Massive squamous cell carcinoma arising from hidradenitis suppurativa with marked hypercalcemia and neutrophilia

To the Editor: Hidradenitis suppurativa (HS) is a chronic, progressive, destructive skin disease that presents with persistent pain and fibrosis, and patients with HS occasionally experience squamous cell carcinoma (SCC). A 36-year-old woman with a 19-year history of HS had not visited a dermatologist for 4 years. She had been aware of a mass in her buttock for a year, which had gradually increased in size and bled continually. She experienced dizziness and was admitted with a large tumor, severe anemia, hypercalcemia, and neutrophilia (Fig 1, *A*).

Her laboratory test results were abnormal: white blood cell count, 96.3 × $10^3/\mu$L (neutrophils, 93.5%); hemoglobin, 6.2 g/dL; albumin, 1.8 g/dL; C-reactive protein, 13.2 mg/dL; corrected serum calcium levels, 13.7 mg/dL (normal, 8-10 mg/dL); serum SCC antigen, 23.8 ng/mL (0-1.4 ng/mL); serum granulocyte colony-stimulating factor (G-CSF), 1260 pg/mL (<39 pg/mL); intact parathyroid hormone level, 5.5 pg/mL

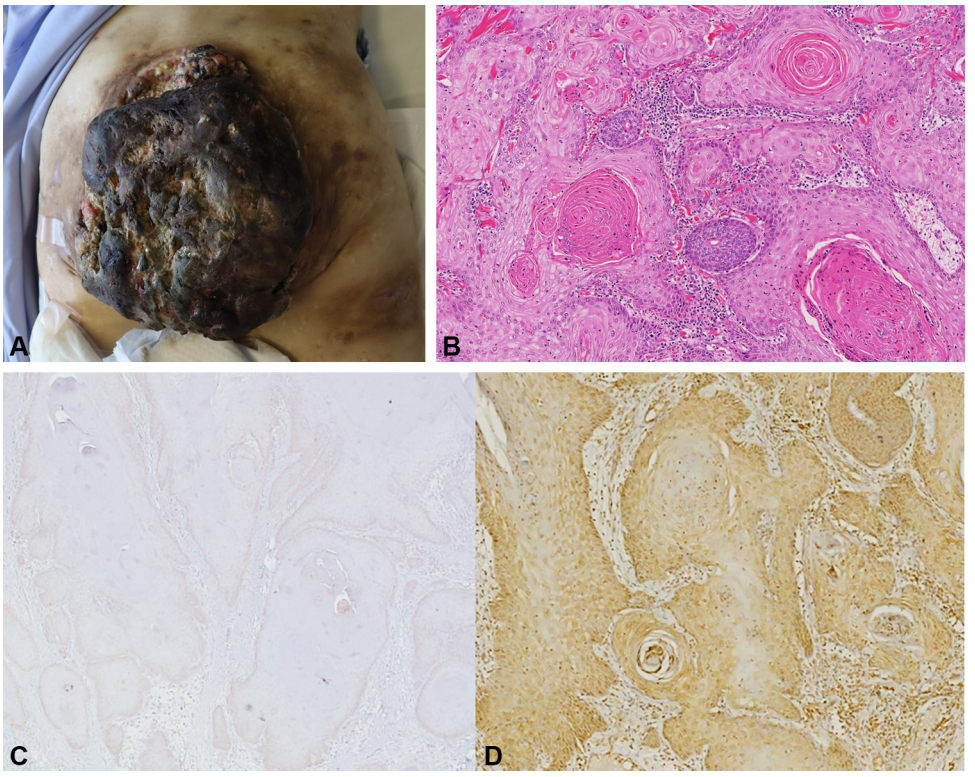

Fig 1. A, On admission, a large tumor, 25 × 25 × 7 cm in extent, was observed with necrosis and ulcers on the buttocks and pigmentation and scars surrounding the tumor. Fistulas and scars were present around the tumor, as well as in the axillary and inguinal regions. **B,** Histopathological findings of the tumor on the patient's buttocks showed an infiltrative growth of squamous cells in all layers of the epidermis to the dermis, with keratin pearls present (hematoxylin–eosin stain; original magnification, ×200). **C** and **D,** Immunohistochemical staining for granulocyte colony-stimulating factor (G-CSF) and parathyroid hormone-related peptide (PTHrP) revealed that some tumor cells were positive for G-CSF, whereas most tumor cells were positive for PTHrP (original magnification, ×200).

(10-65 pg/mL); and parathyroid hormone-related peptide (PTHrP), 37.3 pmol/L (<1.1 pmol/L). The patient was diagnosed with stage 4 SCC arising from HS (pT4, NX, M0). The tumor cells were mostly G-CSF-positive and PTHrP-positive (Fig 1, *B-D*). On day 18 of hospitalization, the patient developed sepsis and acute renal failure, and computed tomography confirmed a new metastasis in the lung. In addition to a total of 20 Gy of electron beam and 24 Gy of X-ray radiotherapy, 1 course of cetuximab monotherapy was administered, but the patient died on day 47.

A similar case describing the development of SCC from HS has been published by Pitch et al.[1] The prevalence of HS varies among people from different races, with HS being more common in women in Western countries and in men in East Asia. The axillary region is the most commonly affected area in women, while it is the buttocks in men.[2] SCC occurs in 4.6% of HS lesions.[3] The mechanism underlying SCC development from HS involves aspects of both scar cancer resulting from persistent inflammation similar to that in burn scars and an acquired genetic defect in the Notch signaling pathway involved in hair follicle development and tumor suppression.[4]

The mean time from HS onset to SCC development is 25.5 years (range, 3-51), with a mortality rate of 58.7%.[5] Our patient developed SCC of the buttocks 18 years after HS onset when she had stopped consulting a doctor, and the progression was exceedingly rapid.

The severe hypercalcemia and neutrophils were attributable to the patient's high serum levels of PTHrP and G-CSF proteins, respectively; these proteins were extensively expressed in the tumor cells. Hypercalcemia resulting from PTHrP expression by SCC cells is rare, even in SCC arising from HS.[1]

G-CSF is expressed by HS lesions, and this protein causes persistent inflammation and tissue damage,[6] enhances tumor cell invasion, and promotes cancer progression.[7] This patient's serum G-CSF levels were approximately 30 times the reference value, and thus, G-CSF may have contributed to the rapid growth and metastasis of SCC. The patient delayed examination because of embarrassment over her symptoms. We recommend educating patients about SCC arising from HS.

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Conflicts of interest

None disclosed.

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