

In the past few years physical therapy has been more frequently prescribed for the management of various pelvic pain syndromes. The various pelvic pain syndromes that can benefit significantly from physical therapy approaches include vulvodynia, vulvar vestibulitis, dyspareunia, vaginismus, interstitial cystitis, urethral syndrome, frequency/urgency syndrome, pelvic floor tension myalgia and chronic pelvic pain characterized by pain located in the left, right or bilateral lower abdominal quadrants.

There is no "cook book recipe" approach in physical therapy to address the above noted conditions. Once a very thorough evaluation has been completed, the physical therapist has many treatment tools to choose from. One of those treatment tools could be myofascial manipulation.

Myofascial manipulation is the "forceful passive movement of the fascial elements through its restrictive directions, beginning with its most superficial layers and progressing into depth..."¹ The various myofascial approaches are arranged into three categories: autonomic or reflexive, mechanical and movement approaches.

Autonomic approaches attempt to impact change through the skin and superficial connective tissues. An autonomic approach as defined by Mackenzie is "that vital process which is concerned in the reception of a stimulus by one organ or tissue and its conduction to another organ, which on receiving a stimulus produces the effect".⁶ Sensory receptors in the skin and superficial fascia are stimulated by a myofascial technique. The route of the stimuli is through the afferent pathways into the spinal cord and then channeled through autonomic pathways effecting change in areas corresponding to the dermatonal zones being manipulated.⁸

In 1893, Sir Henry Head coined the term "referred pain" to describe visceral pain that is felt in regions of the body other than in the organ that has the pathology.⁴ The cutaneous representation of visceral pain as described by Head is known as Head's zones. Tenderness and hyperalgesia are noted in the tissues in the area of somatic referral. Trophic changes are also noted in the somatic area of referral. These trophic changes include changes in the blood flow, changes in the texture and structure of the skin, thickening of the subcutaneous tissue and muscle atrophy.

Ursula Wesselman recently published a study that revisited Sir Henry Head's work. She was specifically looking at the mechanisms of referred pain and the trophic changes in the female with pain in the reproductive tissues. Wesselman's hypothesis was that inflammation in the uterus would excite nerve endings in the uterus that could cause vascular responses in the area of referred pain. The proposed mechanism would be antidromic stimulation of nerves causing neurogenic plasma extravasation.⁹

In this study, seven female rats had a uterus pretreated with Evans blue dye. Ten minutes after the dye injection, a mustard oil solution was instilled into the uterus to induce a chemical inflammation of the uterus. Skin color changes were observed for one to two hours after the procedure. The rats that received mustard oil instillation into the uterus had blue dots appear in the cutaneous tissues over the thighs, abdomen, groin, perineum, lower back, and very proximal tail. The neurogenic plasma extravasation in the skin associated with uterine inflammation was in the areas where referred pain from the uterus would be expected according to clinical observations with patients with uterine pathology.

McMahon and Abel, in their study for an animal model of urinary bladder inflammation, found that hypersensitivity was noted in the tail, perineum, and caudal abdomen.⁷ Luc Jasmin presented a paper at the 1997 International Research Symposium on Interstitial Cystitis on the central nervous system involvement in neurogenic inflammatory cystitis. He injected a virus into a tail muscle of a rat that developed cystitis. They found that the cystitis was neurogenically mediated. Intact primary sensory and sympathetic afferents to the bladder were necessary for the cystitis to develop. An additional series of experiments within this study found that an inflammatory cystitis could be induced through a central nervous system disease. The presence of selective lesions within the dorsal lateral funiculi of the spinal cord could prevent the development of cystitis. Interruption of the peripheral sympathetic neurons from the central preganglionic afferents would also stop the development of cystitis.⁵

Connective tissue manipulation is primarily a superficial form of myofascial manipulation. The skin and subcutaneous connective tissues, with the noted trophic changes, are the tissues being treated with connective tissue manipulation.

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Elisabeth Dicke of Germany developed connective tissue manipulation in 1929. At that time it was referred to as connective tissue massage, which was the German translation of "bindegewebsmassage". Dicke suffered from a severe circulatory problem of her right leg. She was advised to consider amputation. In addition to the severe pain in her right leg, she also suffered from severe back pain. In an attempt to relieve her back pain, she began to rub the tissue above the sacrum and the iliac crest. She noted that his tissue felt thickened with areas of increased tension between the epidermis and dermis. Pulling strokes were used to try to relieve the tension. An extreme hypersensitivity was noted in the restricted areas. Normal stroking of the skin with the fingertips caused severe pain.

As she continued her stroking, the tension slowly relaxed. Her back pain decreased and a feeling of warmth returned in her circulatory compromised right leg. At this time Ms. Dicke also suffered from some serious organ based illnesses. The organs involved included the liver, kidneys, stomach, and heart. The conditions associated with these organs also benefited from Ms. Dicke's manual approach to her connective tissue. What Ms. Dicke found was that treatment of pathologically affected areas of the skin could resolve the pathological changes within the viscera. Certain skin areas belonged to certain viscera. After one year, she was able to return to full time work. She then took

her own personal experiences with her illnesses and developed an organized systematic treatment approach. This required years of research.

The effects of connective tissue manipulation as described by Dicke are:

- 1) Directly influences connective tissue locally altered by illness: scars, local blood supply,
- 2) Sets general circulation in order,
- 3) Mechanical mobilization and working of the subcutaneous tissue can influence the local and general water retention of the body by affecting the blood supply and also by freeing tissue material and thereby altering pH, and
- 4) Releases nerve impulses along quite specific paths, by means of reflexes which are locked into the central nervous system, it can set in motion reactions in quite distant organs.²

As previously stated there is no exact recipe for the management of the various pelvic pain syndromes. Connective tissue manipulation is an excellent starting point. It can be used to quiet the system or it can be used as an entry into deeper tissues that may benefit from other myofascial manipulation techniques.

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The International Pelvic Pain Society was formed to allow physicians, psychologists, nurses, physical therapists, and other professionals to coordinate, collect, and apply a growing body of information on chronic female pelvic pain. In doing this, we hope to be able to provide more relief and insure a more normal lifestyle for our patients. For membership information for healthcare professionals and patients, please contact us.

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