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Differential diagnosis of a painful swelling lesion in the facial region: A case report of Merkel cell carcinoma

KEYWORDS

Merkel cell carcinoma;
Dental emergency

Patients can present to the emergency department (ED) with swelling and pain in the head and neck region for a variety of reasons, including caries or pulp-related disease, periodontal disease, cellulitis, skin conditions, subcutaneous emphysema, trauma, or benign or malignant tumors.^{1,2} Differential diagnosis requires physical or laboratory examinations, history taking, and imaging studies. Rare causes, such as tumors with redness and swelling, can pose diagnostic challenges and may lead to misjudgment by ED physicians. This report presented a case of a patient who visited the ED twice within 20 days because of unresolved swelling and pain and was eventually referred to the oral and maxillofacial surgery team for further evaluation and inpatient care.

A 93-year-old woman presented to our ED with persistent painful swelling in the right cheek. Cough and urinary difficulties were also noted. On her first visit, blood tests and computed tomography (CT) were performed (Fig. 1A and B). An elevated infection index and a clinical impression of facial cellulitis were noted. Accordingly, the patient was given antibiotics, analgesics, and supportive care, and outpatient follow-up was arranged. Despite daily antibiotic treatment, the patient returned after 10 days because of worsening pain and was referred to the oral and maxillofacial surgery team. Follow-up examination revealed moderate redness, swelling, and telangiectasias of the right

cheek (Fig. 1C). A low infection index, intact oral mucosa, and an absence of gingival or vestibular inflammation were noted. Repeat CT revealed no acute infection or abscess (Fig. 1D). A solid tumor was suspected, with bilateral noninfectious cervical lymphadenopathy. A biopsy was performed the same day after discussion with the patient's family, and she was admitted for hydration and analgesics. The patient's symptoms improved. Three days later, she was discharged. Two days later, pathology confirmed Merkel cell carcinoma (MCC; Fig. 1E, F, and G), and the patient was referred to oncology for chemotherapy.

Malignant tumors, which can cause local redness and pain, are rarely seen in emergency care. Squamous cell carcinoma (SCC), the most common malignancy in the oral and maxillofacial region, typically involves the mucosa.³ In the reported case, SCC was not suspected because the patient had an intact oral mucosa. Basal cell carcinoma is the most common skin cancer, whereas MCC is rare and aggressive. Both carcinomas originate from the skin, and MCC was considered in the differential diagnosis. In 2020, the incidence of MCC was 0.05 per 100,000 individuals. MCC most often occurs on sun-exposed skin and rarely occurs in the oral cavity.^{4,5} Most dental-related facial infections can be traced to a history of toothache or gingival or vestibular swelling. When tumor-related pain is suspected, prompt biopsy is crucial for early diagnosis and treatment planning.

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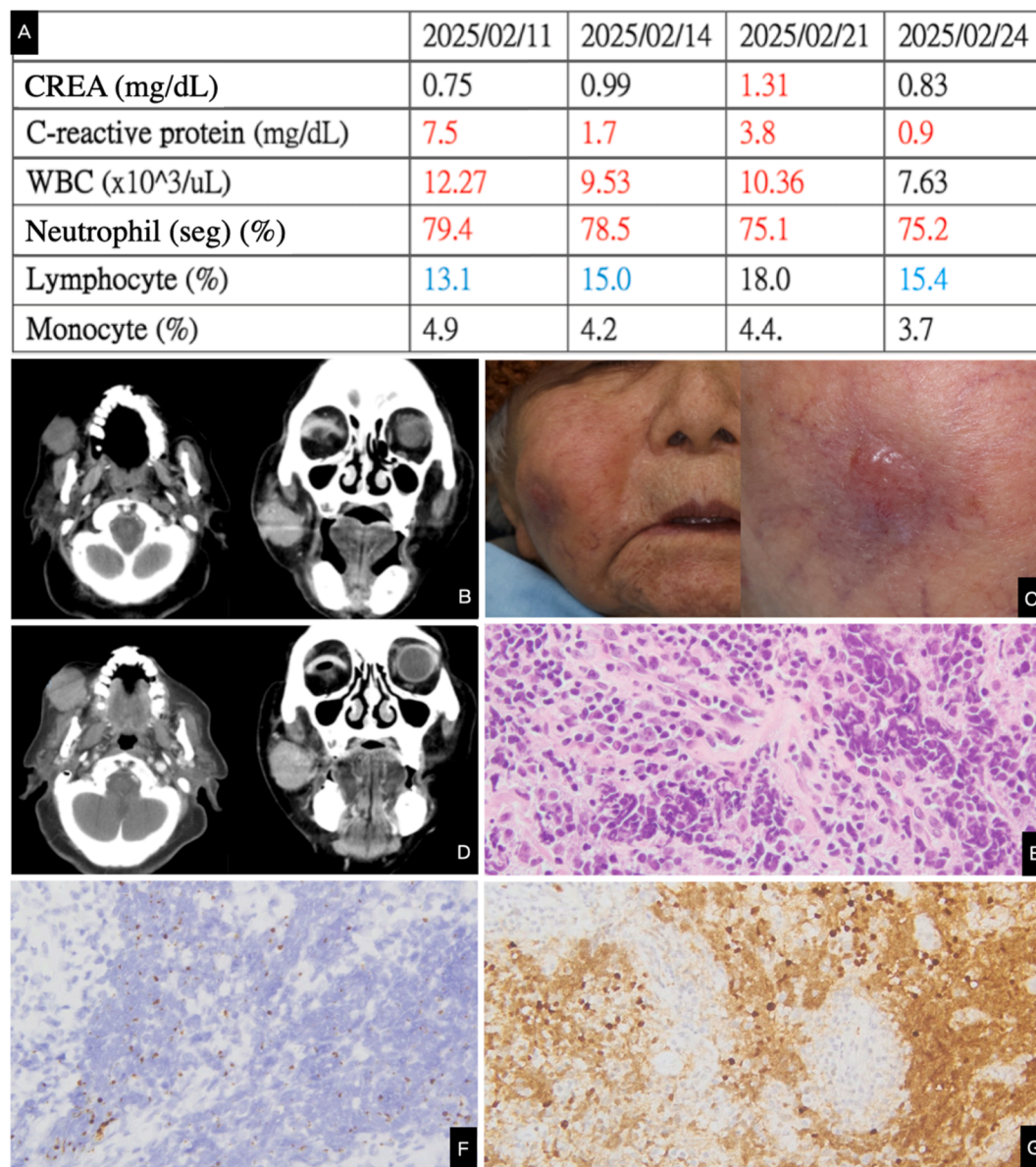


Figure 1 Blood test results, computed tomography (CT) image, clinical photographs, and histological photomicrographs. (A) Blood test results upon emergence department (ED) admission. Abbreviations: CREA, Creatinine. (B) Axial and coronal view CT image obtained upon admission to the ED revealed a solid mass lesion centered in the subcutaneous tissue of the right cheek. (C) Moderate redness, swelling, and telangiectasias of the right cheek. (D) Repeated CT image 10 days after the initial scan. (E) Specimens were subjected to histopathologic examination. H&E stain revealed scattered lymphocytic infiltrates ($\times 400$). (F) Cytokeratin 20 staining showed a perinuclear dot-like pattern ($\times 400$). (G) Insulinoma-associated protein 1 highlighted strong nuclear staining in tumor cells, consistent with neuroendocrine carcinoma such as Merkel cell carcinoma ($\times 200$).

Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

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