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## Subtle dysphagia as initial presentation, caused by hidden malignancy, A case report

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### Introduction

The presence of post-swallowing remnants can be caused by reduced tongue driving force, impaired pharyngeal shortening, and/or pharyngeal constriction[1]. Such impairments may have various causes. The risk of pharyngeal residue increases in the elderly[2,3], as the triggering of swallowing is delayed in aging individuals[4,5]. Thus, subtle changes in swallowing, such as delayed triggering or small increases in pharyngeal residue, are frequently overlooked by physicians. However, subtle changes evident in a videofluoroscopic swallowing study (VFSS) may suggest a hidden disease. Therefore, subtle changes in swallowing without predisposing factors should arouse suspicion.

### Case report

A 65-year-old male visited our dysphagia clinic complaining of residual sensation during swallowing that had started 1 month ago. He denied any relevant medical or social history (smoking). On physical examination, the right tongue was deviated and atrophied (Fig. 1A). A VFSS revealed moderate amounts of post-swallowing remnants in the vallecular fossa and pyriformis sinus (Supplementary video 1). Brain magnetic resonance imaging (MRI) revealed no remarkable abnormal finding. However, a bone scan revealed multiple bone metastases in the skull, right humerus, both scapulae, both ribs, the C-T-L vertebrae, the sacrum, both pelvic bones, and both femora (Fig. 1B, 1C). Further examination revealed adenocarcinoma of the prostate with multiple metastases.

### Discussion

Post-swallowing residue represents a subtle swallowing change, increasing the risk of aspiration and subsequent pneumonia. Various diseases can create post-swallowing remnants, which also increase with aging as degenerative causes[6]. Thus, such remnants may be neglected or overlooked by clinicians who regard them as features of aging. However, such remnants may indicate a brain metastasis or a hidden malignancy; a thorough check of the oropharynx and brain is required. Our present case highlights the fact that mild dysphagia with increased post-swallowing remnants can be the initial presentation of a hidden malignancy with metastases. Physicians must be alert to unexplained dysphagia, including even mild dysphagia associated with increased levels of post-swallowing remnants.

### Conclusion

Post-swallowing residue represents a subtle swallowing change, increasing the risk of aspiration and subsequent pneumonia. Our case highlights the fact that mild dysphagia with increased post-swallowing remnants can be the initial presentation of a hidden malignancy with metastases. Physicians should keep in mind for unexplained dysphagia or atrophied tongue might be initial presentations of hidden malignancy.

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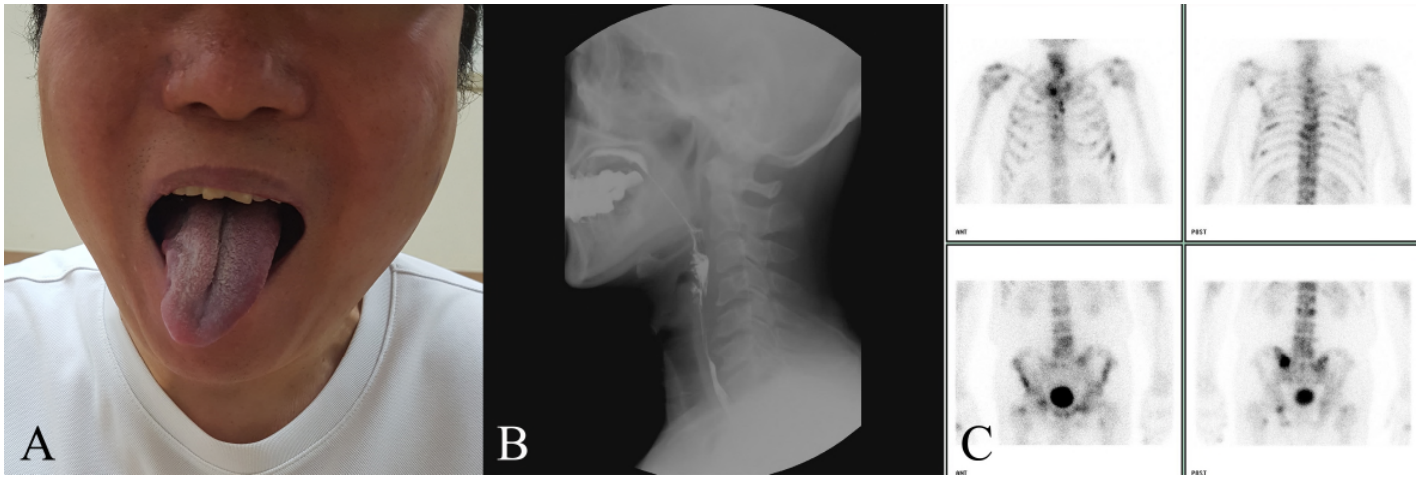


**A. Tongue was mildly deviated to right side. B. VFSS showed moderate post-swallow remnant. C. Bone scan showed multiple metastasis.**