

90/90 TRACTION TREATMENT FOR ACUTE LUMBOSACRAL STRAIN: A selected case study

YOSHIDA ORTHOPEDIC HOSPITAL
Dr. Tohru Yoshida
Dr. Nobuo Asano
Dr. Hitoshi Idota

NATIONAL SANITARIUM EAST NAGOYA HOSPITAL
Dr. Tsutomu Kasai

Abstract

Between June and December, 1989, 28 patients were diagnosed and treated for lumbosacral strain. Patients exhibited one or more symptoms of acute low back pain. Patients were treated with 90/90 Backtrac^R for 10 to 15 minutes, with an average of 5.7 treatments. X-rays were taken before and after treatment. Healing time was defined as the last treatment session. Within five days, 48 percent made their last visit, and another 19 percent completed treatment within ten days. A total of 67 percent were healed within ten days. Drs. Yoshida et al determined that 90/90 Backtrac is an effective treatment for strained back. Use of 90/90 Backtrac improves lumbar vertebrae bending gradients and pelvic inclination gradients. They suggest effectiveness of 90/90 Backtrac is due to reorganized slippage of lumbar vertebral joints.

INTRODUCTION

In the Japanese medical system, low back pain patients are typically admitted to the hospital. Length of stay may be as long as two weeks. However, with the advent of new conservative treatment measures hospital patient days are declining. One of these new treatment methods is LOSSING^R 90/90 Backtrac^R.

The 90/90 supine distraction treatment equipment was invented by Cottrell, an American orthopaedic surgeon.¹ In Japan, Hanai and others use this equipment to treat the lumbar vertebral slipped disk. They reported very good results at the 68th society of Central Japan Orthopaedic Surgery and Traumatology.^{2,3} With this equipment, the patient lies supine with knee and hip joints bent 90 degrees. By applying a pelvic tilt belt to the pelvic area and attaching the belt to a rope, the patient will be in distraction either vertically or diagonally to slightly lift pelvis. This position is maintained for 10 to 15 minutes (Figure 1).

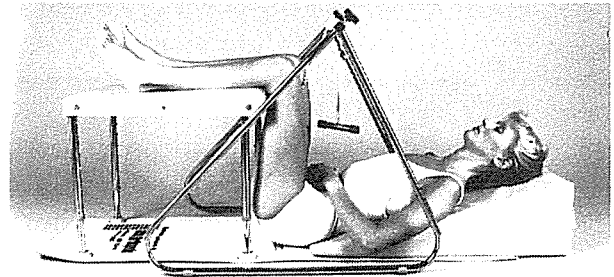


Figure 1: 90/90 Backtrac^R

By using this method, forward bending of the lumbar vertebrae is reduced or removed and the back of lumbar vertebrae is positioned correctly.

MATERIAL AND METHODS

Lumbosacral strain was diagnosed in eight percent (28) of all new patients (340) admitted to the hospital between June and December, 1989.

Clinical symptoms of lumbosacral strain may present as follows:^{4,5,6,7}

- (1) A simple movement such as getting out of a car causes a popping feeling in the small of the back

- (2) Tension or a dull feeling in the back starting gradually over several days
- (3) Restricted movement in the lumbar vertebrae, especially an inability to stretch
- (4) Deformation of the lumbar vertebrae reducing ability to bend forward
- (5) Movements to stand up or move around become difficult
- (6) Impossibility or difficulty in unconscious lower limb stretching
- (7) Low back pain from straight leg raising
- (8) Difficult or physiologically impossible forward bending
- (9) X-ray observations show intervertebral side bending deformation and pelvic inclination.

These twenty-eight patients were treated as in-patients with 90/90 supine distraction. Each one was given an x-ray examination before the first 90/90 treatment and after the last 90/90 treatment. Hospital stays ranged from one to ten days. The average hospital stay after injury was 2.6 days. The average number of 90/90 degree distraction treatments was 5.7 (1-37).

Healing time was defined as the last visitation to the hospital. Within five days 48 percent made their last visit, and another 19 percent stopped coming between six and ten days. A total of 67 percent were healed within ten days.

This treatment for strained back was investigated by using 28 x-ray examinations before and after this treatment.

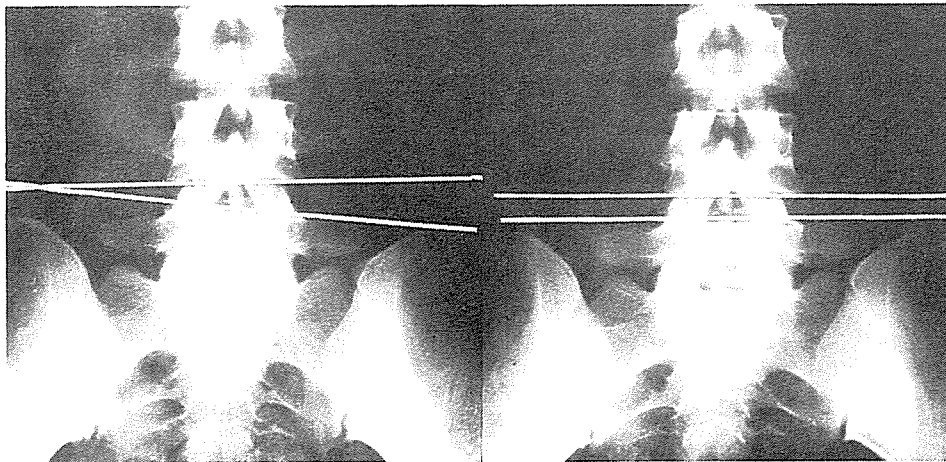


Figure 2: Supine before 90/90

After 15 minutes of 90/90

Example 1: 22 year-old female patient. Low back pain started with an acute popping feeling in the small of the back two days before the hospital visit. Stretching the lumbar vertebrae and unconscious stretching of the lower limbs became impossible. Side bending

deformation L4-5 before distraction treatment was gradient 3 on an X-ray done with the patient supine. Fifteen minutes of 90/90 degree distraction treatment improved the side bending to gradient 2, and stretching the lumbar vertebrae become possible (Figure 2).

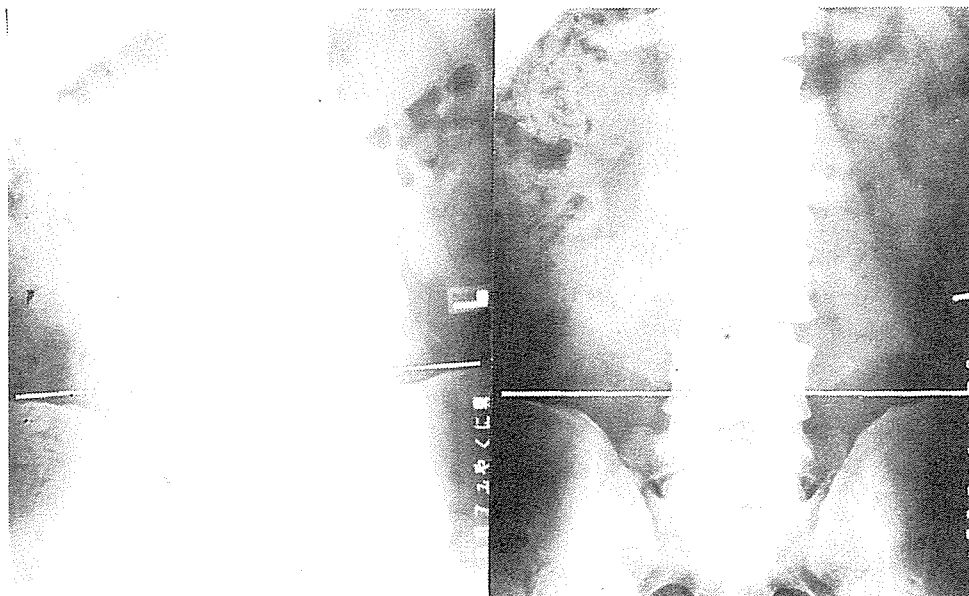


Figure 3: Supine before 90/90 After 15 minutes of 90/90

Example 2: 36 year-old male patient. Heavy lifting one week before the hospital visit caused the lumbosacral strain. The pain increased three days before the visit. Forward bending of the lumbar vertebrae was possible, but stretching was not possible at all. After fifteen minutes of 90/90 degree distraction treatment, stretching became possible. The gradient of the pelvis before distraction was 3 and became 2 after treatment (Figure 3).

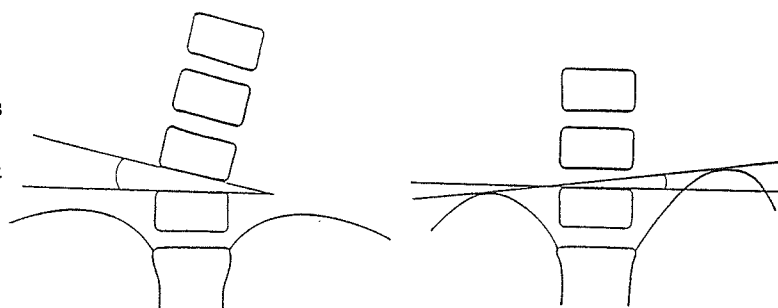


Figure 4:

Figure 3 shows before and after traction X-rays with patient lying on his back. Note the gradients of the lumbar vertebrae and pelvis. Parallel lines along the top and bottom intervertebrals were drawn and the angle was measured as a vertebral bending gradient. The angle between another parallel line along the top of the fifth lumbar vertebra and a line between the top of both sides of the ala ossis ilium was measured as a vertebral bending gradient (Figure 4).

In vertebrae where the bending gradient was between L4 and L5, just one treatment improved the bending gradient in most cases.

The results were the same in pelvic inclination (Figure 5).

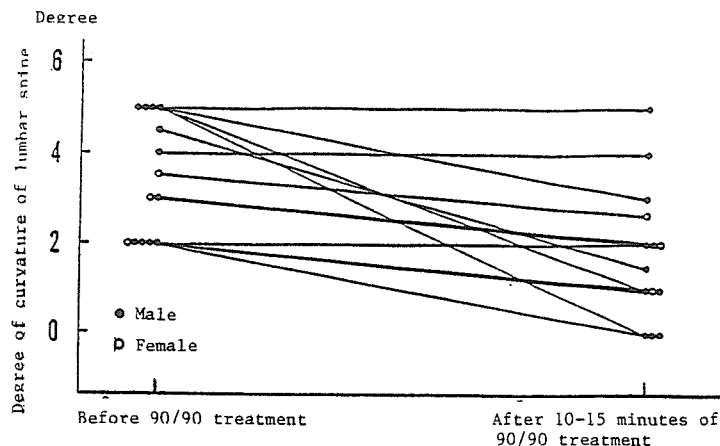


Figure 5: Changes in degree of curvature (L4-L5) with 90/90 treatment

DISCUSSION

In the past, the treatment for strained back consisted of rest and anti-inflammatory medication. In fact, many cases recover this way. Manipulation treatment for strained back has a very old history and is still done by chiropractors, also with many successful cases. Manipulation treatment consists of rotating the lumbar vertebrae and forcing them to bend forward, which reduced forward curvature of the lumbar vertebrae (Figure 6).

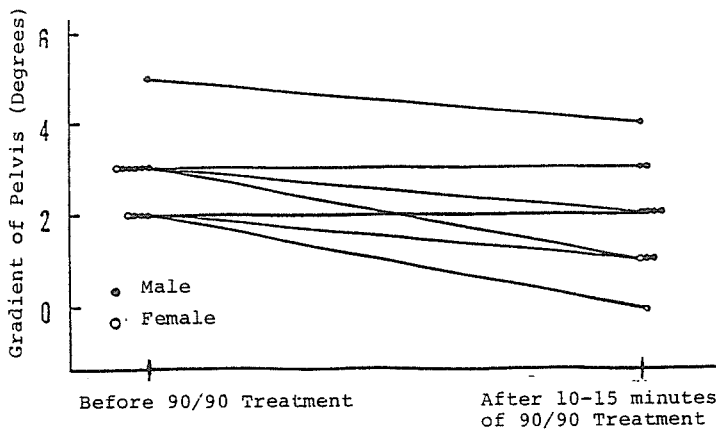


Figure 6: Changes in gradient of pelvis with 90/90 Backtrac supine x-rays

While maintaining a position with the back straight, 90/90 degree distraction helps open rear intervertebral joints gradually, and it seems this reforms slippage. Traditionally, limited stretching of lumbar vertebrae has been a characteristic of a strained back, and the rear joints were considered a problem. Therefore, using 90/90 degree distraction treatment for a strained back is considered reasonable.

90/90 Backtrac is manufactured by:

VMG Medical, Inc.
 542 Walnut Hills Road
 Staunton, VA 24401
 (800) 868-1999

SUMMARY:

1. Applying 90/90 degree distraction treatment to a strained back (acute lumbosacral strain) is effective.
2. Improvement of lumbar vertebrae bending gradient and pelvic inclination gradient (between L5 and S1) were seen on X-ray examinations.
3. 90/90 distraction is considered to work by reorganizing slippage of lumbar vertebrae joints.
4. Strained back is considered an independent ailment starting from the lumbar vertebrae joints.

REFERENCES

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