

## A complication in a patient with hidradenitis suppurativa taking adalimumab



Olivia D. Perez, BA,<sup>a</sup> Meera Tarazi, MD,<sup>b</sup> Sameera Husain, MD,<sup>b</sup> Jasnit Makkar, MD,<sup>c</sup> and Stephanie M. Gallitano, MD<sup>b</sup>

**Key words:** hidradenitis suppurativa; malignant transformation; squamous cell carcinoma.



### DESCRIPTION

A 54-year-old man with a 25-year history of Hurley stage III hidradenitis suppurativa (HS) and inflammatory arthritis presented to the emergency department with worsening groin lesions with increasing pain and drainage. His treatment for HS and arthritis included 40-mg adalimumab weekly and 17.5-mg methotrexate weekly for 5 years. He had not seen a dermatologist in 2 years. His prescriptions were filled by another provider. On physical examination, the patient appeared cachectic. He was both tachycardic and tachypneic. The sacrum, mons pubis, scrotum, and penis had multiple

From the Vagelos College of Physicians & Surgeons, Columbia University Medical Center, New York, New York<sup>a</sup>; Department of Dermatology, Columbia University Medical Center, New York, New York<sup>b</sup>; and Department of Radiology, Columbia University Medical Center, New York, New York.<sup>c</sup>

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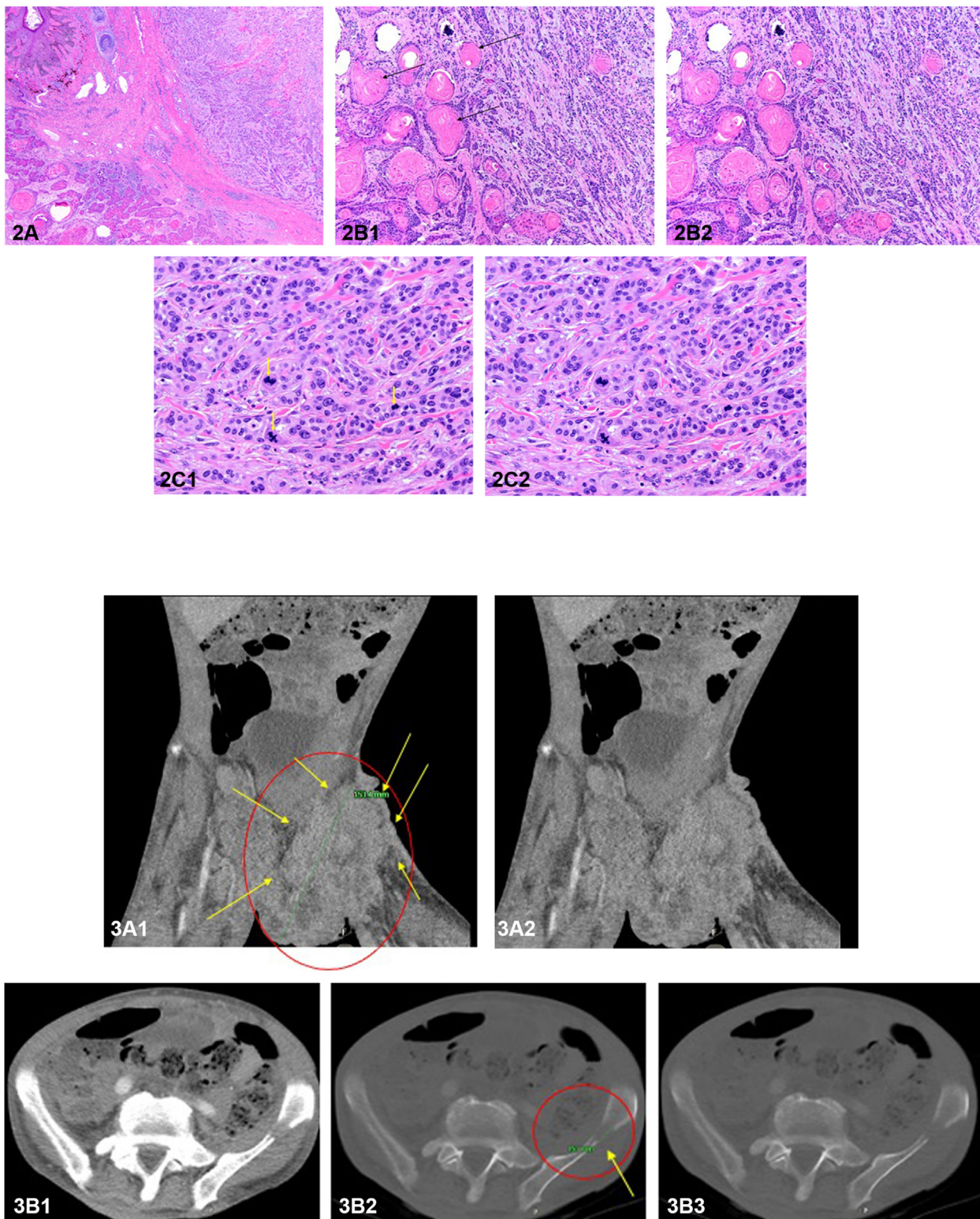
Correspondence to: Stephanie M. Gallitano, MD, Assistant Professor of Dermatology, Columbia University Medical Center, Milstein Inpatient Consultation, New York-Presbyterian, 161 Fort Washington Avenue, 12th Floor, New York, NY 10032. E-mail: [sg3587@cumc.columbia.edu](mailto:sg3587@cumc.columbia.edu).

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coalescing draining sinuses and subcutaneous nodules and plaques. There was a large fungating ulcer in the left inguinal fold (Fig 1). A biopsy was performed of the large ulcer (Fig 2), and cross-sectional imaging of the patient was obtained (Fig 3).

**Question 1: What is the most likely diagnosis?**

- A. Perianal cutaneous Crohn disease
- B. Granuloma inguinale
- C. Noduloulcerative syphilis
- D. Poorly controlled hidradenitis suppurativa
- E. Squamous cell carcinoma (SCC)

**Answer:**

**A.** Perianal cutaneous Crohn disease — Incorrect. Perianal cutaneous Crohn disease is a rare cutaneous disorder characterized by perianal fissures and fistulas. Histopathology reveals noncaseating granulomas infiltrating with multinucleate giant cells, lymphocytes, eosinophils, and plasma cells.<sup>1</sup>

**B.** Granuloma inguinale — Incorrect. It is a genital ulcerative disease caused by *Klebsiella granulomatis* and rarely occurs in the United States. The disease is characterized by slowly progressive painless lesions on the genital and perineal regions, although subcutaneous granulomas can occur.<sup>2</sup> The lesions are highly vascular with a beefy-red appearance and can bleed. Histopathology demonstrates intrahistiocytic gram-negative rods, consistent with Donovan bodies.<sup>3</sup>

**C.** Noduloulcerative syphilis — Incorrect. Also known as malignant syphilis, noduloulcerative syphilis is a rare manifestation of syphilis, most commonly seen in HIV-infected patients, and presents with necrotic and ulcerative papules and nodules in various stages of development. Lesions respond rapidly to treatment with penicillin.<sup>4</sup>

**D.** Poorly controlled hidradenitis suppurativa — Incorrect. This patient has suffered a complication of longstanding, poorly controlled HS.

**E.** SCC — Correct. Malignant transformation to SCC is a well-established complication of HS and carries a poor prognosis.<sup>5-7</sup> A retrospective study of tissue samples taken from 217 patients with HS showed a prevalence of SCC in 4.6% of patients.<sup>8</sup> The pathophysiology of development of SCC from chronic HS is multifactorial and involves an immune response to ruptured follicles. Malignant transformation predominantly occurs in gluteal and perianal regions rather than axillary regions.<sup>5</sup>

**Question 2: Which of the following is a well-established etiological risk factor for developing SCC in HS?**

- A. Adalimumab use
- B. Recent development of HS

- C. Human papilloma virus (HPV) infection
- D. Increased body mass index
- E. Radical surgery of HS lesions

**Answer:**

**A.** Adalimumab use — Incorrect. There have been case reports in the literature of patients with HS taking adalimumab and other tumor necrosis factor- $\alpha$  antagonists who went on to develop SCC; however, the role of biological immunosuppressants in malignant transformation of HS is an area in need of more research.<sup>9</sup>

**B.** Recent development of HS — Incorrect. Long-standing HS is associated with malignant transformation to SCC.<sup>10</sup>

**C.** HPV infection — Correct. HPV infection is a known risk factor of development of SCC.<sup>8</sup> High-risk HPV strains 16, 18, 31, and others express oncoproteins E6 and E7 which induce DNA damage and aneuploidy. HPV DNA also integrates itself in the host genome, and together these mechanisms contribute to genomic instability that underlie development of SCC.<sup>11</sup>

**D.** Increased body mass index — Incorrect. This is not a known risk factor of malignant transformation from HS to SCC.

**E.** Radical surgery of HS lesions — Incorrect. Radical surgery is not a known risk factor of malignant transformation from HS to SCC. Surgery is a treatment method that provides a chance for cure of SCC.<sup>12</sup>

**Question 3: Development of squamous cell carcinoma (SCC) is a known complication of chronic, long-standing HS with a reported incidence of 1% to 3.4%.<sup>12</sup> Which patient demographic with HS is at greatest risk of developing SCC?**

- A. A female patient with longstanding HS
- B. A female patient with recent-onset HS
- C. A male patient with longstanding HS
- D. A male patient with recent-onset HS

**Answer:**

**A.** A female patient with longstanding HS — Incorrect, male patients with longstanding HS are at greatest risk of developing SCC.

**B.** A female patient with recent-onset HS — Incorrect, female patient with recent-onset HS are at greatest risk of developing SCC.



**C.** A male patient with longstanding HS — Correct. Although HS is 3 times more common in women, between 86% and 100% of cases of HS complicated by SCC are reported to be in men.<sup>8,13</sup> The risk of malignant transformation increases with duration since HS diagnosis and the average time from onset of HS to SCC diagnosis is about 25 years.<sup>10</sup>

**D.** A male patient with recent-onset HS — Incorrect, male patient with recent-onset HS are at greatest risk of developing SCC.

#### Abbreviations used:

HPV: human papilloma virus

HS: hidradenitis suppurativa

SCC: squamous cell carcinoma

#### Conflicts of interest

None disclosed.

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