Case Study

The use of regenerative injection therapy and manual therapy in a client with lumbar hypermobility that was non-responsive to conservative and surgical intervention

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Persistent chronic low back pain is an escalating public health problem that currently affects 20-30% of Canadians. In 1996-1997 the National Population Health Survey estimated that chronic pain cost the economy approximately $14,744 per person affected per year. The 1998 report on the Economic Burden of Illness in Canada determined that indirect costs, such as long-term disability payments were highest for musculoskeletal disorders, such as arthritis and chronic back pain[1].

Alternative treatments for chronic low back pain include a wide variety of therapies. One such therapy is called Regenerative Injection Therapy (RIT), which can be used in conjunction with Manual Therapy. RIT describes a procedure for strengthening lax ligaments by injecting proliferating agents such as dextrose, glycerin or phenol directly into torn or stretched ligaments or into joints to create new healthy ligament with increased tensile strength. The theory is that RIT is a chemomodulation of collagen through repetitive stimulation of the inflammatory and proliferative phases of tissue regeneration and repair[2]. Some postulate that the painful hypermobile joints are temporarily stabilized by the inflammatory response giving the proliferants a better environment for regeneration and repair of affected ligaments and tendons. In animal studies RIT has been observed to increase the size of tendons and ligaments by as much as 40% and increase their tensile strength by as much as 200%[3].

While the increase in popularity of RIT is apparent in a recent critical review of the literature by Dagenais et al (2005), three of five randomized clinical trials reported minimal improvement while two showed more positive results from RIT[4]. The authors concluded that future studies should replicate treatment protocols that are common in the clinical setting, such as RIT used concurrently with spinal manipulation therapy or exercise. A team approach is recommended, utilizing a physician and a manual therapist to provide coordinated care to clients undergoing RIT. For example, both clinicians would work together to identify the area of most laxity in the spine to ensure the accuracy of the injection site. The case study that follows highlights key clinical findings, treatment and results to illustrate the possible benefits of RIT with manual therapy.

Case Presentation

Past History

The client was a 48-year-old female electrician who worked in a factory and suffered with chronic low back pain for approximately 10 years. She did not recall a specific incident that preceded her initial complaints of pain; but she did recall a motorcycle accident and a canoe trip with a heavy backpack 24 and 6 months prior to the onset of pain, respectively. Initially pain radiated down her right leg as far as the calf. Within a year this was accompanied with numbness and radicular pain throughout the L5 distribution. After living with chronic complaints of pain for four years, having difficulty with working without pain she sought treatment from an experienced Manual Therapist. Over a period of time, treatment approaches included strengthening and stabilization exercises for the core pelvic and hip muscles, taping, using a lumbar corset and extension exercises, all of which provided short-term relief.

Five years after the initial flare-up the client was referred for a CT scan that revealed L3-4 disc bulging with mild thecal sac impression anteriorly and L4-5 degenerative disc disease with generalized disc bulging. There was anterior and bilateral thecal sac impression, moderate spinal stenosis at and adjacent to the disc space level and mild facet arthropathy. Six years after the onset of pain, she underwent a L4-5 lumbar decompression. Similar to the previous conservative treatment, this gave short-term relief of her low back pain (for three months) but the right leg pain and numbness persisted, especially with sitting. She returned to modified work duties including a shortened work week with Wednesday off to recuperate. Follow-up MRI six months after the surgery revealed a large central right paracentral L4-5 disc herniation in conjunction with disc desiccation. As well, the disc appeared to come into contact with both exiting nerve roots, more on the right side than the left side.

Current History

When seen initially by the author (BP), several attempts were made to decompress the lumbar spine and encourage a more neutral spinal position during func-