ctHPVDNA for recurrence detection in HPV+ SNSCC

Author(s)
Elise Krippaehne, BS
Vivek Pandrangi, MD
Mathew Geltzeiler, MD, FARS

Affiliation(s)
Oregon Health and Science University;

Abstract:

Background: Sinonasal squamous cell carcinoma (SNSCC) is a rare malignancy with a high recurrence rate. However, surveillance may be challenging in some patients as traditional imaging methods can have limitations. Plasma-based circulating tumor human papillomavirus (HPV) DNA (ctHPVDNA), or "liquid biopsy", testing provides a non-invasive, real-time method for monitoring tumor burden and treatment response.

Here we report a case of using this diagnostic aid for surveillance of a patient with SNSCC. Case: A 58-year-old male with a history of inverted papilloma (IP) and high-grade dysplasia underwent initial endoscopic resection at an outside institution in January 2020. He presented to our clinic 7 months later with concern for persistence/recurrence in the right middle meatus. He underwent revision endoscopic resection revealing a 2mm focally invasive SCC with negative margins. During a surveillance visit in December 2022, suspicious mucosal changes at the nasal septum were noted. Biopsies confirmed recurrent high-grade dysplasia with focal invasive carcinoma. PET/CT imaging showed mild FDG uptake, and ctHPVDNA (NavDx) testing was elevated (score: 5, p16+). He underwent repeat endoscopic resection revealing a field defect involving the ethmoid roof, sphenoid sinus, and nasopharynx with negative margins. Postoperatively, NavDx testing has consistently remained at zero, while surveillance endoscopy and imaging has been equivocal.

Conclusion: Liquid biopsy may enhance accuracy of recurrence detection in HPV+ SNSCC, which comprises up to 62% of all SNSCC cases. This case underscores the potential of ctHPVDNA as an effective monitoring tool, especially when other surveillance methods may be challenging to utilize.