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Endoscopic ultrasound-guided fine-needle aspiration to diagnose a recurrent nasopharyngeal carcinoma in the parapharyngeal space

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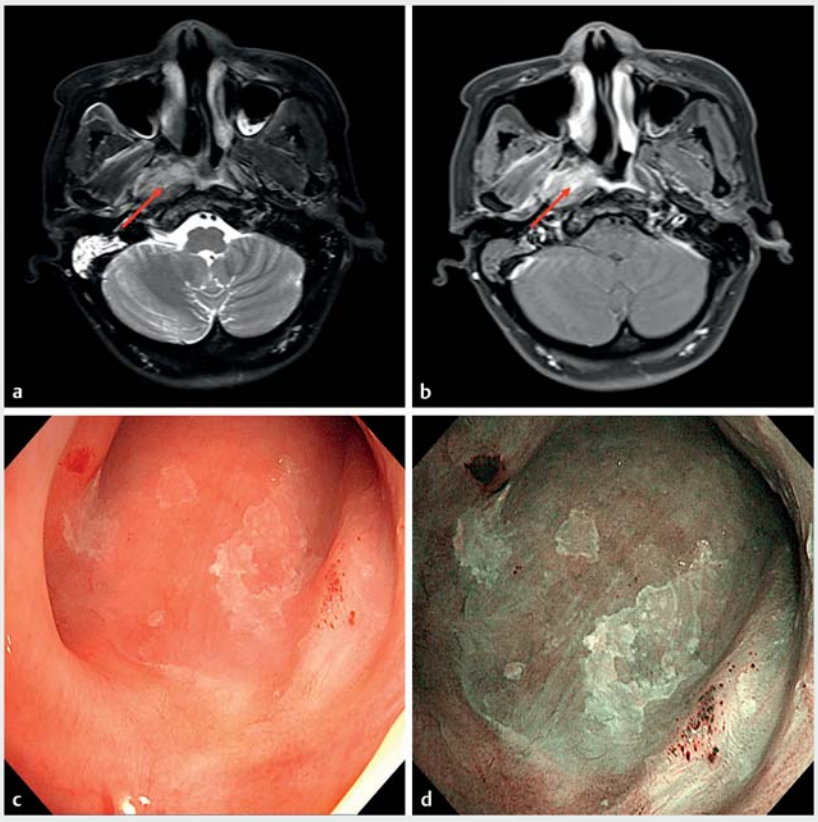
A 46-year-old woman was referred to our hospital having suffered from persistent headache and hearing loss for 1 month. She had a previous history of nasopharyngeal carcinoma (NPC) after chemoradiotherapy. Magnetic resonance imaging revealed a soft tissue mass in the right parapharyngeal space (PPS) (▶ **Fig. 1 a, b**). Nasopharyngoscopy showed only scar-like changes in the nasopharynx (▶ **Fig. 1 c, d**). Transnasal endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) was performed with the patient under total intravenous anesthesia (▶ **Video 1**). A flexible echoendoscope (BF-UC260FW; Olympus, Japan) was introduced into the nasopharynx via the right nasal cavity. EUS revealed an irregularly shaped mass in the right PPS. The mass was predominantly heterogeneous hypoechoic mixed with spotted hyperechoic (▶ **Fig. 2 a**). Guided by real-time ultrasonography, a 21-gauge needle (NA-201SX-4021; Olympus, Japan) was used to penetrate the PPS neoplasm (▶ **Fig. 2 b**). To sample tissue, a syringe was used to introduce suction pressure. A total of three passes were performed. After the puncture procedure, a nasopharyngoscope was reinserted into the nasopharynx to exclude the presence of active bleeding from the puncture sites (▶ **Fig. 2 c**). The acquired samples were sent for pathological examination (▶ **Fig. 2 d**). Histopathology identified nonkeratinizing squamous cell carcinoma, and this was subsequently validated by immunohistochemistry (▶ **Fig. 3**). The patient was diagnosed with recurrent NPC with a PPS lesion.

Although recurrence of NPC after chemoradiotherapy is common, extranasopharyngeal recurrence is rare. Clinical evidence indicates that tissue retrieval from the PPS is, in most cases, challenging due to its deep location. Some studies have explored the alternative use of computed tomography-guided FNA and nonreal-time image-guided endoscopic FNA [1–4]. However, these techniques are limited by a high risk of injury to surrounding structures and restricted to nonreal-time image-guided procedures. In contrast, EUS-FNA is a simple, safe, and minimally invasive approach to obtain tissue samples from the PPS of patients with suspected NPC recurrence.



▶ **Fig. 1** Representative magnetic resonance imaging and nasopharyngoscopy images in a 46-year-old patient with suspected recurrence of nasopharyngeal carcinoma (NPC). **a** Magnetic resonance imaging showing a soft tissue mass in the right parapharyngeal space (PPS). The signal intensity of the neoplasm shows a slightly long T2 on the T2-weighted image (arrow). **b** On T1-weighted images, the tumor is enhanced after contrast scanning (arrow). **c, d** Lack of abnormalities as detected through white-light nasopharyngoscopy and narrow-band imaging.

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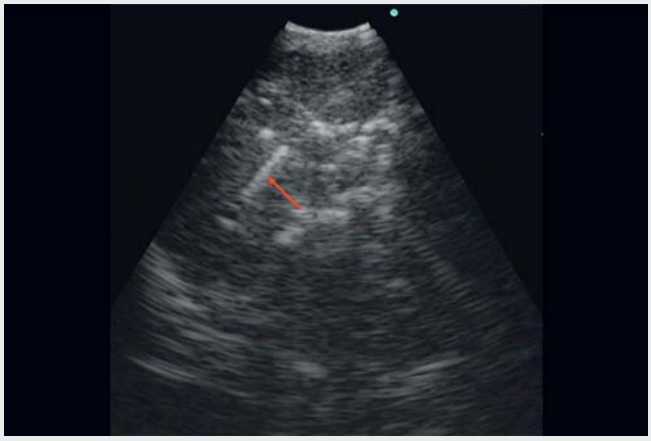
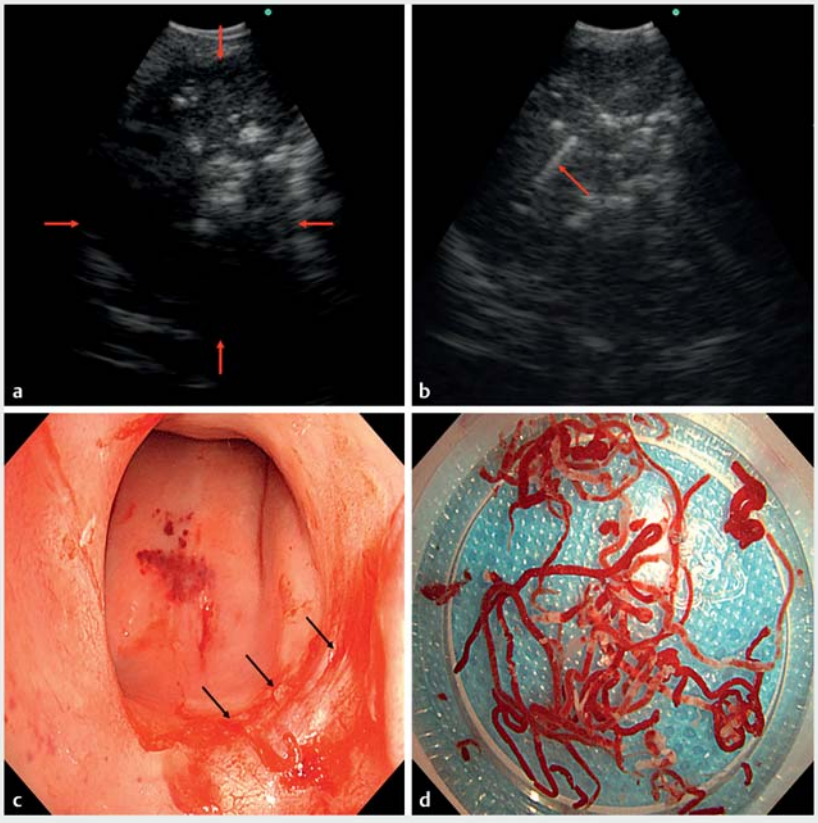
Competing interests

The authors declare that they have no conflict of interest.



Video 1 Endoscopic ultrasound-guided fine-needle aspiration to diagnose a recurrent nasopharyngeal carcinoma in the parapharyngeal space.



▶ **Fig. 2** Diagnosis of recurrent NPC located in the PPS based on endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA). **a** Endoscopic ultrasonography showed an irregular mass in the right PPS; the mass was predominantly heterogeneous hypoechoic mixed with spotted hyperechoic (arrows). **b** EUS-FNA was performed with a 21-gauge needle (arrow). **c** No active bleeding was found after the puncture procedure, and the puncture sites were small and minimally traumatic (arrows). **d** Aspirated tissue specimens obtained during EUS-FNA.

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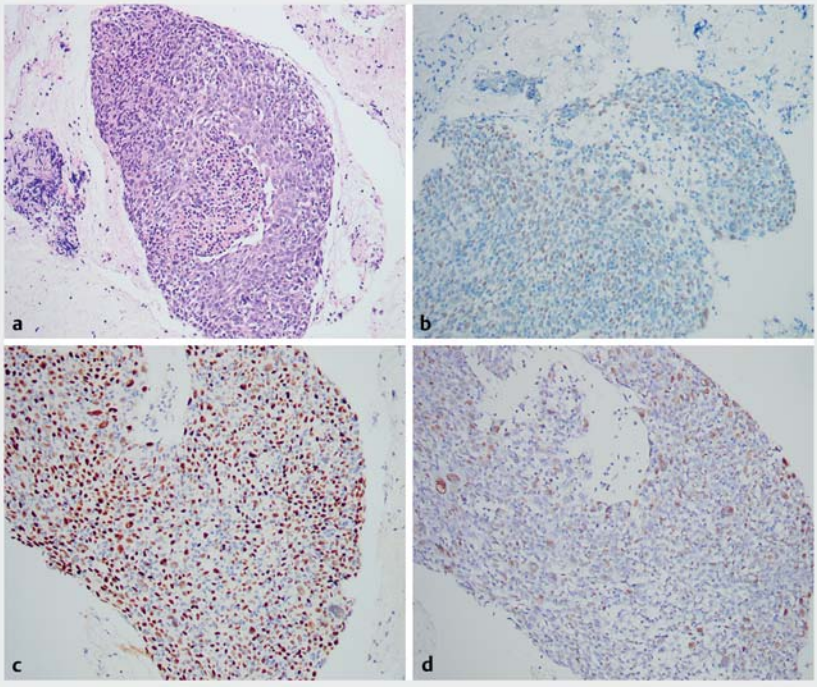
References

[1] Jiang L, Xu H, Lin J et al. Evaluation of computed tomography-guided parapharyngeal mass needle biopsy through mandibular notch for diagnosis of recurrent nasopharyngeal carcinoma. J Cancer Res Ther 2014; 10: C229–C231

[2] Farrag TY, Lin FR, Koch WM et al. The role of pre-operative CT-guided FNAB for parapharyngeal space tumors. Otolaryngol Head Neck Surg 2007; 136: 411–414

[3] Tang QN, Tang LQ, Liu LT et al. Efficacy of transnasal endoscopic fine-needle aspiration biopsy in diagnosing submucosal nasopharyngeal carcinoma. Laryngoscope 2021; 131: 1798–1804

[4] Li M, Qu S, Qin Y et al. Diagnosis of nonexophytic nasopharyngeal lesion with endoscopy-guided core needle biopsy after narrow band imaging. Oncotarget 2017; 8: 76069–76075



▶ **Fig. 3** Pathologically verified nonkeratinizing squamous cell carcinoma. **a** Histological examination showed clusters of atypical epithelial cells (magnification × 200). **b–d** Immunohistochemistry demonstrated positive staining for P40, P63, and EBER (magnification × 200).

Bibliography

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