The Influence of Self Pelvic Traction on Trunk Flexibility and Spinal Alignment

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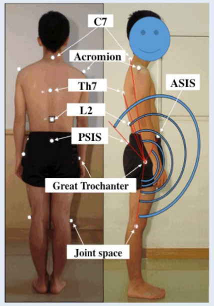
Introduction

Low back pain is one of the most common disorder regardless of race, sex, age, and a pelvic traction is one of its popular treatments.
In recent years, a pelvic traction device to be carried out by himself has been developed, which is called Self Pelvic Traction.
The purpose of this study is to verify the effect of the Self Pelvic Traction.

Materials and Methods

Alignment (thoracic spine angle, lumbar vertebra angle, sacral tilt angle) of standing position and trunk flexion in standing position, and Finger Floor Distance (FFD) were measured before and after Self Pelvic Traction(Photon manufactured) and conventional electric traction, and compared them.
Both traction were performed in supine position with hip 90deg flexion and knee 90deg flextion. Traction load of the conventional electric traction was controlled 1/3 of body weight, and of the Self Pelvic Traction was performed with self manual maximum load.
Alignment was measured with image measurement and spinal measurement device-Spinal Mouse.

Landmark and Measured Angle



Self Pelvic Traction

Spinal Mouse

Result

The FFD and the sacral tilt angle increased in both Self Pelvic Traction and conventional electric traction. Although the pelvic tilt (sacral tilt angle) in the standing position increased after the conventional electric traction, decreased after the Self Pelvic Traction. The FFD and the sacral tilt angle increased in both Self Pelvic Traction and conventional electric traction. Although the pelvic tilt (sacral tilt angle) in the standing position increased after the conventional electric traction, decreased after the Self Pelvic Traction

FFD

	Pre(cm)	Post(cm)	Change(cm)	Rate(%)
Self Pelvic Traction	1.4 ± 9.4 *	4.0 ± 9.2	2.7	20
Electric Traction	2.1 ± 9.7 *	5.4 ± 9.8	3.8	15

(* between Pre and Post in each row; * between Self Pelvic Traction and Electric Traction Post)

Alignment

	Self Pelvic Traction		Electric Traction	
	Pre	Post	Pre	Post
Femur-C7	189.9 ± 7.1	189.4 ± 7.2	187.3 ± 7.0	185.7 ± 5.5
Femur-Th7	208.6 ± 7.4 *	200.6 ± 7.0	196.3 ± 4.5 *	196.7 ± 7.7
Femur-L2	208.6 ± 9.2	206.9 ± 9.3	202.3 ± 5.1	202.1 ± 9.1

Alignment

	Self Pelvic Traction		Electric Traction	
	Pre	Post	Pre	Post
sacral tilt angle	22.2 ± 7.2	21.4 ± 6.1	20.4 ± 6.2 *	23.5 ± 7.5
Thoracic angle	37.3 ± 8.8	36.8 ± 7.3	38.7 ± 8.8	36.2 ± 7.2
Lunber angle	-27.7 ± 8.5	-27.1 ± 7.3	-27.7 ± 9.2	-29.6 ± 9.3

Discussion

From the results of this study, it was suggested that the Self Pelvic Traction, similar to conventional electric traction, showed effects on spinal alignment and trunk mobility.
The self pelvic traction might be a one of the promising method for self-care of back condition and prevent a low back pain.
Although we performed static analysis in this study, but it seems that dynamic analysis and field research are necessary from now on.