A 54-year-old man sought medical attention for a growth on his right cheek that had been present for three months. The growth began as a small, brown “pimple” that gradually increased in size over time. Physical examination revealed a 9 mm well-circumscribed erythematous nodule with a hemorrhagic crust. On dermoscopy, the lesion was completely vascular appearing, with no pigment visualized. A clinical diagnosis of pyogenic granuloma was made. The lesion was biopsied and histopathologic examination revealed a 2.8 mm thick, Clark level IV, ulcerated, amelanotic nodular melanoma. Because the literature contains reports of nodular melanoma mimicking the presentation of a pyogenic granuloma, all such lesions should be biopsied for histopathologic diagnosis.

**Answer:** Amelanotic melanoma

**Introduction**

The “ABCD” (asymmetry, borderer irregularity, color variation, diameter greater than 6 mm) criteria were developed in order to raise awareness among the lay public and primary care providers of the common features of superficial spreading melanoma [1]. Often nodular melanoma may present without these features. On occasion, nodular amelanotic melanoma may be difficult
clinically to distinguish from pyogenic granulomas or other benign vascular neoplasms [2, 3]. This report describes a case of nodular amelanotic melanoma that clinically and dermoscopically mimicked the presentation of a pyogenic granuloma.

**Case report**

A 54-year-old man sought medical attention for a growth on his right cheek that had been present for three months. The growth began as a small, brown “pimple” that gradually increased in size over time. In the two weeks prior to his appointment, the site bled daily after showering. The patient denied any prior history of skin cancer and family history of skin cancer.

Physical examination revealed a 9 mm well-circumscribed erythematous nodule with a hemorrhagic crust located over the right cheek (Figure 1). On dermoscopy, the lesion was completely vascular appearing, with no pigment visualized. A clinical diagnosis of pyogenic granuloma was made.

**Figure 2**

*Figure 2. Biopsy in low magnification shows an ulcerated nodular hemorrhagic tumor.*

**Figure 3**

*Figure 3. Tumor is composed of pleomorphic epitheliod cells with no pigments within a vascular stroma.*
The neoplastic cells show large nuclei with prominent nucleoli and numerous mitotic figures. Tumor cells are strongly positive for S-100 immunostain.

Figure 4
Figure 5

The papule was biopsied and histopathologic examination revealed a 2.8 mm thick, Clark level IV, ulcerated amelanotic nodular melanoma (Figures 2 through 6). The neoplastic cells were positive for S-100, Melan-A, and MITF with a high proliferative activity on Ki 67 immunostains. The tumor cells were negative for HMB-45, CK AE 1/3, CK 20, SMA, Factor VIII, CD 34 and CD 68.

The patient underwent a wide excision of the lesion and sentinel node biopsy, as well as flap rotation for reconstruction. Preoperative metastatic work up with a PET CT failed to show evidence of metastatic disease outside of the neck. Intraoperative sentinel node mapping identified two suspicious nodes in the high jugular chain at the level of the posterior belly of the digastrics. However, histopathologic examination of these nodes did not show metastatic melanoma. The disease was staged as T3b N0 M0 malignant melanoma of the right cheek. Presently, the patient is being followed closely and is without evidence of recurrence 13 months post-operatively.

Discussion

The “ABCD” acronym (asymmetry, boarder irregularity, color variation, and diameter greater than 6 mm) was devised in 1985 in order to aid the lay public and primary care physicians of the common clinical features of melanoma and to provide simple parameters to guide the necessity of further evaluation of the lesion by a specialist [1]. A fifth characteristic, “evolving,” referring to lesions that have changed over time, has prompted some to advocate the expansion of the mnemonic to “ABCDE.” It is important to note that melanoma may not present with all of these characteristics. Rather, it is in combination that these features increase suspicion of malignancy [1].
Whereas the “ABCD” criteria have been shown by three studies to be a valuable clinical predictor of melanoma, the criteria are intended to describe only a subset of melanomas, particularly superficial spreading melanoma [1]. These criteria may exclude many cases of nodular melanoma. Nodular melanoma, especially early in its presentation, may lack asymmetry, border irregularity, and color variation; it may have a diameter less than 6 mm. However, all subtypes of melanoma, including both nodular and superficial spreading melanoma, frequently change or “evolve.” This change is not limited to size, but also includes shape, symptoms such as itching or tenderness, surface changes such as bleeding or ulceration, and shade of color changes. Because of the significance of the evolution of a lesion as a feature of all melanoma subtypes, the expansion of the well-known acronym to “ABCDE” has been advocated in order to aid earlier identification and removal of potentially curable malignancies [1].

Pyogenic granulomas are common, acquired, benign lesions resulting from capillary proliferation. Whereas the exact pathophysiology remains unknown, low-grade local inflammation, trauma, hormonal factors, drugs, microscopic arteriovenous malformations, viral oncogenes, and the production of angiogenetic growth factors may play a role in development of these lesions [2, 3].

Pyogenic granulomas usually develop painlessly over the course of a few weeks. They most commonly present as solitary, erythematous, papules or nodules ranging in size from a few millimeters to several centimeters. The most frequent location is on the head and neck, specifically the cheek, lips, and gingival and nasal mucosa. Pyogenic granulomas often bleed spontaneously or after minor trauma, and may erode or ulcerate.

Removal of a pyogenic granuloma is most commonly performed by excision or curettage with cauterization. Because the literature contains some reported cases of melanoma mimicking the presentation of pyogenic granulomas [4, 5], biopsy and histopathologic examination of all such cases should be undertaken.

Conclusion

This report details a case of nodular melanoma that strongly resembled a pyogenic granuloma. Because the literature contains reports of nodular melanoma mimicking the presentation of a pyogenic granuloma, all such lesions should be biopsied for histopathologic diagnosis. Whereas the “ABCD” criteria are both sensitive and specific clinical indicators of melanoma when a lesion satisfies multiple criteria [1],
our patient presented with only one (diameter greater than 6 mm). If “evolution” is considered in the context of our patient’s presenting lesion, our suspicion for melanoma is increased because the lesion rapidly changed in size and surface characteristics, manifested by ulceration and bleeding. Early biopsy of changing lesions may lead to a better prognosis for atypically presenting malignancies; the prognosis of melanoma is largely based on the stage, including depth and location of the primary tumor, as well as presence and extent of nodal and metastatic disease [6].

References


