

Longitudinal changes in contrast-enhanced MRI findings of Dropped head syndrome

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Background: Contrast-enhanced MRI for Dropped head syndrome (DHS) shows characteristic contrast findings in the neck extensor muscles, but it is not known how these findings change over time.

Research question: Quantification and over-time comparison of signal intensity of neck extensor muscles in contrast-enhanced MRI.

Design: This is a retrospective study of DHS patients who underwent contrast-enhanced MRI twice over time.

Methods: 22 patients with DHS whose first contrast-enhanced MRI were performed within 6months of onset, and the second were performed within 12months of onset were included. Identified the both splenius capitis and trapezius in the frontal section which include the C6/7 spinous processes in the contrast-enhanced MRI (fig.1) and, and the signal-to-noise ratio (SNR (=SI/SD)) was calculated from measured signal intensity (SI) of each muscle and SI of the signal-free area (SD).

Results: The average of splenius capitis SNR in the first MRI was 148.3 ± 120.4 and in the second MRI was 80.5 ± 49.5 . The splenius capitis SNR values were significantly lower in the 2nd MRI compared to the 1st MRI ($p=0.008$). The average of trapezius SNR in the first MRI was 86.9 ± 64.8 and in 2nd was 60.5 ± 34.9 . There was no significant difference in trapezius SNR values between the two MRIs ($p>0.05$) (fig.2).

Discussion: This study showed that the contrast-enhanced MRI signal change which observed in splenius capitis fade over time (fig.3). These changes may reflect a monophasic inflammatory restricted to neck extensor muscles, which is the pathology of DHS. The contrast-enhanced MRI for patients of DHS may be useful for diagnosis in the early stages.

Fig. 1

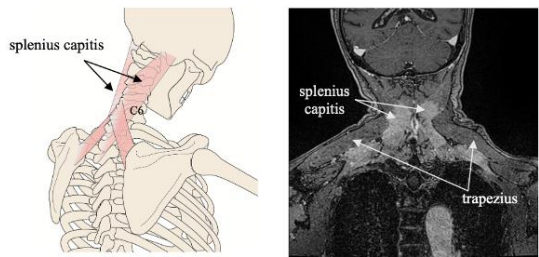


Fig. 2

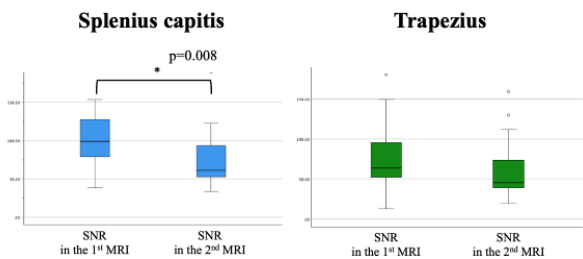


Fig. 3

