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Fascia: A missing link in our understanding of the pathology of fibromyalgia

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Abstract

Significant evidence exists for central sensitization in fibromyalgia, however the cause of this process in fibromyalgia—and how it relates to other known abnormalities in fibromyalgia—remains unclear. Central sensitization occurs when persistent nociceptive input leads to increased excitability in the dorsal horn neurons of the spinal cord. In this hyperexcited state, spinal cord neurons produce an enhanced responsiveness to noxious stimulation, and even to formerly innocuous stimulation. No definite evidence of muscle pathology in fibromyalgia has been found. However, there is some evidence for dysfunction of the intramuscular connective tissue, or fascia, in fibromyalgia. This paper proposes that inflammation of the fascia is the source of peripheral nociceptive input that leads to central sensitization in fibromyalgia. The fascial dysfunction is proposed to be due to inadequate growth hormone production and HPA axis dysfunction in fibromyalgia. Fascia is richly innervated, and the major cell of the fascia, the fibroblast, has been shown to secrete pro-inflammatory cytokines, particularly IL-6, in response to strain. Recent biopsy studies using immuno-histochemical staining techniques have found increased levels of collagen and inflammatory mediators in the connective tissue surrounding the muscle cells in fibromyalgia patients. The inflammation of the fascia is similar to that described in conditions such as plantar fasciitis and lateral epicondylitis, and may be better described as a dysfunctional healing response. This may explain why NSAIDs and oral steroids have not been found effective in fibromyalgia. Inflammation and dysfunction of the fascia may lead to central sensitization in fibromyalgia. If this hypothesis is confirmed, it could significantly expand treatment options to include manual therapies directed at the fascia such as Rolting and myofascial release, and direct further research on the peripheral pathology in fibromyalgia to the fascia.

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