

# THE SURGICAL TREATMENT OF SCHEUERMANN'S KYPHOSIS BY ALICI SPINAL INSTRUMENTATION.

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*Scheurmann's kyphosis is of deformity which is usually treated conservatively, The patients who have used the milwaukee brace have not been better for several reasons and those patients have received medical treatment at the Ege and Dokuz Eylul Universities during last year.*

*Those patients have been treated by Aha Spinal instrument.*

*The purpose of this study to find out the early results, using Aha Spinal instrument, in Scheurmann's kyphosis.*

**Key Words :** *Scheurmann's kyphosis, Alici instrument.*

The treatment of Scheurmann's kyphosis is usually conservative. Surgery may be considered in the severe cases of deformity and if the conservative treatments have failed.

The correction should be made by considering the patients age rigidity of deformity and by taking into consideration whether this correction of deformity should be made by only posterior approach or anterior and posterior fusion (1,8).

There is also mild scoliosis in the case of Scheurmann's kyphosis (4).

The surgical treatment of Scheurmann's kyphosis can be made not only by posterior fusion but also by using instrument (1,8).

The Most common instrument used in the surgical treatment of Scheurmann kyphosis is Harrington Compression rod (8).

In this paper the results of five cases of the correction and posterior fusion, that have been made Alici Spinal instruments during last year have been presented.

## MATERIALS AND METHODS

Five patients suffering from Scheurmann's kyphosis and have used but have not recovered by milwaukee brace have been seen at the outpatient department. Those patients have been treated by Alici spinal instruments. Their ages were between 15 and 19 years (mean 16.8 years). The treatments were carried at the clinics of orthopaedics and traumatology of Ege and Dokuz Eylul Universities. The maturation of the skeleton have been completed in two patients, but not the remaining three who were slim.

It has been observed that all of them have had stretched pectoral and Hamstring muscles. All of the patients have admitted with complaints about deformity and pain. According to "Cobb" method the degree of kyphosis were 52°-77° and the average kyphosis angle was 70.6°.

The localisation of the deformities were dorso-lomber in one patient and dorsal in the other four. The wedge angle degrees in the vertebrae were 8°-13° and the average was 12°.

None of the patients had neurological deficits. In one case there was 15° of dorso-lomber right scoliosis and in the other case there was 10° left dorsal scoliosis. The scoliosis was not observed in other cases. Since the milwaukee braces were not sufficiently successful, surgical treatment was indicated.

This surgical treatment has been performed by Alici Instruments and it has been done to correct deformity and posterior fusion. The grafts needed for posterior fusion were obtained from iliac bone.

Operative technique while the patients were living down in prone position under general anesthesia, exposure is obtained by incising from the columna vertebrae, and kyphosis have been explored.

The Alici Rods were bent in accordance with correction degree. Bending were made at every 0,5 cm and this bendings enables the mobility of the nuts on the rods. The curve of the rods were usually 30°, and this angle was convenient for the physiological kyphosis. The closed lamina hooks were placed on the rods which have been bent, the proximal and distal hooks were placed facing one another.

Initially, the proximal hooks were placed beginning from the third vertebra transverse process and then, the distal hooks were placed under laminae, beginning from the third vertebra, distal in the apex of curve.

The tightening of the hooks nearest to the apex, will enable partial Correction of the curve and there af-

ter could be easily placed, in other words the placing of the hooks will be from the following; cranial of the curve to the caudal, and this would help the correction gradually. After performing the same manipulations with the opposite side, the nuts were checked the last time and the system would be closed by means of a pair of transverse-binder placed at inferior and superior ends. Ant then, the fusion will be performed by the grafts taken from the iliac wings.

## RESULTS

Radiologically, the kyphosis angles and apical vertebrae wedge angles were measured at the post-operative period (within one or two weeks). Table 1. illustrates those findings.

Table 1. Clinical analysis : of the cases of Scheurmann's Kyphosis :

Number	Name	Age	Kyphosis level	Radiologic measures Apikal vertebral vedge angle			
				Pre-op	Post-op	Pre-op	Post-op
1	N.S.	19	Dorsal	52°	34°	8°	8°
2	S.T.	15	Dorso-lomber	62°	30°	18°	18°
3	M.B.	19	Dorsal	72°	40°	12°	12°
4	F.O.	16	Dorsal	90°	30°	13°	13°
5	S.C.	15	Dorsal	77°	33°	12°	12°

## DISCUSSION

The treatment has usually been performed by conservative methods in the scheurmann's kyphosis the reason of which has not been known.

At first, this deformity was tried to be corrected by using hyperextantion plaster-cas, but the Milwaukee brace came into use after MOE's article in 1965. (1,8,7)

The Milwaukee brace was used successfully in the curves below 60° imcompleted skeletal maturation cases, but it is also useful in severe curves after the completion of skeletal maturation. (1,3,8,7)

The one-year use of Milwaukee brace in Schcurmann's kyphosis enables stability of spine.

In spite of these, the conservative treatment has not been successful with the patinets who have delayed treatment with line filexibility, but much curving degree. (1,8)

The patients whom we have operated on, were in this group. The surgical treatment may be by anterior and posterior methods (1,5,8)

The most common instrument used in the surgical correction of Scheurmann's kyphosis is the Harrington compression rods. (1,2,3,8).

The placing of the Alici spinal instruments is like the placing of the Harrington instruments.

The correction angle, is known before hand in the Alici Spinal instrument and the rods arc bent according to this angle, it is not possible to have more correction by this method. But, it is possible to have excessive correction by using Harrington instruments.

The surgeon may not know how much correction he must give but with Alici Spinal instruments there is no such complication. More over, transverse binders in the Alici Spinal Instruments provides rotation satibility for the system, with providing possibility to mobilization.

The degree of the correction of the curve is closed to the degrees planned preoperatively.

Our patients have not had any complication in the early post operative period.

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