Acta Dermatovenerologica Alpina, Pannonica et Adriatica 2026; doi: 10.15570/actaapa.2026.1

Case report

Giant cutaneous melanoma presenting with hemorrhagic complications

Klemen Lovšin,[1,2]✉ Ana Plesničar,[3] Romi Cencelj-Arnež,[4] Alenka Matjašič,[5] Boštjan Luzar[5]

[1]*Department of Plastic, Reconstructive, and Aesthetic Surgery and Burns, Ljubljana University Medical Center, Ljubljana, Slovenia*
[2]*Faculty of Medicine, University of Ljubljana, Ljubljana, Slovenia*
[3]*Domžale Health Center, Domžale, Slovenia*
[4]*Department of Surgical Oncology, Institute of Oncology, Ljubljana, Slovenia*
[5]*Institute of Pathology, Medical Faculty, University of Ljubljana, Ljubljana, Slovenia*

Abstract

Giant cutaneous melanoma is a rare presentation characterized by significant morbidity and mortality. We report the case of a 45-year-old male presenting with an acute life-threatening hemorrhage from a giant melanoma on his right thigh. The tumor, measuring 90 × 50 × 85 mm, was immediately excised under local anesthesia to achieve hemostasis. The patient exhibited acute anemia and required postoperative blood transfusion. Histopathological analysis confirmed superficial spreading melanoma with a Breslow thickness of 85.0 mm and extensive ulceration. Genetic testing identified critical mutations, including $BRAF^{V600D}$ and alterations involving the *ARID2*, *CDKN2A/B*, *AKT3*, *PTEN*, and *HRAS* genes. Remarkably, no metastatic disease was detected upon thorough diagnostic evaluation. The patient received adjuvant immunotherapy with PD-1 inhibitors. Six months after the procedure, he remains free of metastasis. This case underscores the urgent need for timely recognition and intervention in giant melanoma with acute complications. It also highlights the effectiveness of modern adjuvant therapies in improving prognosis.

Keywords: dermatologic surgery, dermatopathology, melanoma, skin cancer, tumor

Received: 09 April 2025| **Returned for modification**: 1 May 2025 | **Accepted**: 2 July 2025

Introduction

Cutaneous melanoma arises from the malignant transformation of melanocytes. Although the majority of melanomas are managed effectively with local excision and routine follow-up, advanced cutaneous melanomas can pose a significant oncologic challenge (1).

Melanoma is the fifth most common type of cancer in the European Union (EU). In 2020, it accounted for 4% of all newly diagnosed cancers and 1.3% of all cancer-related deaths in the EU (2). For both sexes combined, survival has improved significantly over the last 20 years for skin melanoma (by 12 percentage points, from 79% to 91%). This improvement is due to earlier diagnosis and advances in systemic treatment (3).

Giant cutaneous melanoma is a rare entity due to delayed presentation, which might be the consequence of neglect or psychiatric disease. This type of melanoma is usually associated with extensive metastatic disease (4–6).

We present a unique case of giant melanoma with active bleeding that required immediate surgical management due to acute blood loss and anemia.

✉ klemen.lovsin@gmail.com

Case report

A 45-year-old male patient presented to the emergency department with acute bleeding from a skin tumor on his right thigh. Bleeding of a smaller extent had been ongoing for approximately 1 week, but on the day of admission the patient accidentally struck the tumor, resulting in significantly worsened and uncontrolled bleeding. The patient reported that the tumor had been present for several months, with a previous episode of bleeding occurring approximately 1 month earlier. The patient had no known comorbidities, ongoing therapy, or allergies.

On gross examination, a large skin tumor measuring 90 × 50 × 85 mm with a pedunculated base was observed (Fig. 1). Active bleeding was noted from the tumor (Fig. 2).

The patient underwent wide excision of the tumor with a 2 cm clinical margin under local anesthesia. After hemostasis was achieved, the wound was primarily closed. The excised tissue was sent for histopathological evaluation.

A few hours before the procedure, the patient's complete blood count showed hemoglobin (Hb) 83 g/l (reference: 130–170 g/l), erythrocytes 2.58 × 10^{12}/l (reference: 4.5–6.0 × 10^{12}/l), hematocrit 0.234 (reference: 0.40–0.50), mean corpuscular volume (MCV) 90.7 fl (reference: 80–100 fl), mean corpuscular hemoglobin (MCH) 32.2 pg (reference: 27–33 pg), and mean corpuscular hemoglobin concentration (MCHC) 355 g/l (reference: 320–360 g/l)—consistent with normocytic, normochromic anemia.

A few hours after the procedure, these values had decreased further: Hb 73 g/l, erythrocytes 2.2 × 10^{12}/l, hematocrit 0.20, with stable MCV 90.9 fl and MCH 33.2 pg, consistent with acute blood loss in the preoperative and perioperative setting.

Following the surgery, the patient was admitted to the plastic surgery department, where he received two units (285 ml and 270 ml) of concentrated erythrocytes. On the following day, after transfusion, Hb increased to 88 g/l, indicating appropriate response, and he was discharged from the hospital.

At a 3-week follow-up, Hb had risen to 101 g/l, but with a shift toward microcytic indices: MCV 85.9 fl, MCH 27.4 pg, MCHC 319 g/l, and 2.4% microcytes (normal: < 1%)—suggestive of developing iron deficiency, likely due to iron depletion following acute hemorrhage and limited replenishment.

Dressing of the wound was continuously performed by a general practitioner. The patient returned to the plastic surgery outpatient clinic 9 days after surgery due to redness and discharge from the postoperative wound. Examination revealed a small wound dehiscence with delayed healing and infection. A combination of amoxicillin and clavulanic acid was prescribed. At the next dressing in the outpatient clinic 5 days after the antibiotic was prescribed, the wound had no signs of infection but delayed healing was still present.

Histological analysis confirmed a superficial spreading melanoma in a vertical growth phase, extending into the subcutis (Breslow thickness 85.0 mm, Clark level V). The tumor was extensively ulcerated (ulceration diameter 25 mm) and was associated with brisk mitotic activity (18 mitoses per mm^2). No evidence of regression, perineural invasion, or lymphovascular invasion was observed. No preexisting melanocytic nevus was identified. The tumor was excised completely with wide surgical margins of at least 10 mm (Fig. 3).

DNA next-generation sequencing confirmed the presence of *BRAFV600D* as a driver of genetic aberration. Additional changes included *ARID2* mutation, deletion of the *CDKN2A* and *CDKN2B* genes, and amplification of the *AKT3* gene. Furthermore, deletion at the 10q23.31 region of the *PTEN* gene and at the 11p15.5 region of the *HRAS* gene was also identified.

On further examination after admitting the patient to the oncologic surgeon, there was a palpable node in the right inguinal region. The same day, fine-needle aspiration was performed, and cytology was consistent with reactive lymphadenitis. The patient also underwent positron emission tomography–computed tomography (PET-CT), which did not detect any local or distant metastases. There was only a focal area of activity in the tumor region, corresponding to delayed wound healing and an enlarged lymph node in the right inguinal region.

The case was presented at the institutional multi-disciplinary tumor board. It was decided to give the patient adjuvant pembrolizumab.

Six months after the presentation at the emergency department the patient was alive, without metastases detected. He is currently undergoing adjuvant immunotherapy with programmed cell death-1 (PD-1) inhibitors.

Discussion

Giant melanoma is a rare cutaneous tumor with high morbidity and mortality rates, which is mostly attributed to the late detection of disease. Most data on giant melanoma are based on case reports and literature reviews. Although public health campaigns and improved awareness have led to earlier detection and reduced mortality, the incidence of melanoma continues to rise globally (1, 3).

There is no uniform definition of giant melanoma in the literature; some authors define it as a tumor with a diameter exceeding 50 mm, whereas others use a threshold of 100 mm (6–8). The diameter of this type of tumor has been reported up to 200 mm, with a Breslow thickness of 0.45 mm to 100 mm (9). In our case, the size of the excised tumor was 90 × 50 × 85 mm.

Such melanomas usually have a poor prognosis due to delayed presentation, which is a consequence of multiple factors. Some reasons include self-neglect, discontinuation of wound care within the community, misconceptions and lack of knowledge about the tumor's etiology, related psychiatric conditions, and failure of patients and physicians to conduct annual skin examinations (1, 10). Patients noticing changes in a pigmented lesion wait on average a year before they seek medical assistance (11). In this case, the patient believed that the tumor would decrease in size over time, and so he delayed seeking medical attention.

The literature cites various reasons for patients seeking medical attention, including occasional light bleeding, shortness of breath, pain, weight loss, ulcerations, night sweats, palpitations, discomfort, and fatigue (12–16). Chronic anemia has been observed in large cutaneous tumors. To our knowledge, presentations of giant cutaneous melanoma with acute hemorrhage requiring urgent surgical intervention and transfusion are exceedingly rare and sparsely documented in the literature.

In our case, the patient presented with superficial spreading melanoma, which is the most common type of melanoma, accounting for 70% of cases (17).

Several cases of primary giant cutaneous melanomas without metastatic spread have been reported in the literature (4). Our patient is among these rare instances because diagnostic evaluations have not detected any metastases to date.

Because only a few giant melanomas have been reported, there is limited understanding of whether they require distinct management approaches compared to thinner melanomas (10). The main treatment of melanoma is wide surgical resection and sentinel lymph node biopsy (SNB). In our case, local and distant metastatic disease was not detected by PET/CT, and the patient received immunotherapy. It was decided not to perform SNB because there was delayed healing of the primary tumor and fine-needle aspiration did not contain any melanoma cells. There has been an increasing trend in adjuvant trial design toward omission of SNB, despite the evidence that SNB for patients with clinical stage II melanoma is a prognostic and therapeutic tool in a subset of patients (18, 19).

Based on the results of the KEYNOTE-716 study—a double blind, randomized, phase 3 study that demonstrated a significant reduction in disease recurrence or death (hazard ratio 0.61, confidence interval 0.45–0.82) with toxicity similar to that seen in prior trials in high-risk melanoma—pembrolizumab received FDA approval in 2021 for adjuvant treatment of high-risk melanoma defined as stage IIB or IIC melanoma following complete resection (20). Our patient, who was considered to have stage IIC melanoma, received pembrolizumab due to high-risk features and in accordance with current guidelines and the results of the KEYNOTE-716 study.

Conclusions

This case highlights the rare and potentially life-threatening presentation of giant cutaneous melanoma with acute hemorrhage, emphasizing the necessity for prompt recognition and immediate surgical intervention to manage severe bleeding and prevent significant morbidity. Due to delayed presentation, giant melanomas

often have a poor prognosis; however, in this unique instance, despite the considerable tumor size and depth, no metastatic spread was detected. Early identification, public education on recognizing suspicious skin lesions, and timely medical consultations remain crucial. Given the promising outcomes observed with adjuvant immunotherapy in high-risk melanoma patients, such treatments may offer substantial benefit and should be considered in similar cases to enhance prognosis and survival.

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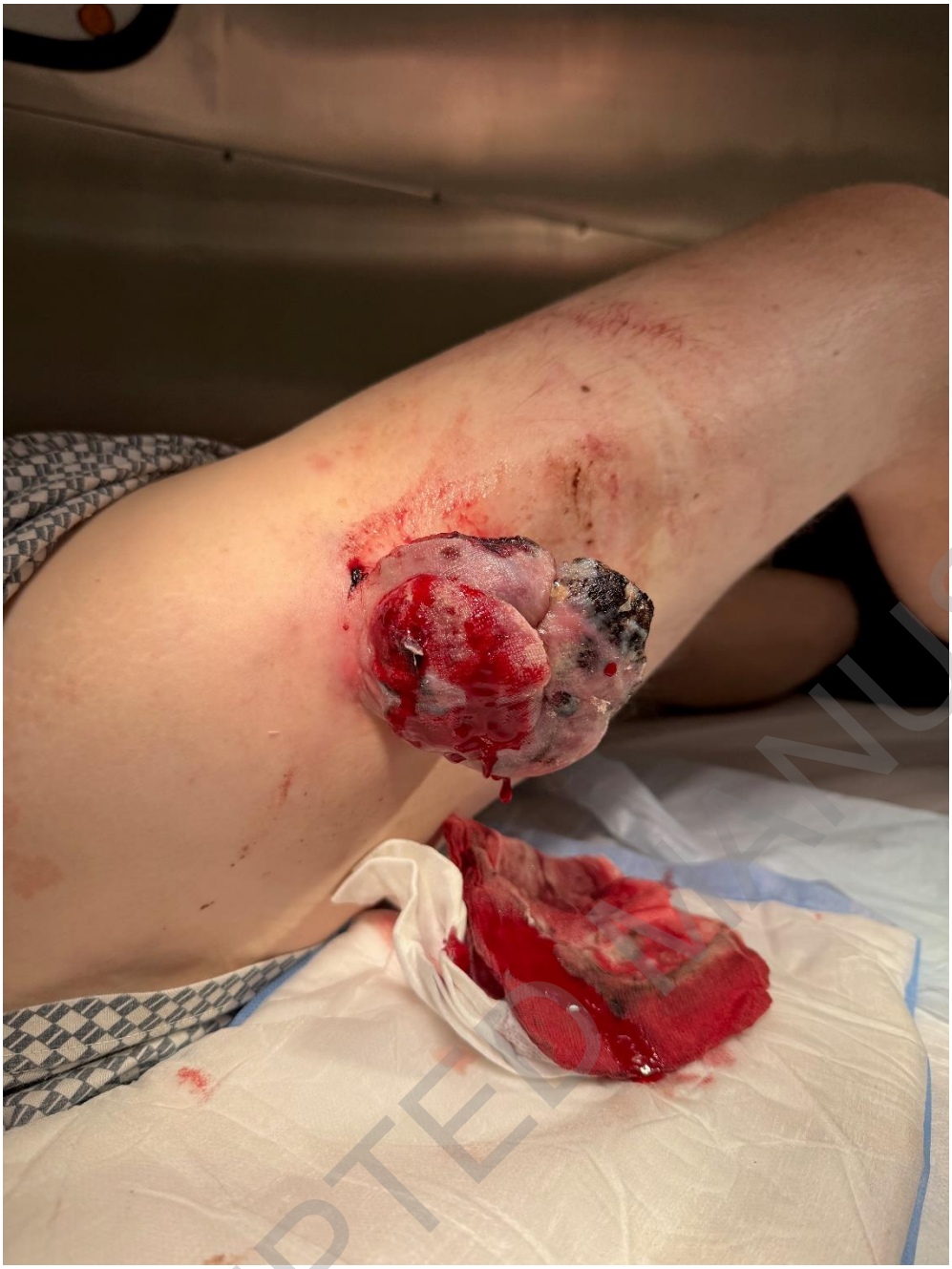

Figure 1. Large tumor on the right thigh with active bleeding.

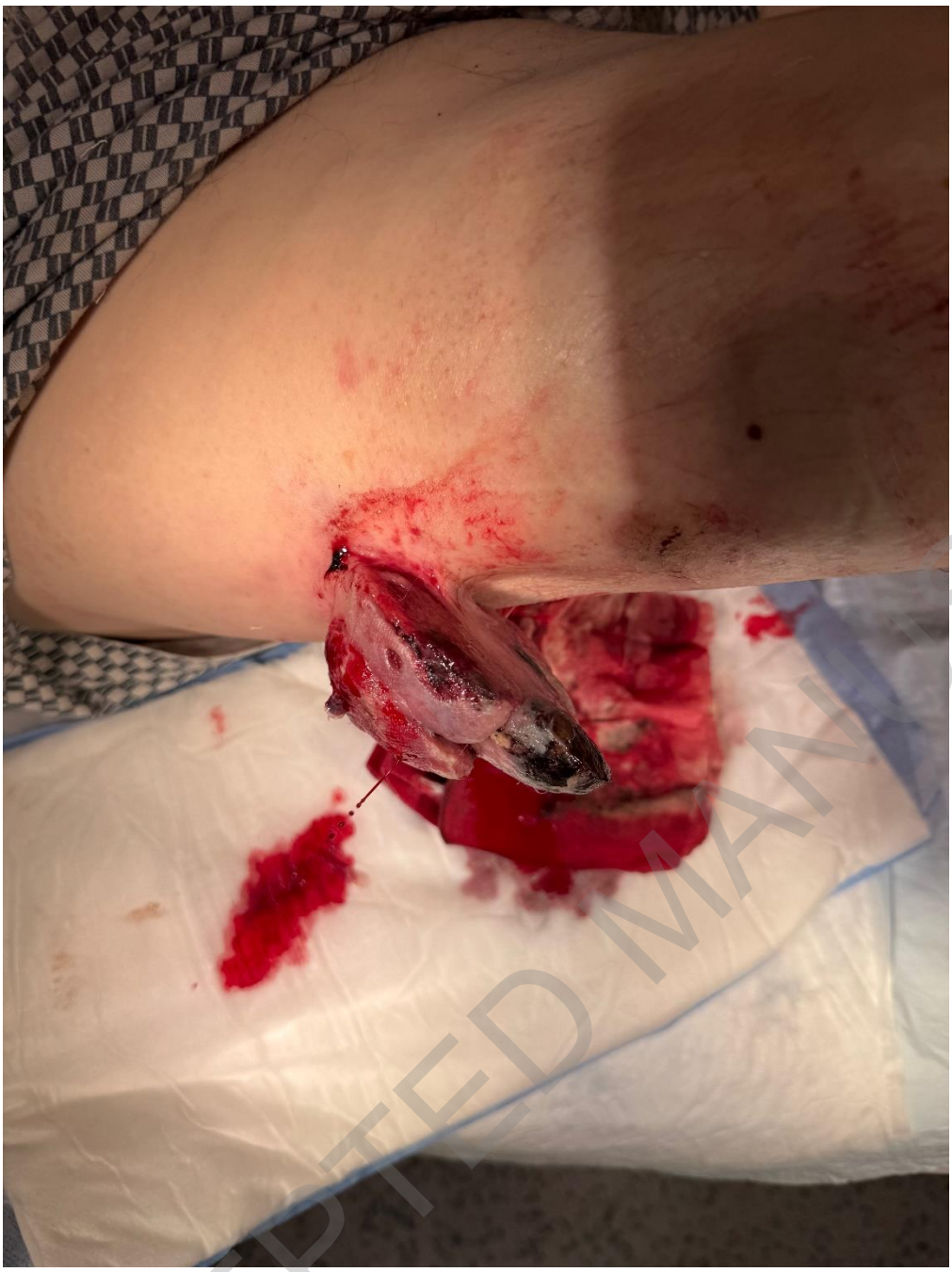

Figure 2. Large tumor on the right thigh with active bleeding.

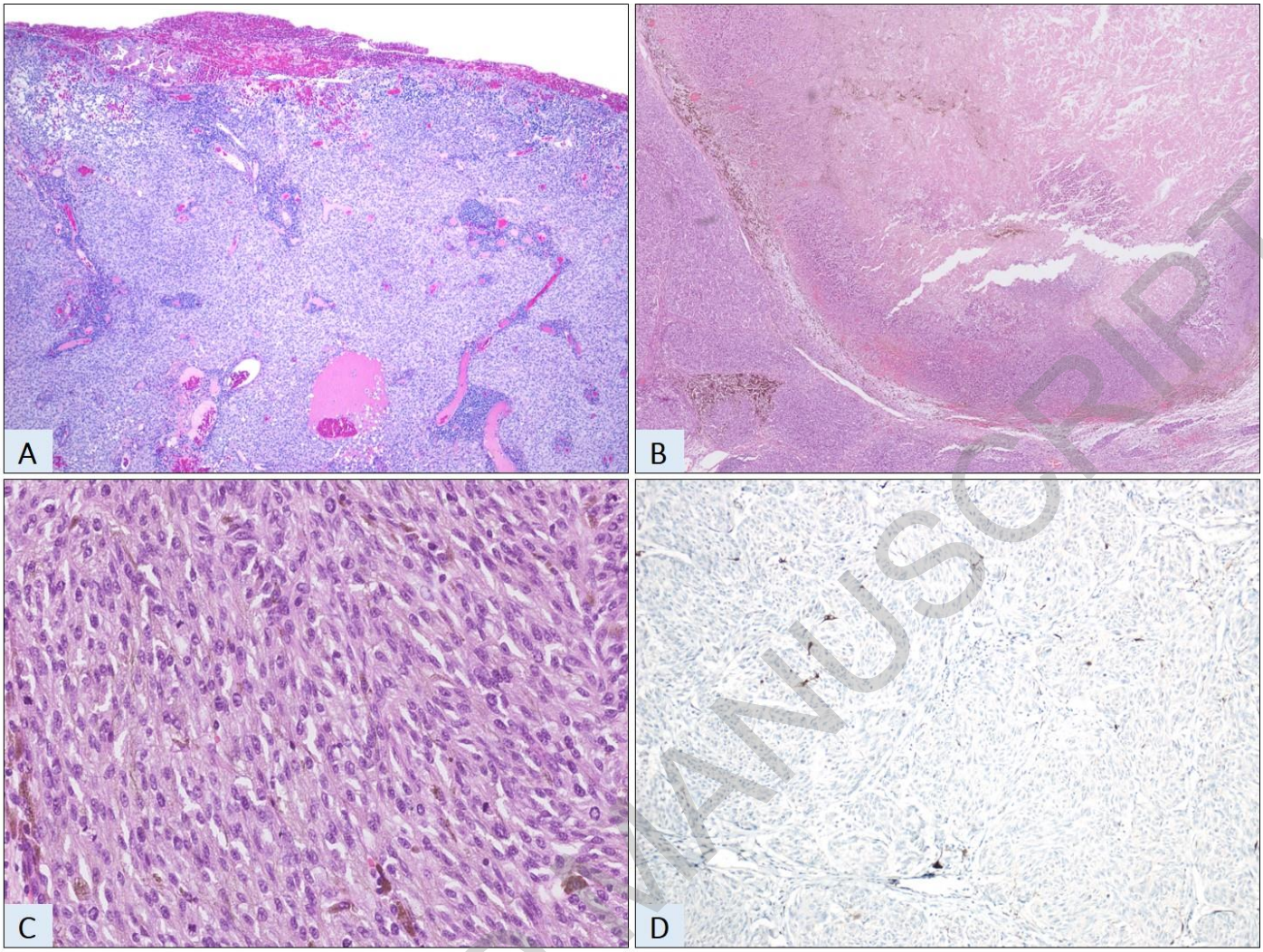

Figure 3. Giant melanoma in vertical growth phase: A) extensively ulcerated tumor; B) large areas of tumoral necrosis in the right upper part of the photo; note also focal hemorrhage; C) brisk mitotic activity; D) negative immunohistochemistry for p16 correlates with *CDKN2A* and *CDKN2B* deletion.