

# Poorly differentiated non-keratinizing squamous cell carcinoma of the esophagus. A case report

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## Case Report

Radiology



**Background:** Background: Poorly differentiated non-keratinizing squamous cell carcinoma (PD-NK-SCC) of the esophagus is an uncommon histologic subtype characterized by basaloid morphology, minimal keratinization, and aggressive behavior. Case presentation: A 57-year-old male from Totonicapán, Guatemala, presented with progressive dysphagia and retrosternal pain. Endoscopy revealed an ulcerated lesion obstructing 90% of the esophageal lumen. Histopathology confirmed PD-NK-SCC, and CT imaging demonstrated wall thickening, mediastinal lymphadenopathy, and hepatic metastases. Discussion: PD-NK-SCC exhibits poor differentiation, high mitotic index, and necrosis, with immunohistochemical positivity for p40, p63, and CK5/6. Recent genomic studies highlight SWI/SNF complex alterations (SMARCB1/SMARCA4) and PD-L1 overexpression as markers of aggressiveness. Conclusion: PD-NK-SCC is a rare, aggressive malignancy requiring multidisciplinary diagnosis and treatment.

**Keywords:** Non-keratinizing squamous cell carcinoma, esophagus, SMARCB1, SWI/SNF, PD-L1, immunotherapy.

Esophageal squamous cell carcinoma (ESCC) is one of the leading causes of cancer-related deaths worldwide. The poorly differentiated non-keratinizing variant represents an aggressive histologic subtype with limited keratin formation, high mitotic activity, and necrosis. Due to nonspecific symptoms, diagnosis is often delayed until advanced stages, emphasizing the importance of early detection and imaging correlation.

## Case report

A 57-year-old man from Totonicapán, Guatemala, presented with progressive dysphagia, heartburn, and weight loss over six months. Endoscopy identified an ulcerated, friable mass obstructing 90% of the esophageal lumen. Biopsies revealed sheets of basaloid atypical cells with high nuclear-to-cytoplasmic ratio and necrosis. Immunohistochemistry was positive for p40, p63, and CK5/6, and negative for neuroendocrine markers, confirming poorly differentiated non-keratinizing squamous cell carcinoma. CT scans demonstrated circumferential wall thickening, mediastinal lymphadenopathy, and multiple hepatic metastases.

## Discussion

PD-NK-SCC of the esophagus is a morphologically distinct entity lacking keratin pearls and showing basaloid differentiation. It represents less

than 5% of esophageal SCCs but carries a significantly worse prognosis. Immunohistochemical staining for p40, p63, and CK5/6 confirms squamous lineage, while Ki-67 proliferation index (>70%) correlates with aggressiveness. Recent molecular data have identified alterations in the SWI/SNF chromatin remodeling complex (SMARCB1/SMARCA4), TP53 mutations, and PD-L1 overexpression, which may serve as prognostic biomarkers and therapeutic targets. Treatment strategies include surgical resection for localized disease and platinum-based chemoradiotherapy or immunotherapy for advanced stages.

## Conclusion

Poorly differentiated non-keratinizing squamous cell carcinoma of the esophagus is a rare, aggressive malignancy that requires multidisciplinary management. Molecular profiling and immunotherapy represent promising advances for improving patient outcomes.

## Conflicts of interests

The authors have no conflicts of interests.

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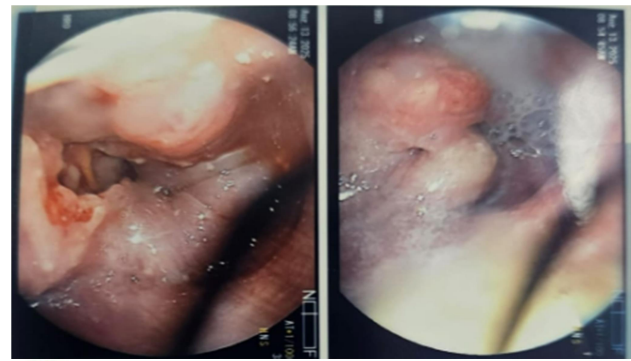


**Figure 1.** Upper and middle. Non-contrast CT shows diffuse esophageal wall thickening. Lower. Arterial phase reveals irregular mucosal enhancement and wall distortion. Lower.

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**Figure 2.** Pathology slides demonstrate basaloid tumor nests with central necrosis confirming PD-NK-SCC.

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