

## Swallowing difficulty due to hypothyroid myopathy - A Case report –

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### Introduction

Hypothyroidism often induce muscular symptoms. When only the muscular symptoms are prominent among the various symptoms of hypothyroidism, it could be called hypothyroid myopathy (HM). If HM also occur to swallowing muscles, theoretically it could Result in swallowing difficulty. However, no study has yet dealt with a direct linkage between hypothyroidism and swallowing difficulty in pharyngeal stage of swallowing. Here we report a case of histologically identified swallowing difficulty due to HM with a full recovery after levothyroxine administration.

### Case report

A 51-year-old man was referred to our hospital for worsening swallowing difficulty over the previous 2 months. For the evaluation of dysphagia, we conducted videofluoroscopic swallowing study (VFSS) and fiberoptic endoscopic evaluation of swallowing (FEES). At first FEES revealed diminished laryngopharyngeal sensation, inability to clear material from valleculae, pyriformis or endolarynx and mild saliva pooling around posterior pharyngeal walls and laryngeal vestibules. Incomplete airway closure Resulted in liquid aspiration with score 8 of penetration aspiration scale (Fig. 1). In addition, VFSS showed decreased laryngeal elevation and weakness of pharyngeal contraction (Fig. 2). To identify the dysphagia of unknown origin, we checked over the past history. We found out from previous medical record that he was diagnosed with subacute hypothyroidism incidentally with subtle weakness of both upper and lower proximal limbs recently. In the next step, dysphagia with muscle disorder such as endocrine myopathy was suspected because he had weight loss and subtle muscle weakness. Needle electromyography examination showed early recruitment patterns of motor unit action potentials (MUAPs) in proximal limbs in upper and lower extremity and tongue muscles with decreased amplitudes and short durations of MUAPs in the needle exam. Above EDX findings are suggestive of myopathy. Histopathologic assessment showed a mild infiltration of mononuclear cells in the endomysium, consistent with myopathy (Fig. 3). A hormone replacement therapy (levothyroxine 0.15mg/day) was started. The follow-up VFSS was performed 3 weeks after treatment, and improvement of pharyngeal contraction ability and improvement of aspiration were observed. So the patient was then able to take a regular diet again.

### Discussion

In terms of its reversibility, it would be helpful to consider HM induced dysphagia for the differential diagnosis in circumstances where it is not possible to make a definite diagnosis of swallowing difficulty. It is assumed that there are a number of cases in which

HM induced dysphagia was not diagnosed at the actual clinical setting. We think this Case report is clinically worthy of Discussion in that swallowing difficulty is recovered reversibly in the patient with dysphagia of unknown origin accompanied by hypothyroidism.

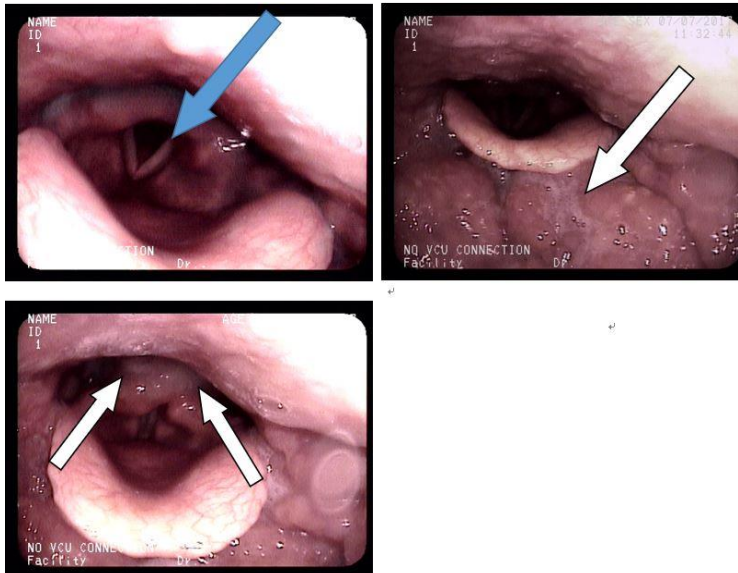


FIG1. FEES performed during the patient evaluation revealed A) aspiration of blue dye liquid past the vocal folds due to delayed airway closure (blue arrow), B) saliva and secretion pooling around the posterior tongue base and C) the piriform sinuses (white arrows).

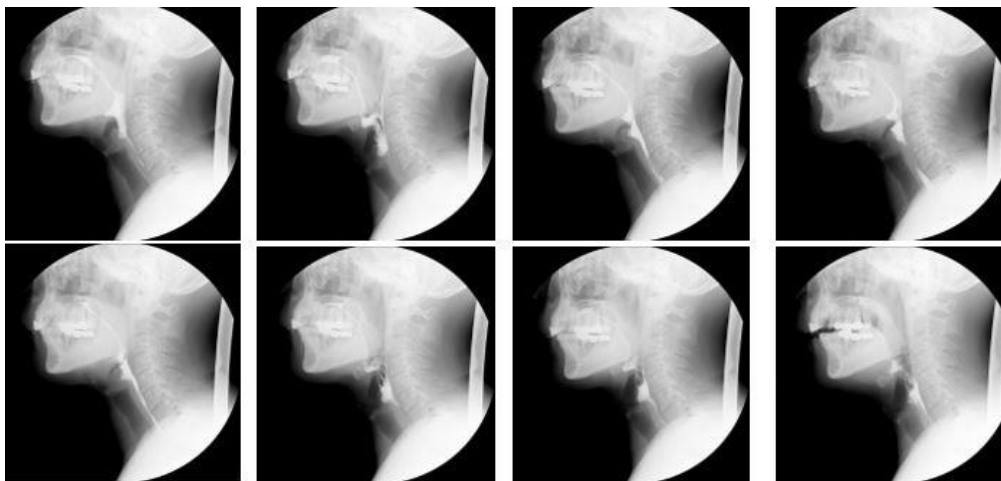


FIG2. VFSS showed decreased laryngeal elevation and weakness of pharyngeal contraction.

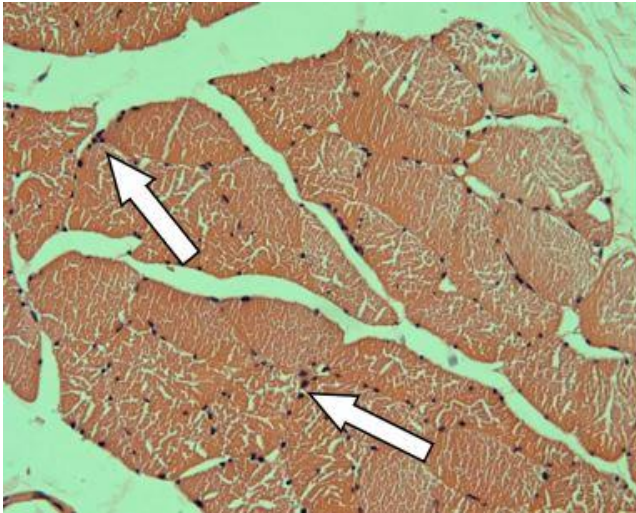


FIG3. On histopathologic evaluation of deltoid muscle, Hematoxylin-eosin stain suggested myopathy with mild mononuclear cell infiltration in the endomysium (white arrows).