Journal of Dental Sciences 20 (2025) 1373–1374

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.e-jds.com

Correspondence

Bilateral mandibular osteonecrosis associated with imatinib monotherapy for a patient with chronic myeloid leukemia

KEYWORDS
Imatinib;
Mandible;
Osteonecrosis

Medication-related osteonecrosis of the jaw (ONJ) is a rare condition associated with antiresorptive or antiangiogenic drugs. ONJ associated with imatinib which is one of tyrosine kinase inhibitors is extremely rare.[1–4] Here we reported bilateral mandibular osteonecrosis associated with imatinib monotherapy for a patient with chronic myeloid leukemia (CML).

A 65-year-old man with exposure of the right lingual cortical bone of the posterior mandible was referred to our department (Fig. 1A). The patient with chronic myeloid leukemia has been undergoing imatinib monotherapy (400 mg/day) for 12 years, but there was no treatment history with bisphosphonates or radiotherapy. There was no gingival trauma, periodontitis of the second molar, and pericoronitis of the third molar. The lesion was diagnosed as medication-related ONJ. Computed tomography showed a sequestrum at the lingual cortical bone of the right mandibular second molar (Fig. 1B and C). Because the sequestrum was separated one month after the first visit (Fig. 1D), the sequestrectomy was performed under local anesthesia. Three months after the sequestrectomy, the wound was completely covered with the oral mucosa (Fig. 1E). The patient continued the imatinib monotherapy, but the left lingual cortical bone of the posterior mandible was exposed 5.5 years after the initial visit (Fig. 1F). Although the separated sequestrum at the lingual cortical bone of the left mandibular second molar was removed under local anesthesia, the wound did not heal during the follow-up with meticulous oral hygiene. Because the left sequestrum was separated 1 year after the left sequestrectomy (Fig. 1G–I), the second sequestrectomy was performed under local anesthesia. Three weeks after the second sequestrectomy, the wound was completely covered with the oral mucosa (Fig. 1I). There was no recurrence of ONJ after the left second sequestrectomy.

Imatinib is used to treat CML, acute lymphoblastic leukemia, and gastrointestinal stromal tumors.[1] Although there are many side effects such as nausea, vomiting, diarrhoea, rash, dermatitis, edema, anemia, neutropenia, and oral hyperpigmentation and lichenoid lesion,[1–3] ONJ associated with imatinib monotherapy is extremely rare.[1,2,4] To our knowledge, a few well-described cases of ONJ associated with imatinib monotherapy were reported in English literature.[1,2,4] However, we excluded an imatinib-associated ONJ 2 months after imatinib monotherapy reported by Gupta et al.,[4] because of a history of tooth extraction and altered sensation of the posterior mandible for 2.5 years. Therefore, only two cases were reviewed. One is a 72-year-old man with molar root extraction, and ONJ of the right posterior mandible occurred 22 months after imatinib monotherapy.[1] The other is a 52-year-old woman without tooth extraction, and ONJ of the right mandibular torus occurred spontaneously 9 years after imatinib monotherapy.[2] In the present case without tooth extraction, heterochronous ONJ of the lingual cortical bone of the bilateral posterior mandible occurred spontaneously 12 years after imatinib monotherapy. Imatinib monotherapy and concomitant dental extraction seem likely to cause ONJ.[1] In the case

https://doi.org/10.1016/j.jds.2024.11.025

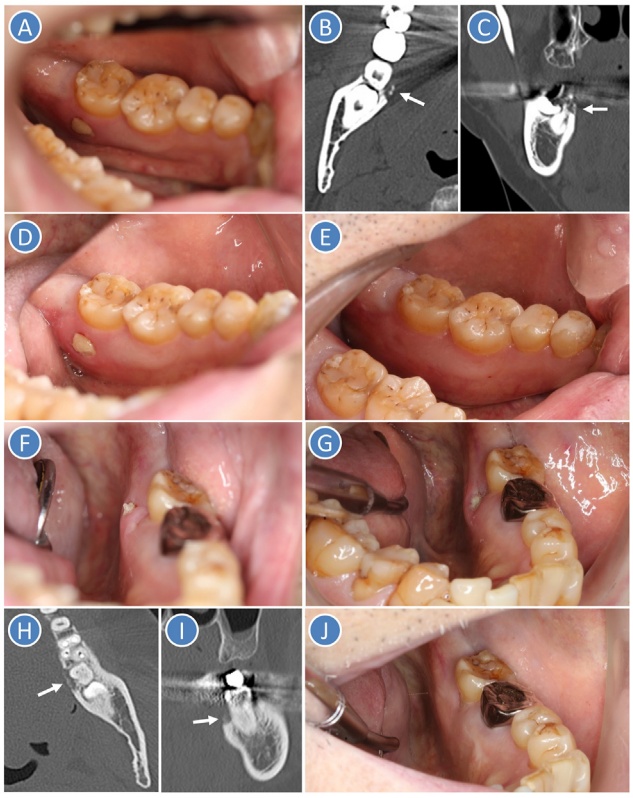

Figure 1 Intraoral photographs and computed tomography images. (A) The exposure of the right lingual cortical bone of the posterior mandible (Mirror image). (B and C) Computed tomography images. Arrow indicates a sequestrum. (D) The sequestrum was separated one month after the first visit (Mirror image). (E) The wound was completely covered with the oral mucosa three months after the sequestrectomy (Mirror image). (F) The exposure of the left lingual cortical bone of the posterior mandible. (G—I) The left sequestrum was separated 1 year after the left sequestrectomy. Arrow indicates the sequestrum. (I) The wound was completely covered with the oral mucosa three weeks after the second sequestrectomy.

without tooth extraction, initial ONJ associated with imatinib monotherapy may tend to occur in the lingual cortex of the mandible. Dentists should consider that imatinib monotherapy has a risk of medication-related ONJ.

Declaration of competing interest

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

Acknowledgments

None.

References

1. Viviano M, Rossi M, Cocca S. A rare case of osteonecrosis of the jaw related to imatinib. *J Korean Assoc Oral Maxillofac Surg* 2017;43:120—4.
2. Okubo-Sato M, Yamagata K, Fukuzawa S, et al. Medication-related osteonecrosis of the jaw spontaneously occurred in a patient with chronic myelogenous leukemia only by imatinib: a report of a rare case. *Case Rep Dent* 2021;2021:6621937.
3. Hwang YJ, Kho HS. Oral lesions associated with imatinib mesylate therapy: five new cases and a literature review. *Int J Oral Maxillofac Surg* 2024;53:873—80.
4. Gupta L, Dholam K, Janghel Y, Gurav SV. Osteonecrosis of the jaw associated with imatinib therapy in myeloproliferative neoplasm: a rare case report. *Oral Surg Oral Med Oral Pathol Oral Radiol* 2021;131:e157—62.

Yasuharu Yajima
Toshinori Iwai*
Satomi Sugiyama
Kenji Mitsudo
Department of Oral and Maxillofacial Surgery/Orthodontics, Yokohama City University Hospital, Yokohama, Kanagawa, Japan

*Corresponding author. Department of Oral and Maxillofacial Surgery/Orthodontics, Yokohama City University Hospital, 3-9 Fukuura, Kanazawa-ku, Yokohama, Kanagawa 236-0004, Japan.
E-mail address: iwai104@yokohama-cu.ac.jp (T. Iwai)

Received 17 November 2024
Final revision received 25 November 2024
Available online 4 December 2024