

SMARCA4-deficient Undifferentiated Esophageal Carcinoma

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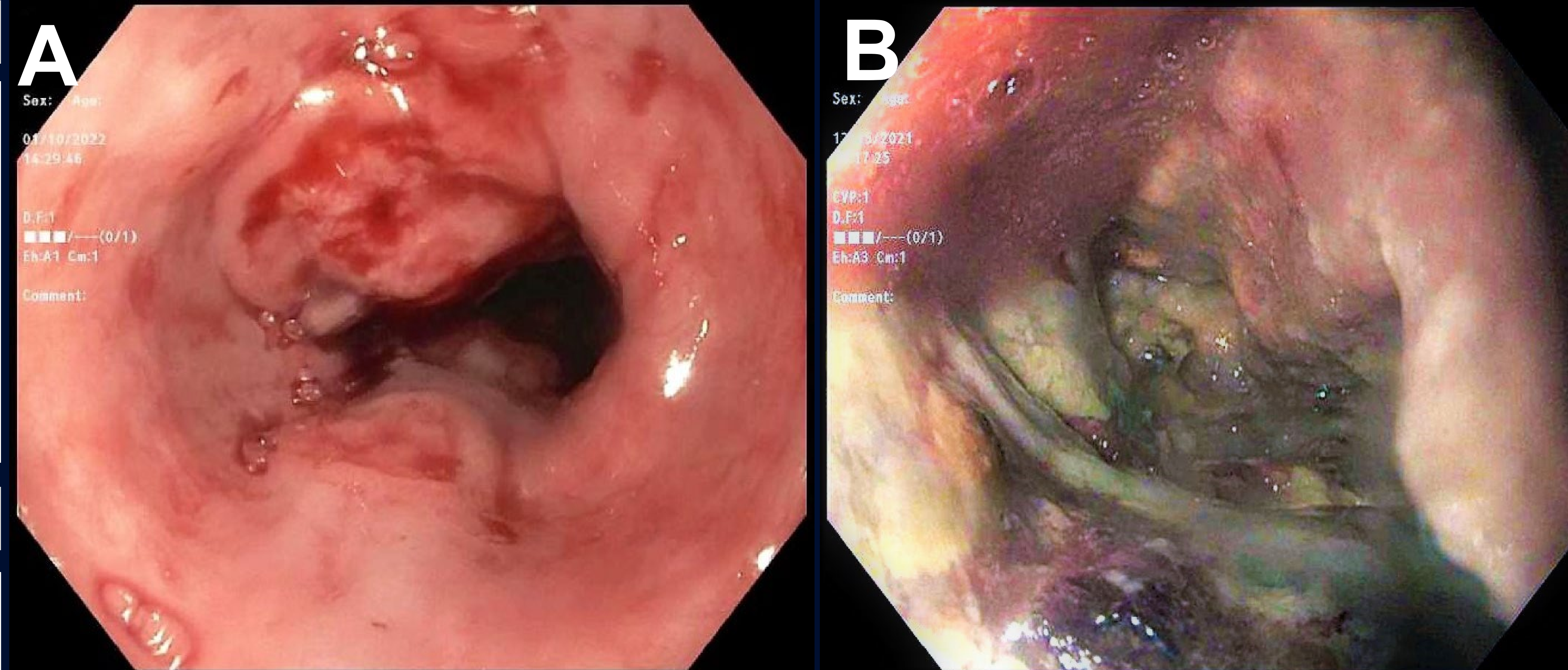
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Introduction

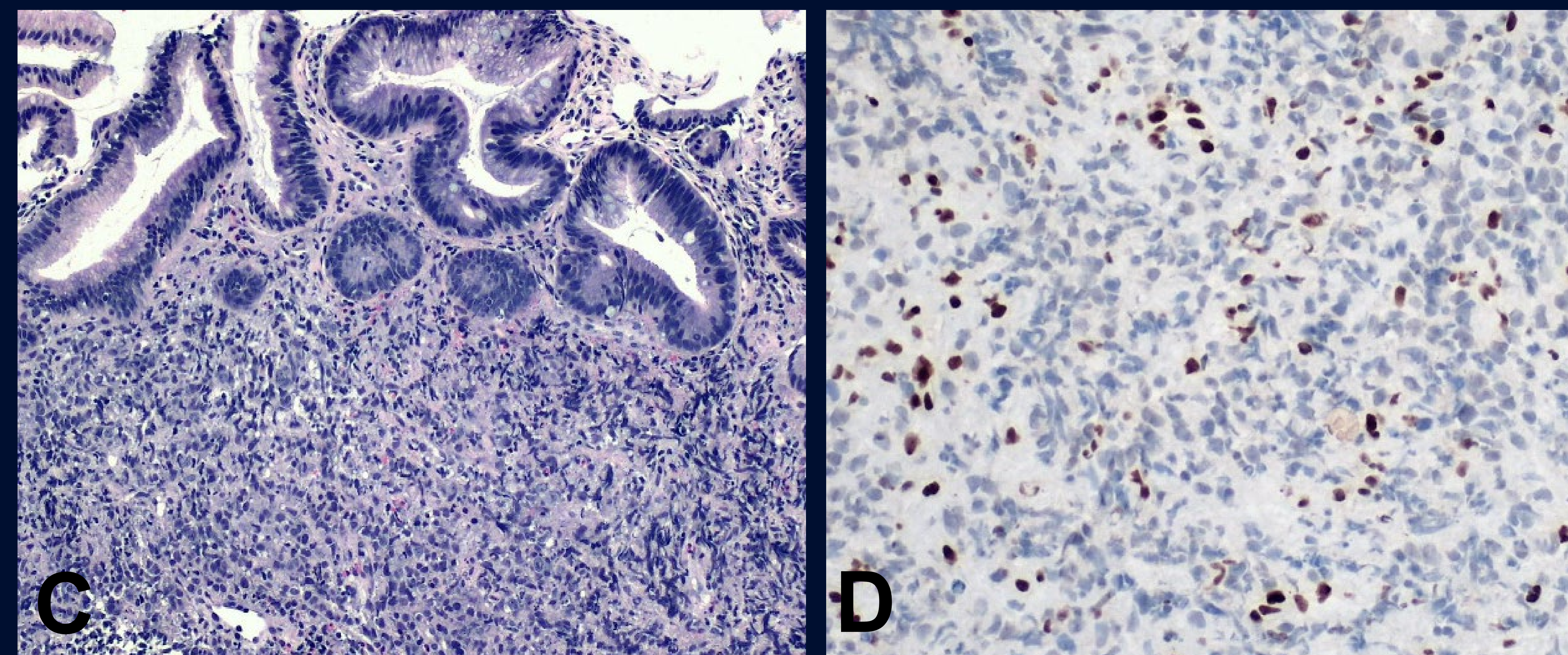
- Undifferentiated esophageal carcinomas (UEC) are rare with aggressive behavior and dismal prognosis. An extremely rare subset is the SMARCA4-deficient UEC which has only been reported in 14 cases to-date. We present 2 patients with SMARCA4-deficient UEC.

Case Description

- Case 1:** A 39 y/o man presented with nausea, abdominal pain, and weight loss. No significant social history. His **grandfather had esophageal cancer** in his 60s. Exam was significant for RUQ tenderness and hepatomegaly. Labs were unremarkable. Abdominal CT showed **distal esophageal mass with hepatic metastasis**. EGD revealed large, ulcerating distal esophageal mass (**Fig. A**). He passed away 1.5 months after initial presentation.
- Case 2:** A 64 y/o man with history of hiatal hernia and **reflux disease**, presented with persistent heartburn. He had history of **smoking and alcohol abuse**. Labs were unremarkable.



A: Case 1 EGD showing large, ulcerating distal esophageal mass.
B: Case 2 EGD showing fungating, necrotic, distal esophageal ulcer.



C: Tumor biopsy showing undifferentiated tumor cells with adjacent intestinal metaplasia (Barrett's esophagus).
D: Loss of SMARCA4 within the tumor cells (while retained within inflammatory cells).

Case Description

- Abdominal CT showed **distal esophageal mass with hepatic metastases**. EGD revealed necrotic, distal esophageal ulcer (**Fig. B**). He passed away 3 months after initial presentation.
- Pathology findings** are shown and summarized in **Figures C and D**.

Discussion

- The SMARCA4 gene is a **tumor suppressor gene** and its loss is associated with undifferentiated highly aggressive tumors.
- SMARCA4-deficient UEC is extremely rare and has been **predominantly reported in elderly men** similar to our 64 y/o patient. However, our 39 y/o patient **did not have any risk factors** and is the **youngest reported patient**, with a positive family history which highlights the possibility of a **germline mutation**.
- Histologically, the observed BE in the background of tumor cells and the distal esophageal location in these tumors suggest the **possibility of this tumor arising from de-differentiation of BE**.