Reduced Chest Expansion in Primary Fibromyalgia Syndrome

Salih Ozgocmen and Ozge Ardicoglu

Fibromyalgia syndrome (FMS) is characterized by diffuse widespread musculoskeletal pain, aching and stiffness in the neck, mid and lower back, chest, arms, and legs. A number of associated conditions includes disturbed sleep, subjective soft tissue swelling, fatigue, headache and irritable bowel syndrome.

Chest pain may originate from many sources; and the musculoskeletal structures of the thoracic wall and the neck are relatively common sources of chest pain. Pain arising from these structures is often mistaken as angina pectoris, pleurisy or other serious disorders. FMS is also a common cause of chest wall pain. The palpation of musculoskeletal structures, movements and breathing may exacerbate the chest pain in fibromyalgic patients. As well, pain may limit the expansion of the chest wall. The chest expansion, which was not mentioned in prior studies related to FMS, in 24 women (aged 18 – 60, mean 38.9 ± 12.8) who met the 1990 ACR criteria for the classification of fibromyalgia was investigated and compared to 22 healthy age-matched women (aged 17 – 60, mean 35.0 ± 9.7). Patients were excluded who had been previously diagnosed, who had been taking treatments of analgesics or anti-depressants, or who had a history of respiratory or cardiac illness. All subjects had normal EKG, chest and dorsolumbar radiograms with normal ESR, blood count, and blood chemistry. A physical examination was made of all subjects, including inspection of thoracic scoliosis, kyphosis, pectus excavatum or carinatum, cervical spine, shoulder movements, and palpation of sternomastoid, trapezius, and pectoralis major muscles. The chest expansion at the level of the xiphoid was measured three times in the standing position during maximum expiration and inspiration, and the highest difference was accepted as chest expansion in cm.

The mean measured chest expansion was 2.9 ± 0.9 cm (1.5 – 5 cm) in the FMS group and 4.9 ± 0.7 cm (3.5 – 7 cm) in the control group. Patients with FMS had a lower chest expansion, which was statistically significant compared to the healthy controls (p < 0.0001). A positive correlation between age and chest expansion was also obtained in both groups. All of the patients with FMS complained of pain on their chest wall, which made it difficult to reach the end range especially during forced inspiration.

Lurie and colleagues have documented respiratory functions in primary fibromyalgia syndrome. The authors have investigated whether maximum expiratory and inspiratory pressures were low and they have suggested that it might indicate respiratory muscle dysfunction.

This has a conformity with the findings of other studies, which suggests that patients with fibromyalgia display lower voluntary grip strength.

Lund and colleagues have evaluated oxygenation of the subcutaneous tissue of trigger points in the trapezius and brachioradial muscles of patients with primary fibromyalgia syndrome. They concluded that muscle oxygenation, at least in the trigger point area of the muscle, was abnormal or low. Fibromyalgic patients are aerobically unfit and reluctant to exercise due to their symptoms. Reduced chest expansion in patients with FMS may be explained by the chest pain which causes limitation on chest movements, muscle weakness or altered aerobic fitness. The measurement of chest expansion may have the potential for obtaining information about pain, as well as pain threshold measurements from trigger points.

REFERENCES

5. Fam AG. Approach to Musculoskeletal chest wall pain.