

O-07

A novel fusionless nuchal ligament reconstruction & stabilization surgery for patients with dropped head syndrome

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Title: A novel fusionless nuchal ligament reconstruction & stabilization surgery (NLRS) for patients with dropped head syndrome (DHS).

Background: The corrective fusion surgery for DHS would be invasive procedure for elderly people.

Research question: To evaluate outcomes of a novel fusionless NLRS.

Design: A retrospective study comparing pre- and postoperative (>6 months) outcomes.

Methods: The subjects were 20 consecutive DHS patients (2 males and 18 females, mean age 74.3 years) whose contrast-enhanced MRI showed abnormal high signal changes at nuchal ligaments and extensor muscles (Fig.1). NLRS was performed by reconstructing from the rostral prolonged nuchal ligament to the spinous process using an artificial ligament at C7 to T2 (Fig.2). The standing neutral-position CBVA: chin brow vertical angle (N-CBVA) (index of forward gaze) and the maximum extension CBVA (E-CBVA) (index of cervical extension range), were measured by X-ray before and after surgery. "Improvement" was defined as 10 degrees or more improvement of CBVA.

Results: The NLRS operation time was 67.9±16.8 minutes, blood loss was minimal. At 6 months, improvement was seen in 17 patients (85%) in N-CBVA and 16 (80%) in E-CBVA. Two poor-outcome patients had rigid local cervical kyphosis, and one had postoperative thoracic vertebral body fracture. Anchor screw loosening was observed in 6 cases within 3 months after surgery, and for 3 of these cases, reoperation was required due to the collective loss.

Discussion: Recent contrast-enhanced MRI study of INEM-DHS presented dysfunction of the cervico-thoracic extensor muscles due to laxity of the nuchal ligament at the C6 and 7 spinous process attachments (Fig.1). NLRS would reconstruct the weakened cervical extensor muscles. NLRS for DHS is a minimally invasive, fusionless procedure that preserves the range of cervical motion and would be useful for improving anterior gaze disturbance in DHS.

Fig. 1

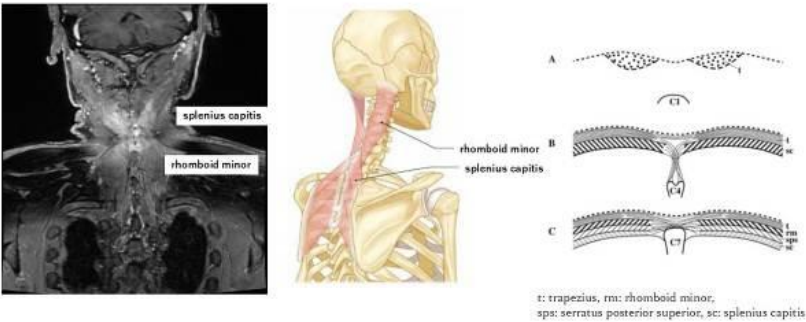


Fig.1

Fig. 2

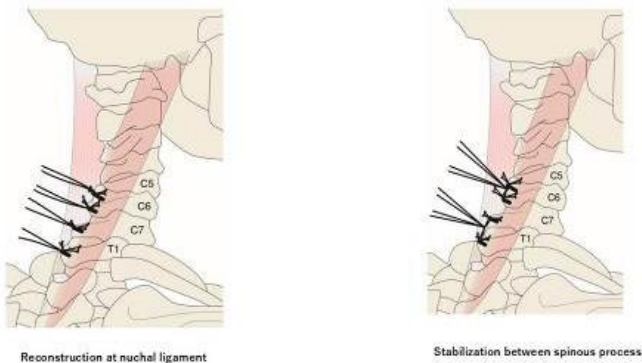


Fig.2