

Soft tissue lesion of the oral cavity

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1 | CASE REPORT

A 78-year-old man presented to the oral surgery clinic with painful gingival swelling and jaw pain for 3 months. He had a history of colorectal cancer, which was diagnosed 6 months earlier, for which he had undergone surgery and was treated with adjuvant chemotherapy. The impacted third molar was removed one month earlier because of complaints in the right side retromolar region. However, the pain persisted. The patient never smoked and consumes one unit of alcohol a day. On examination, a large tender bleeding exophytic mass was seen in the right lower posterior molar region (Figure 1). The orthopantomogram (Figure 2) shows osteolysis distally from tooth 48 and even more osteolysis 6 months later after the removal of the wisdom tooth #48 (Figure 3).

2 | QUIZ

Which of the following diagnoses is the most probable diagnosis based on patient's history and physical examination?

- A Oral squamous cell carcinoma
- B Osteomyelitis of the mandibula due to an opportunistic infection in an immunocompromised host
- C Oral metastasis
- D Orofacial granulomatosis

3 | DIAGNOSIS

Answer C: Oral metastasis. A biopsy was performed, and histopathological examination demonstrated a poorly differentiated adenocarcinoma of colorectal origin.

4 | DISCUSSION

A biopsy was performed, and histopathological examination demonstrated a poorly differentiated adenocarcinoma of colorectal origin. Computed tomography showed osteolysis of the right mandible, abdominal lymphadenopathy, and peritoneal depositions.

Metastasis in the oral cavity is rare, and <10% is of colorectal origin (Kirschnick et al., 2022). It is mostly observed in the jaws, particularly in the posterior mandible. One third of all oral metastatic lesions are located in the soft tissue, usually gingival. The prognosis of metastasis in the oral cavity is poor with a 3-year and 5-year survival rate of, respectively, 17.7% and 7.3% (Gatalica et al., 2016).

Both the primary tumor and metastasis appeared to be microsatellite instability-high (MSI-H)/mismatch repair deficient (dMMR). DNA mismatch repair is used in normal cells to correct errors which can occur during DNA replication. Loss of function of mismatch repair (MMR) leads to a hypermutable state of cells also referred to as microsatellite instability (MSI) (Kirschnick et al., 2022).

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FIGURE 1 Clinical presentation during oral examination

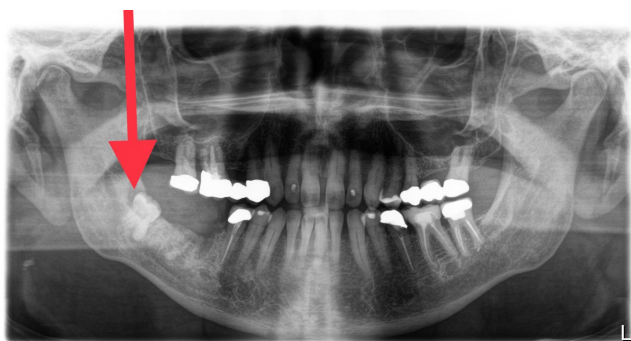


FIGURE 2 Orthopantomogram prior to removal #48

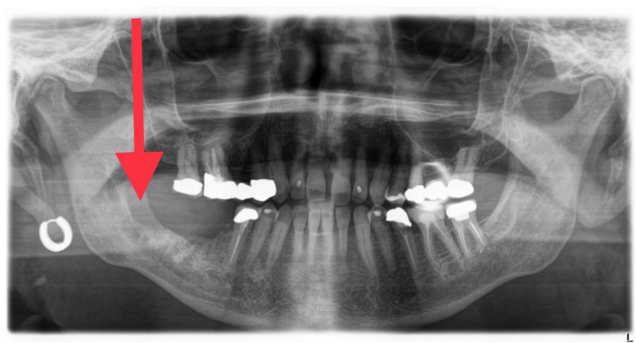


FIGURE 3 Orthopantomogram 6 months after removal #48

MSI-H colorectal cancer (CRC) accounts for 15% of all CRC, and MSI-H/dMMR tumors are less responsive to conventional chemotherapy (André et al., 2020). Previously, it has been reported that MMR-deficient cancers make them sensitive to immune checkpoint

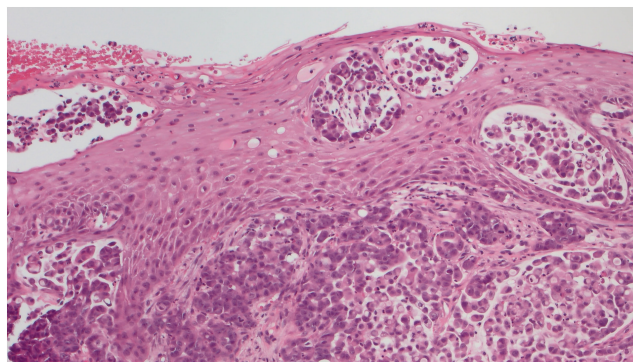


FIGURE 4 Oral biopsy. Mucosal and submucosal localization of metastatic colorectal adenocarcinoma. H&E stain; original magnification 100x

blockade, regardless of the cancers' tissue of origin (Le et al., 2017). Targeted immunotherapy with programmed death 1 (PD-1) blockade has emerged as highly effective therapy for patients with MSI-H/dMMR metastatic CRC (Sahin et al., 2019). A recent study shows PD-1 blockade, with pembrolizumab, led to significantly longer progression-free survival than chemotherapy when received as first-line therapy for MSI-H/dMMR metastatic colorectal cancer (Kirschnick et al., 2022).

The patient was treated with first-line PD-1 inhibitor pembrolizumab.

5 | DIAGNOSIS IMAGE

Figure 4.

6 | OUTCOME

During therapy, the pain in the right mandibular region diminished and eventually disappeared after three courses of pembrolizumab with complete regression of the oral metastasis. Restaging one year after initiation of treatment revealed a partial response. Therapy with pembrolizumab was continued and is still ongoing.

AUTHOR CONTRIBUTIONS

F.P. Overweel wrote the paper. R. Rutgers collected the data. L.M. Budel contributed analysis tools. Y. Sandberg collected the data and wrote the paper.

CONFLICT OF INTEREST STATEMENT

All authors have no conflicts of interest to disclose.

PATIENT CONSENT

The patient reported in this manuscript provided written consent for the publication of the case details.

INFORMED CONSENT

Informed consent was obtained from the patient for the publication of his information and imaging.

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