THE RESULTS OF NON-OPERATIVE TREATMENT OF THORACOLUMBAR VERTEBRA FRACTURES

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Of the 159 patients with vertebrae compression fracture who have been treated non-operatively at orthopaedics and traumatology department in Haydarpaşa Numune Hospital between June 1988- December 1992 in Istanbul 32 patients (11 female, 21 male) have accepted our invitation. The average age were 36 years. The mean follow-up time was 48 months.

After staying in bed for 6 weeks, they have been allowed to walk with chairback or TLSO brace for 2 months.

Patients returned to their former jobs. 18 of them (56.26%) couldn't lift up heavy things, 7 of them (21.87%) couldn't walk long way and stay long time. The pain was evaluated according to Denis and 10 of them (31.25%) were in group P1, 7 of them (21.87%) were in group P2, 10 of them (31.25%) were in group P3, 4 of them (12,50%) were in group P4. No patients has restriction of motion.

All patients but three have compression less than 40% and anterior compression angle less than 30 degrees at the beginning and at the follow-up. 3 patients who have compression more than 40% had kyphosis later.

We have satisfaying results with non-operative treatment in patients with vertebrae compression fracture who have compression less than 40% and anterior compression angle less than 30 degres.

Key Words: *Non-operative treatment.*

Vertebrae fractures are one of the most common fractures besides other fractures because of traffic accidents and insufficient work security in our country.

In patients with vertebrae fractures the first problem to decide whether operative or non-operative treatment is best individual vertebrae fracture. Instability and neural deficit are two important criteria to take into account. The advantages of operative treatment are decompression and stabilization. Its especially important if patient has got neural deficit and unstabile fracture. Contrary to this if the fracture is stabile and patient has no neural deficit conservative treatment is another alternative. Investigators like Bedbrook, Frankel substantiated non-operative treatment (1, 2, 3, 6, 8). Their long term results are satisfying.

In this paper we discussed the results of patients who have stabile fractures according to Denis and has no neural deficit.

MATERIALS AND METHOD

Of 159 patients, 32 have been evaluated who have accepted our invitation applied to Haydarpaşa Numune Hospital between June 1988 - December 1992 (11 women, 21 men). The average age was 36.33 (between 15-55). The mean follow-up time is 48 months (ranged from 19 to 70 months). There were 4 fractures of thoracal spine, 21 fractures of thoracolumbar junction spine and 7 fractures of lumbar spine.

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We assessed the stability of fracture, neural deficit, etiology, affect of the fracture on daily life, work life, complications like late progressive kyphosis, neurologic deterioration, back pain, restriction of motion. We used Denis' criteria to evaluate the pain.

The indications are for conservative treatment are 1 column fracture according to Denis, no neurological deficit, compression less than 40%, Kyphosis less than 30 degrees. Although 3 patients had compression more than 40% they have not accepted operative treatment.

Bed rest maintained for average 6 weeks. At the end of this time who had thoracolumbar fracture total contact thoracolumbosacral orthosis, chair-back orthosis or spica cast is applied to. They weared this braces for average 2 months. Bending radiographs were taken at four weeks intervals for 6 months. Immobization are discontinued approximately at 2 months out of our control.

RESULTS

Etiology in 14 patients (43.75%) was falling do from the tree, in 6 patients (18.75%) was falling down from high place, in 8 patients (25%) was traffic accident. In 4 cases (12.5%) big goods and wall falled down over patients. All of the patients went on former jobs. 18 of the patients (56.25%) couldn't lift heavy things, 7 of the patients (21.87%) couldn't walk and stand up for a long time anymore.

According to Denis' pain criteria 10 patients (31.25%) were P1, 7 patients (21.87%) were P2, 10 patients (31.25%) were P3, 4 patients (12.50%) were P4, There were no restrictic motion.

There was no neurologic deterioration in our patients. In all patients except 3 initial compression and kyphosis angle respectively was less 40% and less than 30 degrees. In these had progression in kyphosis angle more than 10 degrees. In these patients as initial kyphosis angle were 17, 20, 22 degrees, at follow-up became 27, 37, 39 respectively. We found initial compression 60%, 64% and 77%. At follow-up these were 64%, 67% and 79% respectively. Angular changes were smaller in thoracic vertebra.

1 patient had degenerative changes who has biggest compression and Kyphosis. There was no radicular symptom but he has kyphosis like another two patients. They have back pain especially they stand up for 3 hours.

DISCUSSION

Compression fracture that is more stabile by comparison burst fracture is treated more often conservatively (1, 2, 3, 8). Occasionally it needs surgical intervention. Instability, late instability, amount of compression, neural deficit are important components to decide which treatment is more appropriate.

Compression fracture less than 40% compression, 30 degrees angulation tend to be stable (5). On the other hand the age and whether the posterior ligaments intact or not are very important. In case that compression more than 40%, initial kyphosis more than 30 degrees there is usually progreses and neural deficit can develope (8).

Surgical treatment in unstable fractures has got some disadventages like neurologic damage, failure of internal fixation, failure to decompress adquantly and nonunions (9, 10). The other disadvantage of surgical treatment especially in our country is the price of implant. On the other hand surgical treatment allow early mobilization, rigid spinal immobilization, prevent late deformity, decompress spinal canal (7, 9, 10, 11).

In our study group Kyphosis developed in 3 patients. Fractures were unstable in these patients according to Denis' criteria which we accepted in this study (4). Patients didn't accepted operation for different reasons. Daily life were effected in 2 of them and had back pain at the P4 according to Denis. The third one who is aged and retired patients has got P3 level back pain.

No patients has got neural deficit both early and late period. Only one of the patients has got degenerative changes. None of the 197 patients with compression fracture reported Denis also has got neurologic deficit. We assessed the reason of this because middle column is intact. But if there is posterior ligamentous disruptions, facet subluxion and late advenced kyphosis neurologic deficit can occur.

We realize that most of the patients doesn't follow strictly treatment suggestions. When patient feels good, he or she takes off the brace. In our study group only 4 patients weared the brace after 2 months. It is very important to convince the patients to use the brace.

All of the patients except one who is retired are employed. But all of them arranged their jobs not to lift heavy things.

In this retrospective study we saw that if compression less than 40%, initial kyphosis angle less than 30 degrees non-operative treatment is satisfaying. Proper conservative treatment can lead to fracture union without the risks of surgery.

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