Background

- Angiogenic inhibitor medications, such as bevacizumab, have been associated in the development of medication-related osteonecrosis of the jaw (MRONJ).
- Ramucirumab is also an angiogenic inhibitor used to treat non-small cell lung cancer and metastatic gastric or gastroesophageal (GE) junction cancer.
- Ramucirumab binds to the extracellular domain of vascular endothelial growth factor-2 (VEGF-2) with high affinity and selectivity and blocks the binding of multiple VEGF ligands (VEGF-A, VEGF-C, and VEGF-D) to VEGFR-2.

Purpose of the Study

- This is a case of spontaneous exposure of bone associated with an angiogenesis inhibitor, ramucirumab, which showed characteristics similar to MRONJ.

Case Presentation

- 59-year-old male with a history of non-small cell lung cancer who was being treated with an angiogenesis inhibitor, ramucirumab.
- A total of five doses were administered 8 mg/kg every two weeks by intravenous infusion for 60 minutes over a three-month period.
- The bilateral areas of exposed bone were located in the posterior lingual mandible between the first and second molars.
- The larger lesions measured 4 x 5 mm with trailing smaller lesions on the right side and a 3 x 3 mm lesion on the left side.
- Ulcers were present on the ventral-lateral borders of the tongue, bilaterally, secondary to trauma from the sharp bone surfaces.

Discussion

- MRONJ is defined as the presence of exposed bone or bone that can be probed through an intraoral or extra-oral fistula in the maxillofacial region, which is present for more than 8 weeks and without a history of radiation therapy to the jaws.
- Iijima et al. were first to report that an angiogenesis inhibitor, ramucirumab, caused delayed healing of a tooth extraction socket. Their case was considered to be delayed dry socket healing rather than MRONJ caused by ramucirumab.
- Pimolbutr et al. reported 35 cases of MRONJ associated with anti-angiogenesis medications other than ramucirumab. They concluded that MRONJ caused by angiogenesis inhibitors had greater healing rates than MRONJ caused by anti-resorptive medications.
- In our case, the patient presented with areas of bilateral exposed mandibular bone. There were no recent episodes of oral trauma, or extraction, reported by our patient. This is the first reported case of spontaneous development of MRONJ in a patient treated with ramucirumab.

Conclusion

Dental providers and medical oncologists should be mindful of the potential development of spontaneous MRONJ in patients being treated with ramucirumab.

References