Dynamic Chiropractic

BACK PAIN

Management of Osteoarthritis of the Spine: a Conservative Approach

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Cartilage in the spine is subject to degenerative changes with advancing age, just as it is elsewhere in the human body. This process involves the loss of cartilagenous resiliency with disintegration which varies in degree from one individual to another. Some factors which influence this degenerative process include, but are not limited to, concomitant constitutional conditions which may involve infection, menopause and metabolic disorder. The primary pathological change which takes place involves intradiscal dessication.

Clinicopathologically, the fibrocartilage of the intervertebral discs degenerates and is replaced by fibrous tissue components. This results in the loss of a shock absorbing effect between segmental pairs leading to increase pressures upon opposing surfaces of the vertebral bodies. This pressure/opposing surface factor results in a biodefensive increase in bone formation at the respective sites. Accordingly, spondylitic hypertrophy results in the formation of peripheral osteophytes which may totally bridge the intersegmental space and become united forming an ankylotic juncture. Due to the increased pressure/stresses on apophyseal joints, the articular cartilage of the facets is gradually denuded. Also, the apophyseal joint interval is narrowed with bony surfaces becoming sclerosed and irregular. These biomechanical changes result in articular process displacement and subluxation with overlap. As a result, neurothlipsis takes place with encroachment upon the nerve root which exits at that respective level. Rheumatoid (atrophic) arthritis may coexist with this osteoarthritic process and means that the atrophic changes have been reduced in speed of progress in the presence of osteoarthritic pathology, although it may still be active. Since these degenerative changes affect the annular ligaments, these individuals have a diathesis to disc protrusion with the consequence of need for differentiation of radiculoneuralgia of foraminal encroachment.

Pain in this clinicopathological circumstances may be a product of sprain, acute synovitis of the apophyseal joints, radiculitis, discal rupture, and bilateral spinal muscle spasm. Occupational demands which include the carrying of excessively heavy loads with frequent and repeated bending and lifting predispose to deterioration of the joints in the lumbar spine. Also, hypertrophic arthritis is an inevitable consequence of poor postural habits involving adverse biomechanics.

Symptoms typical of degenerative arthritis involve pain and stiffness when resting which are reduced in intensity upon becoming physically active. This physical activity must be performed in moderation because excessive bending and lifting tend to exacerbate the symptoms, as does cold, damp weather. When there is referred pain it tends to indicate the presence of nerve root pain and may include muscle spasm and paresthesias with chest and abdominal pain which may simulate visceral disease. The entire spine may be flattened and stiff with limited motion, especially in the lumbar region, where forward bending may be performed primarily by hip motion. Radiographic findings present with loss of articular cartilage from the facets posteriorly and fibrocartilage from the disc anteriorly with secondary bony hypertrophy of the articular cortex.

Maintenance of muscle power, within physiological limits, appears to be the key to retarding

degeneration of the spine. A conservative therapeutic regimen in degenerative arthritis includes relief of pain, increased mobility of the spine, with strengthening of the paraspinal musculature. Bed rest includes the use of a firm mattress and may be improved by placing a board between the mattress and box springs to reduce the lumbar lordosis and relieve tension on the articular ligaments. Moist heat may be applied as hot infrared packs, either hydrocollator packs or silicone gel packs, for 15 to 20 minutes, b.i.d., or p.r.n. for pain and/or local spasm. Erythema ab igne must be avoided and the patient must not be allowed to place the heat source under the weight of the body part to avoid capillary compression. Interferential current therapy may be used to reduce pain level and to enhance interstitial fluid transfer serving as a form of massage. Recommended parameters include a 120 Hz beat frequency, with a low grade surging effect if desired, for about 15 to 20 minutes per application, b.i.d., or p.r.n. for pain and/or reduction of edema. Discontinue IFC if the patient finds it intolerable due to sensitivity. Traction may be applied to the cervical, or lumbar, spine and may be used concomitantly. Cervical traction should be applied at an angle of 20 to 30 degrees anterior to the angle of pull in order to enhance IVF patency. Traction may be applied p.r.n. to assist with pain and to enhance mobility. Therapeutic exercise is advisable as soon as acute pain has been controlled, to begin strengthening paraspinal muscles. These exercises must be initiated on a gradual basis beginning with passive effort and gradually building to active exercise without approaching fatigue.

Treatment of spinal degenerative arthritis is ameliorative, rather than curative.

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