Prolotherapy for Lower Back Pain

Many treatments have been proposed for lower back pain. Exercise and multidisciplinary rehabilitation programmes are the best known effective treatments for low back pain. There is little evidence that non-specific treatments work.

Diagnosis is the key
Close to 85% of patients with low back pain do not have a clear diagnosis. Therefore, it is important to identify the cause or the mechanism of the pain before a specific treatment can be proposed. When a treatment modality is non-specific, its chances of success are diminished.

What is Prolotherapy
Prolotherapy is the injection of a concentrated solution to produce a proliferation or growth of collagen, which is the principal component of ligaments.

Biological Effects
The proliferant solution works by starting a cascade of biological events which can be fairly accurately summarised as causing the release of pro-collagen growth factor (PGF) which brings in cells into the injection area, principally fibroblasts, and it is the fibroblasts which secrete collagen, which is the necessary fibrous tissue. This is a biological process and takes approximately six to eight weeks. This explains why people who have prolotherapy injections do not feel better immediately.

Why would prolotherapy be indicated?
If ligaments around a joint have been damaged by trauma or injury, prolotherapy may assist collagen growth. At present the joints eligible for treatment through Orthosports are the sacroiliac joint, the pubic symphysis, and the costo-transverse joints.

Prolotherapy in the pelvis
The joints of the pelvis, the sacroiliac joints and the pubic symphysis, are inherently stable joints. That means that, normally, the ligament structure and muscles surrounding the joints support the pelvis so that very little movement occurs, even under large loads such as walking or running.

During late pregnancy and labour, the amount of movement occurring at the sacroiliac joints and pubic symphysis will increase due to the effects of hormones such as relaxin. Under normal circumstances, however, movement will return to normal and the ligaments will become firm again within a short time of giving birth.

Pain originating from the pelvic joints, ligaments, and muscles, can be debilitating, and can make it difficult to sit, walk, stand, and even sleep. In most instances, pelvic pain and sacroiliac pain can be successfully treated with manual therapy and specific exercise rehabilitation. Occasionally, the force of the injury (for example due to a nasty fall or motor vehicle accident) may be sufficient to strain the pubic or sacroiliac ligaments.

The majority of ligament strains also heal with time, and with appropriate treatment, however in a small percentage of people, the collagen within the ligament remains damaged, and results in ligament laxity. This affects the ability of the pelvis to maintain its stable joint alignment so that weight can be transmitted from the upper body down onto the legs. It is this small group of patients who have increased laxity of the pelvic ligaments that have been shown to respond to prolotherapy (Dorman et al, 1995), when the injection is given under CT Scan guidance (ensures that the proliferant is placed correctly, and where it will have the best effect).
The Sydney Prolotherapy Trial
A prolotherapy trial has been conducted in Sydney for the past three years under the guidance of the Low Back Interest Group (LBIG Australia):
Dr. Mel Cusi, MB BS, FACSP, Cert Sports Med (RACGP), FFSEM(UK), Sports Physician, Conjoint Lecturer, UNSW
Dr Jeni Saunders, MB BS, FACSP, CIME, Sports Physician, Visiting Fellow, UNSW
Barbara Hungerford, PhD, B App Sci (Physio), Consultant Physiotherapist
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The preliminary results of the trial will be presented later this year (2007) at the VI World Congress of Low Back & Pelvic Pain in Barcelona (Spain)

Am I a candidate for prolotherapy?
At present, any patients seeking prolotherapy must undergo a complete examination from both a specific sports physician (Dr Mel Cusi) and a nominated physiotherapist in Sydney. They will determine whether there is ligament damage that can improve with prolotherapy injections.

All candidates for prolotherapy into either the sacroiliac or pubic ligaments must undergo a 3 month trial of specific lumbo-pelvic stability exercises before being accepted into the program. This is because the prescribed exercises improve muscle activation around the lumbar spine and pelvis, and in many cases these exercises alone will improve lumbo-pelvic stability so that the prolotherapy is not needed.

PROLOTHERAPY IS NOT A FORM OF PAIN RELIEF.
It may improve pain over time because the ligament structure gets stronger and this improves the ability of the underlying joint to cope with forces placed onto it, for example, when walking. In fact, the injection may initially increase pain. The pain usually settles within 3 to 4 weeks. In order to maintain the effects of the injections, patients need to continue performing the lumbo-pelvic exercises, and this should also accelerate improvement.