

Novel and simple test to evaluate the finger dexterity in patients with cervical myelopathy – Finger extension test–

OBJECTIVE: Patients with cervical spondylotic myelopathy (CSM) often exhibit unintentional wrist flexion to compensate for impaired finger extension. Focusing on this compensatory wrist flexion, we propose Finger Extension Test (FET) to evaluate concisely the severity of CSM.

METHODS: Consecutive 33 outpatients (66 hands) with CSM were enrolled. FET procedure: With the forearms kept vertical and supination-pronation neutral in sitting position, patients were asked to grasp and then extend fingers as quickly as possible only once. The angle between the forearm axis (forearm line) and the line aligned to the dorsal surface of the hand was measured as the wrist angle. The difference between the wrist angles in grasp (Gr) and full extension (Ex) was defined as the deviation angle. When finger tips at Ex was positioned palmar or dorsal to the forearm line, hands were grouped into the Palmar (P) group (n=38 hands) or the Dorsal (D) group (n=28 hands). Results of Grip and Release test and JOA sub-scores for finger dexterity (4 points) were compared between the two groups.

RESULTS: The P group had significantly larger deviation angles of the wrist joint (40.2° vs 28.8° , $p<0.001$) and smaller values of the GR test (19.6 vs 22.3, $p=0.002$) than the D group. JOA sub-scores were significantly lower in patients with either hand in the P group (2.9, $p=0.04$ [n=21 patients]) than in those with both hands in the D group (3.6 [n=12 patients]).

CONCLUSIONS: Simple FET, judging the finger tip position in finger extension, may represent the severity of CSM.

