

**O-0024**

## Effects of Correction Surgery on Sports Activities in Patients with Adolescent Idiopathic Scoliosis

Katogi Takehide<sup>1)</sup>, Kotani Toshiaki<sup>2)</sup>, Okumura Taro<sup>1)</sup>, Kawai Kei<sup>1)</sup>, Shimizu Nao<sup>1)</sup>, Shirai Tomohiro<sup>1)</sup>, Akazawa Tsutomu<sup>2)</sup>, Sakuma Tsuyoshi<sup>2)</sup>, Minami Shohei<sup>2)</sup>

<sup>1)</sup>Department of Physical Therapy SEIREI SAKURA CITIZEN HOSPITAL,

<sup>2)</sup>Department of Orthopaedic Surgery SEIREI SAKURA CITIZEN HOSPITAL

**key words** Adolescent Idiopathic Scoliosis • Correction surgery • National physical fitness tests

### 【Purpose】

Though adolescent idiopathic scoliosis (AIS) patients usually undergo surgeries during adolescence when they are active in sports, little is known about the influences of correction surgery on their sports activities. The purpose of this study was to analyze the impact of surgery on sports activities in patients with AIS.

### 【Methods】

Twenty AIS patients (3 males, 17 females, average age  $14.4 \pm 1.5$  years old, range 12-17), with an average Cobb angle of the main curve of  $55.7 \pm 18.1^\circ$  were included. We evaluated preoperative and postoperative sports activities using deviation values of national physical fitness tests preoperatively and postoperatively. A postoperative physical fitness test was performed between 6 months and 1 year after surgery. Preoperative and postoperative results of the fitness tests were compared. Patients whose lowest instrumented vertebra (LIV) was above L2 and ones whose LIV was below L3 were grouped as upper LIV (uLIV) and lower LIV (lLIV), respectively. Postoperative results were compared between these two groups.

### 【Results】

Postoperatively, general performance on the physical fitness test improved for 2 patients, remained stable for 15 patients and declined for 3 patients. The total scores were  $40.3 \pm 15.2$  and  $39.6 \pm 16.2$  pre- and postoperatively, respectively ( $p = NS$ ). Scores of agility ( $p = 0.031$ ) and endurance ( $p = 0.034$ ) were improved significantly after surgery. However, there were no significant differences in other individual physical fitness tests pre- and postoperatively. Postoperatively, there were no significant differences between uLIV and lLIV groups.

### 【Discussion】

Correction surgery for AIS improved agility and endurance, but did not influence strength, bendability or speed of the patients. Correction of the scoliotic spine may improve ability of shift weight back and forth and respiratory function in patients postoperatively.