

# An unusual acneiform presentation representing secondary squamous cell carcinoma of the skin



Paul M. Graham, DO,<sup>a</sup> Logan J. Kolb, BS,<sup>b</sup> Michael Mortazie, DO,<sup>a</sup> James Ramirez, MD,<sup>c</sup> and David Fivenson, MD<sup>a</sup>

Ann Arbor, Michigan and Des Moines, Iowa

**Key words:** acneiform; head and neck squamous cell carcinoma; metastatic squamous cell carcinoma; oral squamous cell carcinoma; squamous cell carcinoma; squamous cell carcinoma metastasis; tongue.

## INTRODUCTION

Metastatic squamous cell carcinoma (SCC) to the skin, also known as secondary SCC of the skin (SSS), is a rare entity that represents advanced disease and carries a poor prognosis.<sup>1,2</sup> The most commonly reported primary sources for metastatic SCC to the skin are head and neck cancers of the larynx, oropharynx, tongue, epiglottis, esophagus, and nasopharynx.<sup>1-4</sup> Of note, SSS may also be caused by primary cancers of the lung, bladder, vulva, and cervix.<sup>3,4</sup> SSS originating from head and neck SCC (HNSCC) typically metastasize regionally to the neck, face, and scalp, while less commonly metastasizing to sites below the neck.<sup>1,2</sup> We present a case of distant SSS of the chest in a patient with a history of 2 invasive SCCs of the oropharynx several years prior.

## CASE REPORT

A 66-year-old man hospitalized for respiratory failure presented in 2015 with lesions on the left upper chest that developed rapidly over 8 days. Medical history was significant for 2 different primary invasive squamous cell carcinomas: floor of the mouth (2007) and right lateral tongue (2013). Notable risk factors included a history of alcohol abuse and current 30-pack-year smoking history but no history of skin cancer. In 2007, a moderately differentiated invasive SCC of the floor of the mouth was identified with coexisting right submandibular lymphadenopathy. Surgical resection of the floor-of-mouth SCC and bilateral supraomohyoid dissection found nodal metastasis with final staging of T1, N2c, M0. Six weeks of adjuvant radiation and 1 cycle

### Abbreviations used:

HNSCC: head and neck SCC  
SCC: squamous cell carcinoma  
SSS: secondary SCC of the skin



**Fig 1.** Left upper chest. Scattered 3- 6-mm firm, violaceous papules and nodules.

of cisplatin chemotherapy induced complete remission. In 2013, an invasive, moderate to poorly differentiated SCC with perineural invasion on the right dorsal tongue was identified with final staging of T1, N0, M0. A partial glossectomy and 6 weeks of adjuvant radiation induced complete remission.

Physical examination found grouped, 3-6-mm, tender, erythematous follicular-based papules on the left upper chest (Fig 1). Examination of the head, neck, trunk, and extremities found no evidence of other cutaneous lesions; however, assessment for local recurrence of oropharyngeal SCC was difficult, as the patient was intubated. A punch biopsy found a nodular infiltrate in the reticular dermis composed of atypical squamous cells containing hyperchromatic

From the Departments of Dermatology<sup>a</sup> and Dermatopathology,<sup>c</sup> St Joseph Mercy Dermatology and Des Moines University.<sup>b</sup>

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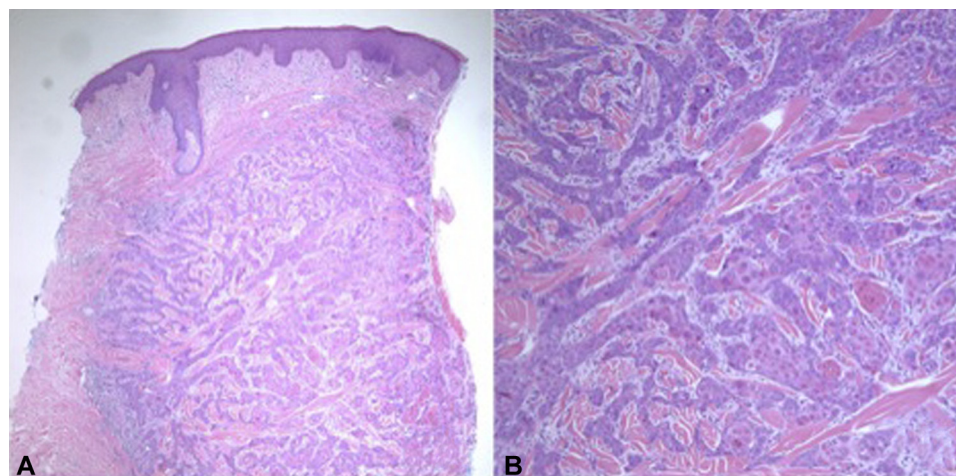
Correspondence to: Paul M. Graham, DO, St Joseph Mercy Hospital, Ann Arbor, Michigan. E-mail: [pmgraham86@gmail.com](mailto:pmgraham86@gmail.com).

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**Fig 2.** Histopathology of SSS. **A**, Nodular infiltrate of atypical squamous cells centered in the reticular dermis with no connection to the overlying epidermis. **B**, Infiltrate composed of atypical squamous cells containing hyperchromatic and pleomorphic nuclei with keratin pearl formation. (**A** and **B**, Hematoxylin-eosin stain; original magnifications: **A**,  $\times 4$ ; **B**,  $\times 10$ .)

**Table I.** Summary of relevant SSS literature

Study	Cases	Summary
Lookingbill et al <sup>3</sup>	420 patients with cutaneous metastatic disease, 36 with SSS	Primary tumor sites of SSS include oral cavity, 44.4% (16/36); lung, 5.6% (2/36); larynx, 16.7% (6/36); bladder, 5.6% (2/36); nasal sinus, 5.6% (2/36); cervix, 2.8% (1/36); esophagus, 2.8% (1/36); and unknown, 16.7% (6/36). Skin lesions from oral cancer metastases were nodular in nature in 85% of cases (17/20).
Pitman et al <sup>1</sup>	2491 HNSCC patients, 19 (0.76%) with SSS	Primary tumor sites of SSS include oral cavity, 47.4% (9/19); oropharynx, 10.5% (2/19); supraglottic, 5.3% (1/19); glottis, 26.3% (5/19); and hypopharynx, 10.5% (2/19). Sites of SSS include neck, 47.4% (9/19); face, 21.1% (4/19); chest, 10.5% (2/19); abdomen, 5.3% (1/19); and multiple sites 15.8% (3/19).
Yoskovitch et al <sup>2</sup>	798 HNSCC patients, 19 (2.38%) with SSS	Primary tumor sites of SSS include oral cavity, 52.6% (10/19)*; larynx, 26.3% (5/19); oropharynx, 10.5% (2/19); hypopharynx, 5.3% (1/19); and paranasal sinus, 5.3% (1/19). Sites of SSS include neck, 63.2% (12/19); scalp, 15.8% (3/19); chest, 10.5% (2/19); and multiple chest/neck sites, 5.3% (1/19).
El Khoury <sup>4</sup>	72 patients with cutaneous metastatic disease, 7 with SSS	Primary tumor sites of SSS include larynx, 57% (4/7); lung, 14.3% (1/7); oropharynx, 14.3% (1/7); and vulva 14.3% (1/7). Site of SSS include neck, 28.6% (2/7); chest, 28.6% (2/7); arm, 14.3% (1/7); back, 14.3% (1/7); and pubic area, <sup>†</sup> 14.3% (1/7)
Total	81 patients with SSS	Primary tumor sites of SSS include oral cavity, 35.4% (35/99) <sup>‡</sup> ; oropharynx, 5.1% (5/99); larynx, 24.2% (24/99) <sup>§</sup> ; lung, 3.0% (3/99); bladder, 2.0% (2/99); cervix, 1.0% (1/99); nasal sinus, 3.0% (3/99); esophagus, 1.0% (1/99); and unknown 6.1% (6/99) Sites of SSS include neck, 53.3% (24/45); face, 8.9% (4/45); scalp, 6.7% (3/45); chest, 15.6% (7/45); upper extremity, 2.2% (1/45); multiple unspecified sites, 6.7% (3/45); abdomen, 2.2% (1/45); back, 2.2% (1/45); and pubic area 2.2% (1/45)

\*Of the 10 oral cavity cancers, 50% (5/10) derived from floor of mouth, 40% (4/10) from tongue, and 10% (1/10) from hard palate.

<sup>†</sup>Regional metastasis from vulvar cancer.

<sup>‡</sup>Includes lesions affecting the tongue.

<sup>§</sup>Includes the supraglottic, glottis, and hypopharynx cases from the Pitman et al<sup>1</sup> and Yoskovitch et al<sup>2</sup> studies.

and pleomorphic nuclei, keratin pearls, and no connection to the epidermis, consistent with metastatic SCC (Fig 2). Surgical excision was postponed

until the patient was no longer ventilator dependent, but unfortunately the patient died 2 weeks after the diagnosis of respiratory failure.

## DISCUSSION

Although primary SCC of the skin is a well-known entity, metastatic SCC to the skin from visceral and mucocutaneous sites, otherwise known as SSS, is a rare occurrence and portrays a poor prognosis.<sup>1</sup> SSS most commonly occurs in the setting of invasive HNSCC, especially those affecting the oropharynx.<sup>3,4</sup> Oropharyngeal SCC may be on the rise secondary to an increased incidence of human papilloma virus, alcohol, and tobacco-related oral cancers.<sup>2,5</sup> Approximately 11% of HNSCCs have distant metastases, with the most common sites being the lungs, bone, liver, and skin.<sup>6-8</sup> Probert et al<sup>6</sup> and Papac et al<sup>8</sup> found that HNSCC metastasized to the skin in only 14% (n = 96) and 13% (n = 52) of cases with distant metastases, respectively, but metastases below the neck are exceptionally rare.<sup>2,3</sup> The papular lesions on our patient's left upper chest most likely represented distant metastases from the oral cavity given the patient's clinical history and the marked similarity in histology of the new lesions when compared with the oropharyngeal SCC histology in 2007 and 2013.

Cutaneous metastasis most commonly arises from adenocarcinomas (especially those of the breast, lung, and colon) and have a highly variable presentation.<sup>3,4</sup> SSS most commonly presents as single or multiple painless nodules that may be ulcerated or inflammatory in appearance.<sup>3</sup> Our patient presented with a unique acneiform eruption on his chest, which carries a wide differential diagnosis including acne vulgaris, chloracne, folliculitis, halogenoderma, and certain drug eruptions (cyclosporine, antiepileptic drugs, and systemic corticosteroids).<sup>9</sup> In regional cases of SSS, metastases are often localized to the surgical incision site of the primary tumor, which occurred in 62.5% (n = 8) of laryngeal cancers and 55.6% (n = 18) of oral cavity cancers cases in one study.<sup>3</sup> In our review of SSS in the literature, the oral cavity was the most common primary malignancy site, whereas the most common location of SSS was in the head and neck (Table 1). Therefore, further workup of patients with SSS should initially be directed at mucocutaneous sites of the head and neck followed by the lung, bladder, vulva, and cervix if the initial workup is negative.<sup>3,4</sup>

As mentioned previously, the prognosis of SSS is poor. A study by Pitman et al<sup>1</sup> found that patients with SSS originating from the head and neck had a 90% mortality rate by a median time of 3 months, whereas Yoskovitch et al<sup>2</sup> found an average survival

of 7.2 months in a similar patient population. Treatments for SSS include external beam radiation, surgical excision, and chemotherapy.<sup>1</sup> Because of the poor prognosis, patients are often placed on palliative care measures.<sup>1</sup> However, the only treatment with proven efficacy to prolong life and improve quality of life is surgical excision of SSS.<sup>10</sup>

## CONCLUSION

Metastatic SCC to the skin most often occurs in the setting of HNSCC and carries a poor prognosis. It often presents as nodular lesions in the region of the primary cancer that may become inflamed or ulcerated but can have a variety of clinical presentations including acneiform eruptions, as in our case. The oral cavity is the most common primary malignancy site for development of SSS, whereas the most common location of SSS is in the head and neck. Treatment is often palliative using radiation therapy, chemotherapy, and surgical excision of secondary skin lesions; however, surgical excision is the only therapy that has shown improved survival and quality of life.

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