The wall-ball exercise

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Introduction

For many years I have recommended to patients rolling the feet over a child's sponge rubber ball (the size of a tennis ball) for relief of certain foot conditions.

It occured to me that if one could use the ball to massage the hypertonic muscles of the back some degree of relief might be obtained. So I took the ball and stood with my back to the wall, placed the ball behind my back and pressed. Making a side to side movement I was able to roll the ball over the muscles. To my surprise the tender trigger points and the ropey muscle fibers stood out. By repeatedly going over the tender spots they were changed from a sharp exquisite pain to a dull ache.

With the use of the ball a patient could find the tender areas and by rolling repeatedly over those places could exert considerable pressure with very little effort. Even maintaining pressure on a trigger point for a minute or more was almost effortless.

In this pilot study, over 18 months, 135 patients had been involved. Most had been exercising with the ball at least once a day and some retired patients had been using it 3 times daily. The male:female ratio was 48:26 respectively. Ages ranged as follows:

21 to 35 years	15
35 to 50 years	22
50 to 65 years	46
65 to 86 years	52

The patients selected had chronic hypertonicity in the back musculature and joint pain. Some had a marked degree of hyperirritability, several elderly had arthritic joints and one patient had acute lumbo-sacral pain.

Instructions

The patients were instructed to stand back to the wall, about 12 inches away, place the ball behind the back and press against it. By moving the body over the ball they located the tender spots and were told to roll over these places repeatedly at least 6 or 8 times and then move the ball to another location. They were asked to exercise with it in the evening for at least 10 minutes (longer if they wished) and again in the morning if possible. Retired patients were asked to do it 3 times a day and it was suggested to the elderly to do their's in installments if their legs got tired. After exercising for 3 weeks they were asked to report whether they felt any changes or not and if so what those changes were. No suggestions were made as to what they might expect in results. The ball used was a child's firm sponge rubber ball the size of a tennis ball.

Observations

Reporting results, 75 stated that they had considerable relief, 27 some relief from their symptoms, 8 none or undecided and 25 unreported.

1 **Muscles**: Most patients reported that they felt a marked relaxation in their muscles which tended to stay more relaxed. To my palpation the muscles were less hypertonic, smoother and not as tender.

2 **Nervous System**: Many patients said that their nerves were not as irritable and under stress they were calmer. Three patients stated that the "Ball Exercise" helped them through an emotionally stressful period. None of them had had adjustments through that period.

3 **G.I. Tract**: Patients with G.I. symptoms reported improvements in their symptoms such as improved digestion, less abdominal gas and less constipation.

4 **Arthritic Joints**: Most of these patients experienced less swelling and stiffness, especially in the morning and some reported more strength and range of movement in certain joints.

5 **Insomnia**: Every patient who had difficulty sleeping stated that they slept through the night, their sleep was deeper and they woke up in the morning feeling refreshed.

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THE TECHNIQUE

BACK, GLUTEAL REGION AND NECK

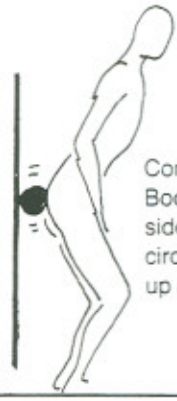
Stand out from the wall about 12", back to the wall, place ball behind upper back and press. With pressure on the ball move the body horizontally or up and down so that the ball rolls over the muscles. Locate tender spots and ropey muscle fibers and go back and forth in sweeps of 4" to 6". Repeat at least 6 or 8 times or until sharp pain becomes dull. Very effective on rhomboids, levator scapulae, infraspinatus and trapezius.

Body moves up and down by flexing the knees. Sweep of ball about 4" – 6". Place ball lower and repeat.

Horizontal moves
1. Sub occipital
2. Upper thoracic
3. Infra and inter-scapular
4. Lower thoracic
5. @ L.S. level
6. Across buttock – right then left

Vertical moves
1. Cervical – Ball on mid-line over spinouses
2. Thoracic and lumbars ball along side spinous

Note: Ball is placed next to moulding of door frame



Contact on buttocks
Body moves side to side, circular, or up and down

Up and down

and circular move on buttock

OVER CREST OF ILIUM AND RIB CAGE UNDER AXILLA

Standing sideways to the wall, place ball over crest of ilium, press it and slowly move body back and forth. Effective for abdominal obliques.

Then in same position, place arm over head, put ball against rib cage, press and move body horizontally. Effective for serratus anterior.

Body moves –
up and down
and
side to side

Sketches by S. Westwood

THORAX AND ABDOMEN

Facing wall, head turned to one side, the ball is placed opposite the upper chest, a side to side movement is done rolling the ball over the rib cage. Repeat 6 or 8 times. Do one side of chest at a time. It is done about 3 levels. Female patients are advised to avoid breast tissue.

The abdomen is also done starting at the lowest level and working up one level at a time. In this area the entire width of the abdomen should be covered in the back and forth sweep. In doing this area gas may be expelled by mouth and rectum. This area may be contra-indicated in certain G.I. conditions.

3 positions on chest
1. Upper
2. Mid (males only)
3. Lower

Body moves side to side

3 positions on abdomen
1. Upper
2. Mid
3. Lower

Body moves side to side

Discussion

The mechanics of the exercise is really a self massage of the muscles, ligaments and joints.

It could be reasonably theorized that the results in pain control was accomplished by an increase in the endorphin level of the cerebral-spinal fluid as shown in Vernon's survey.[1]

Or, the pain control might be explained by the gate control theory as proposed by Melzak and Melinkoff.[2]

From observed and reported results we might assume that the "Wall-Ball" exercise has some influence on the activity of the sympathetic nervous system. A study reported in C.R.A.C. reads as follows, "A study of the effects of back massage on the autonomic activities of the body is described . . . the results indicate an increase in sympathetic activity in most indices".[3]

With respect to pain control, Wyke postulates "Massage, compression, vibration and stretching of tissue are all procedures that stimulate the mechanoreceptors embedded therein. I therefore suggest that it is primarily through controlled stimulation of the peripheral tissue mechanoreceptors by the application of static and phasic forces that manipulative therapists are able to produce relief of pain."[4] Travel and Simons state, "Active trigger points of the abdominal muscles, especially the rectus abdominis may cause a lax distended abdomen with excessive flatulence."[5] Good reported, "A myalgic condition of the abdominal musculature (T.P.s) often caused functional disturbance of an abdominal viscus."[6]

The improvement in some arthritic joints might be explained by Hilton's Law which states, "A nerve trunk which supplies a joint also supplies the muscles of the joint and the skin over the insertions of such muscles."

It is hoped that many chiropractors would consider the wall ball exercise for the benefit of their patients.

References

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4 Wyke BD. Articular neurology and manipulative therapy. In: Glascon EF, Twomey LT, Scull ER, Kleynhans AM, Idczak RM. eds. Aspects of manipulative therapy. New York: Churchill Livingstone, 1985; 72–77.

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