

신경근육재활 및 전기진단

게시일시 및 장소 : 10 월 18 일(금) 08:30-12:20 Room G(3F)

질의응답 일시 및 장소 : 10 월 18 일(금) 10:00-10:45 Room G(3F)

## **P 1-39**

### **Delayed diagnosis of amyotrophic lateral sclerosis in patients with preceding surgical treatments**

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#### **Objective**

Amyotrophic lateral sclerosis (ALS) is a rapidly progressive motor neuron disease which can cause catastrophic muscular weakness. Disease modifying treatments that can change the eventual course of disease have not been identified thus far. However, drugs, such as riluzole, edaravone, and stem cell therapy, have proven its efficacy and are indeed used in clinical settings. Current researches are also aimed to target genes which can treat this enigmatic disease. Therefore, it is important to diagnose and treat ALS at an early stage. One of the obstacles of early diagnosis is the initial presenting symptoms which can be mistaken for other neurologic or musculoskeletal diseases. And some patients even undergo unnecessary surgical treatments with misdiagnosis. In our research, we aim to evaluate whether unnecessary surgeries due to misdiagnosis led to eventual delay of ALS diagnosis.

#### **Materials and methods**

We retrospectively analyzed medical records of ALS patients who visited the department of rehabilitation medicine of a single tertiary university hospital from Jan 2009 to Dec 2018. We excluded patients whose onset and initial symptoms could not be identified due to incomplete medical records. Also, motor neuron disease patients with uncertain diagnosis of ALS were left out from the analysis.

#### **Results**

Among 418 ALS patients, 36 (8.6%) patients underwent surgical treatments due to their initial presenting symptoms before the correct diagnosis of ALS. 31 out of 36 had spinal surgeries and 7 underwent limb operations. 2 patients first had limb operation and additionally underwent spinal surgery. Moreover, there were patients who underwent multiple spinal surgeries; one patient had 3 total spinal surgeries, while two patients received surgeries twice. 13 patients had cervical spine surgery and 17 had lumbar spine surgery. Remaining 1 patient received both cervical and lumbar spine surgeries. For limb

operations, 1 patient had artificial joint replacement due to recurrent ankle sprain. 4 underwent operation for carpal tunnel syndrome and 1 had cubital tunnel syndrome operation. Lastly, 1 underwent lipoma excision on shoulder. ALS patients with preceding surgical treatments showed mean diagnosis delay of 17.6 ( $\pm$  13.7) months since the initial presenting symptoms. On the other hand, ALS patients who did not undergo surgeries demonstrated mean diagnosis delay of 12.8 ( $\pm$ 12.5) months, which is a statistically significant difference ( $p = 0.02$ ).

### **Conclusion**

For ALS patients, early initiating symptoms can result in misdiagnosis of other neurologic or musculoskeletal problems and lead to unnecessary surgical treatments. This turn of events may delay timely treatments in ALS patients. Thus, it is utmost important to closely observe patients with limb weakness at an early stage and thoroughly perform diagnostic evaluations.