

## Case Report

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# Case Study: An Integrative Approach to Back Pain



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## Introduction

Incidence of low back pain and its socioeconomic consequences has been the subject of many recent epidemiological studies. An estimated 80% suffer from back pain at some time in their lives, and 20% are suffering from the condition at any given time [1]. Despite sophisticated technology for diagnosis and treatment, back related pain syndromes continue to increase. Technical investigations have taken the place of clinical examination; although sensitive, they are not specific, often providing false-positive findings and confusing diagnosis. Clinical examination should be the basis for any type of treatment for back pain.

Symptoms include lumbago, characterized by sudden severe pain and twinges on movement. Backache, discomfort felt locally in the lower back and referred pain, specific to a dermatome possibly accompanied by paraesthesia and motor and/or sensory deficit. Other activity-related spinal disorders include capsuloligamentous and stenotic disorders. Non-activity-related disorders can be due to inflammation, osseous conditions, acquired defects, tumours, metabolic disorders and pain referred from the viscera.

Traditional examination prior to acupuncture treatment consists of a detailed history concerning the complete psychological and physiological individual, tongue and pulse diagnosis. Where western medicine aims to achieve a specific diagnosis by a process of elimination, Chinese medicine aims to see relationships between body events and thereby restore harmony and balance. Many western medical practitioners find the philosophic approach and terminology of Chinese medicine incomprehensible. Advice often concerns rest, exercise, nutrition and other life style changes. Western medical advice is often more specifically related to diagnosis.

As an acupuncture practitioner and physiotherapist working in a general hospital pain clinic, I find that one system does not preclude use of the other. A thorough clinical physical examination in addition to detailed history is a necessity, not just as a basis for treatment, but also for communication purposes,

facilitating understanding and cooperation of different medical professions.

## Research has Shown Effects of Acupuncture At Three Levels

Peripheral sites, where local effects in tissues surrounding the needle occur. Adenosine binds to nociceptive receptors on peripheral afferent nerves causing pain inhibition and vasodilation [2]. Experimental studies have demonstrated the possible involvement of calcium channels, a mechanism involved in peripheral opiate action [3].

Segmental effects occur in portions of the body supplied by common nerve pathways. Stimulation of muscle ergo-receptors send connections to the spinal cord segmentally stimulating sympathetic response. Clinical implications include short term segmental pain reduction in the musculo-skeletal system, skin and internal organs. Myelinated A $\beta$  fibres inhibit the firing of A $\sigma$  (acute pain) and C-fibres (chronic pain). High frequency electrical stimulation specifically stimulates A $\sigma$ -fibres and low frequency the C-fibres [4,5].

MRI mapping has demonstrated extra segmental effects during and after acupuncture [6,7] stimulating the release of pain modulating neurotransmitters including enkephalins, dynorphins and endorphins. Central nervous system stimulating acupuncture points are found in areas with a high concentration of nerve endings, or areas where peripheral nerves are easily stimulated. Alternating frequency electrical stimulation initiates a broader range of neurotransmitter release including serotonin.

## Case: Acupuncture Treatment Suggestion for Back Pain

**History:** A previously healthy 45 year old man complained of back pain. Pain in the lower back started after lifting a dish washer out of the car, when the patient woke up the next day the pain had spread down the leg to the mid thigh region (S1 dermatome).

Pain was worsened by sitting and static standing; relieved by walking and lying down.

## Clinical examination

Observations: Side-flexion deviation of the back away from the painful side.

Back movements: reduced and painful flexion and side flexion bilaterally.

Straight leg raise: Limited painful side.

Normal muscle strength, sensibility and reflexes in lower extremities

**TCM:** Tongue and pulse: normal

**Diagnosis:** Annular discogenic prolapse between L5 and S1, with radiating neuropathic pain.

**TCM:** Qi and blood stagnation in the bladder channel due to trauma

**Treatment:** With the aim of stimulating peripheral, segmental and central levels a suggestion for acupuncture treatment would be:

**Peripheral point:** Bl 60.

Segmental stimulation of the S1 dermatome using the relay method of stimulation, beginning distally on the bladder channel on the posterior aspect of the thigh where the pain stops. Needles are inserted in a proximal direction and stimulated so that the deqi sensation is propagated proximally towards the next point, the intention being to centralize pain. Points: Bl37, 36 & 54.

Also needling of bilateral Huatuoji points located 0.5 cun lateral to the lower borders of the spinous processes, at L4,5 and S1 with electrical alternating frequency stimulation.

Extra segmental needling of Li4 & Si3 with alternating frequency electrical stimulation.

Points according to any TCM syndrome identified. Trauma (Qi and blood stagnation), bladder channel: Bl 58 (indicated when movement is restricted).

**Advice:** Intermittent McKenzie extension exercises to pump the contents of the damaged disc anteriorly. Maintenance of the lumbar lordosis in all positions, including use of the lumbar roll in sitting. Regular short walks interspersed with short periods of rest in supine or prone positions.

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