs and the frequency of migraine attacks and duration of the illness. The location of TrPs was highly consistent with 43 percent in the temporal areas, 33 percent in the suboccipital areas, and 24 percent elsewhere. The authors determined TrPs in the anterior temporal and suboccipital areas as typical for migraines and TrPs in other areas as atypical.

The authors proposed that migraine TrPs are spontaneously hyperactive peripheral nociceptors. As they observed that nearly all initial TrPs linked to migraines were found in the temporal and suboccipital areas, they suggested that there may be a hierarchy in the recruitment of nociceptors. Therapeutic measures such as dry needling, acupuncture, and even botulinum toxin injections may be effective because of their effect on the excitability of myofascial nociceptors. The paper concluded with a brief review of some of the limitations of the study.

Comments

This excellent article highlights the importance of TrPs in the etiology of migraine headaches. Even though the study was not blinded and the sample was not randomly selected, the consistencies in TrP location, referred pain patterns, and the correlations between number of TrPs and frequency of attacks and duration of illness do support the notion that TrPs may indeed contribute to peripheral and central sensitization in migraine patients. Including the assessment for TrPs in the examination of persons with migraine headaches is highly recommended. [JD]

Ojala T, Arokoski JPA, Partanen J: The effect of small doses of botulinum toxin A on neck-shoulder myofascial pain syndrome: A double-blind, randomized, and controlled crossover trial. Clin J Pain 22: 90-96, 2006.

Summary

Fifty-three consecutive subjects were recruited by newspaper advertisement and screened for this study of neck/shoulder pain with myofascial trigger points [TrPs] in trapezius, levator scapulae, and infraspinatus muscles bilaterally. Thirty-one [90 percent females] qualified. They met the rigorous TrP criteria of pain or paraesthesia in the typical TrP distribution, exquisite tenderness of a taut band of muscle with corresponding restricted range of motion plus one of three other findings: reproduction of patient's pain pattern, elicited local twitch response, or restricted range of motion in the affected muscle. Fibromyalgia syndrome and neurological diseases were excluded.

A crossover design randomized who started in which group. The two treatment groups received injections in active TrPs in three to seven muscles. One group received five units of botulinum toxin A through the same needle as used for electromyographic guidance. The crossover group received comparable injections of physiological saline. A non-tender control reference point in the deltoid muscle bilaterally received a needle insertion without injection at each treatment session for both groups. Short-term treatment results were assessed by pressure pain threshold readings of all needled sites, before the second set of injections four weeks following the first injection, and at four weeks after the second treatment. In addition, subjects rated the severity of neck-shoulder pain on the usual 0-10 visual analog scale before each session and also, efficacy of treatment using a 1-5 verbal rating on a very good to none scale. The tenderness [pain pressure threshold] of all needled sites was measured with a Fischer dolorimeter.

The two treatment groups both showed a 37 percent reduction in pain reports following treatment [$P < 0.006$]. Sixty-one percent of the patients experienced more than a 30 percent [clinically significant] reduction in pain, 39 percent did not. Overall, pressure pain threshold readings increased [less tender] 13.3 percent for saline injections but only 4.2 percent for botulinum toxin A injections. Improvement was greater following a first injection than following a second one [probably treatment effect]. The reference deltoid site showed reduced tenderness during the treatment period. Patient estimates of final efficacy were essentially the same for both treatments. The authors concluded that the clinical effectiveness of the two treatments was the same, indicating that needling the TrP with either liquid is equally efficacious. The reason for the reference site results is ambiguous.

Comments

This is a well-designed study for comparing two treatments of TrPs, including a full description of the diagnostic criteria used and elimination of fibromyalgia patients. While there is growing evidence that botulinum toxin A is a potentially useful injectable for persistent TrPs (2-7), the dosage of only five units is apparently too small to make any significant difference for the muscles included in this study. Injecting botulinum toxin A into TrPs is consistent with the integrated trigger point hypothesis, which suggests that TrPs are the result of excessive release of acetylcholine from the motor endplate (8). Following injection, botulinum toxin A binds to and is internalized by cholinergic neurons, and cleaves one of the proteins necessary for acetylcholine release. In addition to blocking the release of acetylcholine, botulinum toxin A inhibits calcitonin gene related peptide, glutamate, and substance P, which are all involved in the TrP pathology (9-11).

Unless appropriate dosages of botulinum toxin A are used, inserting a needle into a TrP is often much more important than what is injected as has been demonstrated by numerous previous articles. Frequently the patient is better served clinically to have their TrPs released by skillful application of manual techniques than by injection. Unfortunately, the reference deltoid site cannot be considered an adequate control for the treatments. The positive results from this site were only listed in a table and were not analyzed in comparison to the other data. This result was interesting and deserves further study to clarify why it became less tender during the treatment period. The authors made no mention of the critical importance of eliciting local twitch responses as part of the treatment process, probably because they depended on the EMG guidance to place the needle at an affected motor endplate.

The fact that more than one-third of the patients failed to achieve at least a 30 percent improvement with treatment so specific for TrPs indicates that numerous TrPs causing the subjects' neck and head pain were likely overlooked. This could be expected, considering that numerous important head and neck muscles causing neck and head pain were not examined or treated. The favorable results from treatment of this limited number of muscles do suggest that appreciatively better patient results would have resulted from more comprehensive treatment.

The authors did not include one recent reference that make three of their references highly anachronistic (8). The most recent reference was published shortly after this paper was originally submitted. They made two statements that warrant correction. The statement that "the cause of MPS is obscure" has now been clarified in a current summary of the intervening papers and of the integrated hypothesis that is gaining acceptance by other authors (8). The other statement that "No consistent inflammatory . . . alterations of painful muscle have been observed" has been rendered anachronistic in the paper by Shah et al. (11). It convincingly demonstrates multiple changes of the biochemical milieu of active TrPs some of which are well-known strong stimulators of nociceptors. [DGS]

Ney JP, Difazio M, Sichani A, Monacci W, Foster L, Jabbari B: Treatment of chronic low back pain with successive injections of botulinum toxin a over 6 months: A prospective trial of 60 patients. Clin J Pain 22(4): 363-369, 2006.

Summary

Sixty patients met the following inclusion criteria to participate in this study: 1. chronic and stable low back pain of at least six months duration, 2. ages 18 to 80 years old, 3. no acute pathology, 4. failure of medical or surgical treatments, 5. no current or planned pregnancy, 6. no ongoing litigation or workers' compensation, 7. no systemic inflammation, 8. no disorders of neuromuscular transmission, and 9. no known allergy or sensitivity to botulinum toxin A. Subjects were assessed at baseline, with follow up assessments at three weeks, two months, four months, and six months after the initial treatment using standardized tests. Subjects were injected with 40 to 50 units of botulinum toxin A into four or five myofascial trigger points [TrPs] or areas of muscle spasm in the paravertebral muscles with no more than a total of 500 units per treatment. Patients with a favorable response at two months follow-up received a second set of injections after four months.

After two months, 58 percent of the subjects had a favorable response measured by at least two of the following parameters: 1. a 50 percent reduction in pain intensity, 2. at least a two-grade improvement in the pain subset of the Clinical Low Back Pain Questionnaire [CLBPQ], 3. at least a 30 percent decrease in the number of pain days on the CLBPQ. Almost 17 percent of patients reported ongoing benefit from the initial treatment and were excluded from further treatments. Twenty-two out of 35 patients were re-injected at four months. Three of the subjects were lost to follow up, leaving 19 subjects. Eighteen subjects reported once again a beneficial response to botulinum toxin A injections. The authors concluded that an initial beneficial response to botulinum toxin A injections predicts a beneficial response to a second treatment. Radicular pain improved in 68 percent of patients. The effects of botulinum toxin injections into TrPs may persist well beyond four months [27 percent] and even beyond six months [13 percent]. The authors recognized some of the limitations of this study particularly the lack of blinding and randomization.

Comments

The authors mentioned in passing that the injections were administered into TrPs without defining which criteria were used, nor did they state which muscles were actually treated. Did they inject the longissimus muscles, the multifidi, or the quadratus lumborum? A major limitation of this study is the lack of a control group. Unlike in the Ojala et al. study reviewed above, the current study did not have a control group who received saline injections or other comparable intervention. Subjects in this study were less responsive to conventional treatments. Botulinum toxin A remains a promising modality for the treatment of TrPs, especially when other treatments have not resulted in satisfactory results (2-7). [JD]

FitzGerald MP, Kotarinos R: Rehabilitation of the short pelvic floor. I: Background and patient evaluation. Int Urogynecol J 14: 269-275, 2003.

Summary

The introductory review identifies a sampling of published identifications of the abdominal-pelvic pain syndromes that include piriformis syndrome, coccygodynia, levator ani spasm syndrome, proctalgia fugax, trigger points [TrPs], genitourinary pain, prostatodynia, vulvodynia, and interstitial cystitis.

Normal function of the lower urinary tract and anorectum depend so highly on proper function of pelvic floor muscles [PFM] that shortness or weakness of those muscles produces more symptoms than if they occurred in limb muscles. Patients with pelvic and bladder complaints characteristically exhibit panniculosis [increased consistency and resistance to skin rolling] with TrPs in underlying muscle. Since TrPs cause any muscle to become shortened, contract slowly, and relax slowly, TrPs in the levator ani group will cause it to be short, contract weakly, and relax slowly. The result is limitation of this group's ability to inhibit the detrusor during bladder filling, resulting in urinary urgency and frequency.

Additional voluntary effort to inhibit detrusor function during filling to suppress urinary urgency causes further PFM pain. These TrP characteristics can also cause stress incontinence during a cough do to inadequate contribution to reflex urethral closure. Failure of the levator ani group to relax normally during and after defecation can produce voiding dysfunction and constipation. The TrPs in this muscle group can produce referred symptoms ranging from vague suprapubic or pelvic discomfort to frank pain. The coactivation of abdominal and PFM muscles that is considered necessary for stabilization of the spine and trunk is also disrupted by abdominal wall TrPs or by tender abdominal wall surgical scars.

The extrapelvic musculoskeletal exam includes the usual postural, gait, and anatomical asymmetry considerations. Abnormalities [TrPs] of the iliopsoas, gluteal, quadratus lumborum, obturator internus [extrapelvic attachment], and piriformis muscles are evaluated because of frequent coexistence of abnormalities in these muscles and in the PFM muscles.

Palpation for connective tissue changes in the skin and subcutaneous tissues includes skin rolling, examination of all scars, and non-muscular TrPs for tenderness. These changes are most common in specific areas of the abdominal wall, lower back, buttocks, vulva, and thighs and are commonly observed when there is pelvic floor involvement. Treatment of perineal scars, even if decades old, can contribute relief to pain, dyspareunia, dysfunctional voiding, and constipation.

The description of the vaginal examination of intrapelvic muscles is remarkably complete and detailed with much attention paid to minimizing painfulness of the exam. This exam includes the iliococcygeus muscle, ischial spine, coccygeus, piriformis, obturators internus [intrapelvic attachment] muscles, pudendal nerve, and the arcus tendineus fascia of the pelvis. In addition the authors describe testing the normality, symmetry, and strength of pelvic floor voluntary contractions, and evaluate the subsequent relaxation. Common sites of TrPs in these muscles are well illustrated.

The authors note the importance of including examination of abdominal wall muscles for TrPs and of nerves for neurotension caused by local restriction of normal nerve mobility during stretching by body movements. It includes testing mobility of the sciatic and pudendal nerves. Also, the authors fully describe and illustrate the importance of, technique of, and interpretation of vaginal pressure measurements.

Finally the results of a chart review of 49 women with symptoms of urinary urgency frequency and/or pelvic or bladder who were referred for pelvic floor physical therapy evaluation and treatment are tabulated and briefly discussed. This is a most valuable source of past medical history that identifies nine common established medical diagnoses when TrPs were usually overlooked and identifies 11 common presenting symptoms. The table of 10 major physical findings includes the prevalence of five common TrP locations in these patients. Trigger points were found in the levator ani in 92 percent of the patients, in suprapubic muscles in 65 percent, obturator internus in 45 percent, and iliopsoas in 43 percent of the patients.

Comments

This paper is remarkable for its clarity, completeness, and credibility. The final table presents TrP data not previously available and gives helpful guidance as to the most important muscles to examine clinically in patients who are suffering any of these pelvic symptoms. The percentages make it abundantly clear that these muscles are a major source of pain and dysfunction in women suffering from pelvic symptoms and that a skillful TrP pelvic examination is essential. Fortunately, levator ani TrPs can be detected by external examination of the internal borders of the coccyx for attachment TrP tenderness. Often simply attempting to slip a finger underneath the tail end of the coccyx elicits an unambiguous response [this pearl thanks to Karel Lewit of the Czech Republic].

I know the second author personally. She has dedicated decades of her life to helping female patients suffering from pelvic pain and has developed remarkable competence, obtaining outstanding clinical results that include a member of my family. [DGS]

REVIEWS

Mayoral del Moral O, Romay Barrero H: Fisiorerapia conservadora del síndrome de dolor miofascial [in Spanish: Conservative physical therapy in myofascial pain syndrome]. Rev Iberoam Fisioter Kinesiol 8(1): 11-16, 2005.

Summary

This Spanish-language paper reviews the more common manual and modality treatment options for myofascial pain and myofascial trigger points [TrPs]. After a brief introduction, the authors, who are physical therapists, review the current literature about stretching, spray and stretch, pressure release, massage therapy, post-isometric relaxation, and position release. Physical modalities included ultrasound, moist heat, electro-therapy, and other modalities, such as laser and biofeedback. In several places, the authors indicate whether there is any scientific evidence for the various treatment options commonly used in clinical practice.

Comments

One of the main values of review articles is that new audiences are being introduced to TrPs and their importance in clinical practice. While this paper does not introduce any new concepts, it does provide a succinct review of the more commonly used treatment approaches. [JD]

Borg-Stein J: Treatment of fibromyalgia, myofascial pain, and related disorders. Phys Med Rehabil Clin N Am 17(2): 491-510, 2006.

Summary

Fibromyalgia syndrome and myofascial pain are frequently confused in clinical practice. This paper reviews the typical clinical presentations of both syndromes, their pathophysiology, and common treatment options. A section devoted to differential diagnosis is particularly important and includes several diagnostic questions and considerations when making the most likely medical diagnosis. The pathophysiology section is somewhat biased toward myofascial pain and gives a remarkable up-to-date review of current scientific findings, including the biochemical myofascial trigger point [TrP] research by Shah et al. (11) and current topics of spinal mechanisms of pain and central sensitization. The treatment section combines pharmacological treatment options for both fibromyalgia syndrome and myofascial pain. Non-pharmacological management options include postural, mechanical and ergonomic modifications, stress reduction, acupuncture, exercise, TrP injections, and dry needling. The author concludes with a brief review of her treatment principles, which include being a sympathetic provider, identifying peripheral pain generators, making an accurate diagnosis, and offering a comprehensive treatment approach.

Comments

The author has managed to synthesize the most pertinent aspects of both fibromyalgia and myofascial pain into a comprehensive review. There is only one issue that keeps showing up in this and similar review articles and that is the statement that "dry needling of the TrP provides as much pain relief as injection of lidocaine but causes more postinjection soreness." Commonly, as is the case in this article, a paper by Hong et al. is quoted (12). However, Hong et al. compared lidocaine injections with dry needling using a syringe and not an acupuncture needle. In clinical practice, dry needling is typically performed with an acupuncture needle and to the best of my knowledge there are no studies that compare dry needling with acupuncture needles to lidocaine injections. [JD]

Forst R, and Ingenhorst A: Das myofasziale Syndrom [In German: Myofascial pain syndrome]. Internist (Berl) 46(11): 1207-1217, 2005.

Summary

The last review article of myofascial pain syndrome in this series appeared in a German internal medicine journal. The authors prepared a thorough summary of muscle physiology, pathophysiology of myofascial trigger points [TrPs], including a detailed description of the integrated trigger point [TrP] hypothesis, and common management strategies. The article is well-illustrated and concludes with several examples of the relevance of TrPs within internal medicine practice.

Comments

This is another excellent review of the current status of TrP research. As is common with review articles, the authors do not introduce any new findings, hypotheses, or theories, but managed to put together a well-rounded review appropriate to introduce internists to the concepts of myofascial pain. [JD]

FitzGerald MP and Kotarinos R: Rehabilitation of the short pelvic floor: Treatment of the patient with the short pelvic floor. II: Int Urogynecol J Pelvic Floor Dysfunct 14(4): 269-275, 2003.

Summary

Rehabilitation of a short pelvic floor is usually successful in 10 treatments of one hour weekly based on proceeding in the following order, which minimizes the need for transvaginal manipulation. Eliminating activities that usually aggravate the problem require: stopping Kegel-type exercises and abdominal wall strengthening exercises like sit-ups, and avoiding restrictive [tight] slacks, jeans, or panty hose with a seam at the body-thigh interface.

Extrapelvic musculoskeletal abnormalities such as lower limb-length inequality, small hemipelvis, and postural misalighnments must be addressed. Treatment techniques for connective tissue abnormalities, especially panniculosis, are described fully and well illustrated. Abdominal and perineal scars causing tissue restriction of any degree must be released. Several techniques are described. Closure of any abdominal wall diastasis is necessary and several exercises that carefully avoid any standard abdominal wall strengthening exercises are proposed to facilitate closure, usually in about six weeks. Any myofascial trigger points [TrPs] in extrapelvic muscles [iliopsoas, piriformis, quadratus lumborum, and gluteal muscles] are released.

Any TrPs remaining in the pelvic floor musculature must now be released using barrier release [TrP pressure release], contract/relax, postisometric relaxation, reciprocal inhibition, and proprioceptive neuromuscular facilitation.

Each of these is described in detail. If needed, transvaginal injection of the TrPs is described. For especially sensitive patients and for those requiring release of pudendal nerve tension, a pudendal nerve block by a general obstetrician/gynecologist may be necessary.

The home maintenance program includes abdominal wall stretching exercises, knee pushes [illustrated], pelvic drops [lengthening], and manual mobilization of scars. Timed voiding desensitizes urinary frequency by progressive increase in voiding intervals. Knee pushes and/or pelvic drops can help to postpone voiding.

Comments

This is a remarkably comprehensive and detailed description of what sounds like it should be, and from clinical experience seems to be, a very clinically effective approach to treatment and management of pelvic pain in female patients. It is hoped the authors will do a controlled blinded study of that approach so it can become a part of the recognized evidenced-based practice by clinicians. [DGS]

Prendergast SA, Weiss JM. Screening for musculoskeletal causes of pelvic pain. Clin Obstet Gynecol 46(4): 773-782, 2003.

Summary

This is a clinically oriented overview of a combined neuromuscular examination of the pelvic structures. The onset of pelvic pain is usually caused by trauma that may have occurred many years earlier. History of urinary infection [but now with repeated negative cultures], childbirth, abdominal surgery, falls on the hip region, sacroiliac dysfunction, a long bike ride, or car accident call for examination of all potential muscular and visceral source of pain since they can generate similar referred pain patterns. A shortened quadratus lumborum muscle can lead to myofascial trigger points [TrPs] in the pubourethralis and obturator internus muscles producing urinary symptoms.

Restricted mobility producing increased tension of peripheral nerves including the iliohypogastric, ilioinguinal, genitofemoral, lateral femoral cutaneous, femoral, pudendal, sciatic, and obturator internus can cause pelvic pain. Sacroiliac joint dysfunction can produce tension and inflammation of the sacrotuberous and sacrospinous ligaments pinching and restricting mobility of the pudendal nerve. This problem is identified by neurodynamic [stretch] testing and palpation of the nerve, which should not be painful procedures.

The external muscle exam for TrPs should include the iliopsoas, piriformis, quadratus lumborum, transverse abdominal, rectus abdominis, and the gluteus maximus and medius muscles.

The intrapelvic examination for TrPs should include the sphincter ani, transverse perinei, levator ani, coccygeus, ischiocavernosus, bulbocavernosus, and obturator internus. A table lists the referred patterns of each. Kegel-type exercises are clearly contraindicated when the problem is caused by TrPs, which it usually is. Palpation of problematic pubourethralis and urethrovaginal sphincter muscles by vaginal examination elicits tenderness and urgency.

Comments

The authors present a knowledgeable review of TrPs and restrictions of nerve mobility that cause pelvic pain and dysfunction. Unfortunately the key TrP reference was in error. Volume 2 of the Trigger Point Manual (13) that includes the pelvic muscles was published in 1992, not 1983. The 1983 volume 1 reference was badly out of date, overlooking the 1999-second edition. The appropriate concluding emphasis on physical therapy manual treatments concentrated on myofascial release, which is often helpful and is intended to stretch-release muscle as whole and its associated fascia. Not mentioned are some more MTrP-specific and very effective manual release techniques commonly used by therapists who are skilled at treating TrPs. They include pressure release, contract-relax, postisometric relaxation and reciprocal inhibition. [DGS]

CASE STUDIES

Grieve R: Proximal hamstring rupture, restoration of function without surgical intervention: A case study on myofascial trigger point pressure release. J Bodywork Movement Ther 10(2): 99-104, 2006.

Summary

A 26-year-old female tennis player and runner suffered a hyperextension injury of her left knee while water skiing, which resulted in a proximal rupture of the biceps femoris, semimembranosus, and semitendinosus. Although medical consensus dictates that surgical repair is the best treatment for hamstrings ruptures, the patient declined surgical intervention and opted for physical therapy instead. After the first course of physical therapy, which included hydrotherapy, electrotherapy, and exercise, she had regained a 60 percent improvement in power as assessed isokinetically, but she was not able to return to athletic activities, especially running. She was referred to another physical therapist, who evaluated her for the presence of trigger points [TrPs]. At that point, she was already 19 months post-injury. Her running capacity was limited to only four to five minutes with increased pain during three to four days.

The patient presented with multiple TrPs in the left hamstrings and lateral and medial head of the gastrocnemius. The physical therapist used the criteria from Simons, Travell, and Simons (13). The objectives of physical therapy were to restore her pre-injury athletic ability, reduce the sensitivity of the TrPs, and increase the power of the hamstrings. During the first treatment session, the physical therapist used manual TrP release and passive stretching, which resulted in an immediate increase in ankle dorsiflexion and hamstrings strength. A week later, the patient reported being able to dance an entire night. There was only one sensitive TrP left. At the time of the third physical therapy session, she was able to run six minutes daily without any post-activity pain. She still had one TrP in the semimembranosus muscle. She had reached her treatment goals by the fourth session. Long-term follow up at three and six months revealed no further pain and dysfunction.

Comments

This is another excellent example of the importance of assessing patients for the presence of TrPs, even when the medical consensus dictates otherwise. The author presents an eloquent review of the case history and treatment. Of particular interest is the fact that the primary choice of treatment was manual pressure release of MTrPs. It is unfortunate that these kind of treatments are not available to so many patients worldwide. Instead, patients are treated with inadequate interventions and expensive surgeries without ever reaching their functional goals. [JD]

Weiner DK, Schmader KE: Postherpetic pain: More than sensory neuralgia? Pain Med 7(3): 243-249, 2006.

Summary

The authors of this article present five case reports of patients with post-herpetic neuralgia who were successfully treated with myofascial trigger point [TrP] inactivation techniques, including dry needling, percutaneous electrical nerve stimulation, TrP injections, stretching exercises, physical therapy, and pharmacologic management. The first successful case required only three dry needling sessions during which local twitch responses were elicited. The patient was a 71-year-old female with postherpetic neuralgia for 18 months. She had been treated previously with gabapentin, oxycodone, acetaminophen, chiropractic manipulations, and epidural corticosteroids. The second case has a similar overall history characterized by several ineffective interventions. Once TrPs were identified, the patient was treated with a combination of cervical percutaneous electrical nerve stimulation and dry needling for only four sessions resulting in a dramatic decrease in pain.

The introduction and discussion sections of this article bring up many interesting points. While postherpetic neuralgia is generally considered to be a sensory problem, the authors hypothesize that the pain may actually be caused by a combination of the varicella zoster virus and axial spondylosis or degenerative scol-

iosis, which may trigger not only adaptive muscle shortening and TrPs, but also lead to the development of peripheral nerve injury and central sensitization. They recommend examining all patients with postherpetic neuralgia for TrPs. The included case reports strongly support that TrPs may be contributing to the persistent nature of postherpetic neuralgia.

Comments

This is a rather remarkable series of case reports demanding a shift in the thinking about postherpetic neuralgia. Only one previous report has described the relevance of TrPs in the symptomatology of this disabling condition (14). As the authors indicate, the astonishing results of TrP inactivation suggest that prospective studies of the correlation between TrPs and postherpetic neuralgia are desperately needed. [JD].

BRIEF REPORT

Peng PW, Castano ED: Survey of chronic pain practice by anesthesiologists in Canada. Can J Anaesth 52(4): 383-389, 2005.

This study examined the nature of chronic pain management practice among anesthesiologists in Canada. The authors concluded that approximately one-third of anesthesiologists incorporate chronic pain in their practices. Trigger point [TrP] injections were the second most commonly practiced intervention [70 percent] after epidural steroid injections [82 percent]. Stellate ganglion blocks, occipital nerve blocks, and lumbar sympathetic blocks took third through fifth place with 61 percent, 60 percent, and 50 percent, respectively. The authors discuss every intervention used by anesthesiologists, not only in the results section, but again in the discussion section of this paper. However, TrP injections are only mentioned in a table and in the abstract. Although TrP injections constituted the second most commonly used procedure, the authors apparently did not feel that they needed to include a description of the indications of TrP injections, the injection techniques, etc., which makes one wonder . . . . . . [JD]

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