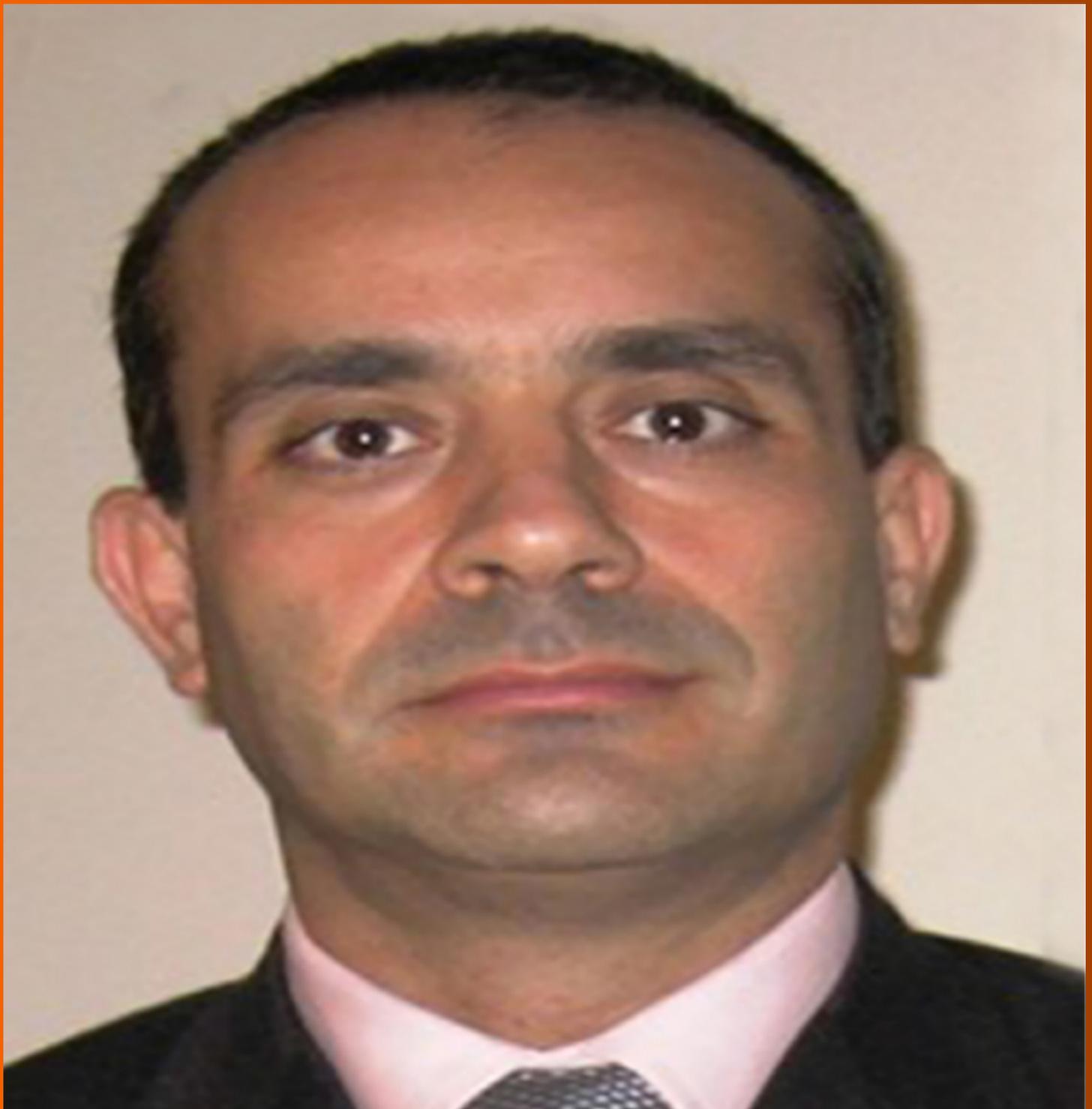


World Journal of *Clinical Cases*

World J Clin Cases 2020 February 6; 8(3): 487-651



REVIEW

- 487 Comprehensive review into the challenges of gastrointestinal tumors in the Gulf and Levant countries
Rare Tumors GI Group, Farhat F, Farsi AA, Mohieldin A, Bahrani BA, Sbaity E, Jaffar H, Kattan J, Rasul K, Saad K, Assi T, Morsi WE, Abood RA

CLINICAL AND TRANSLATIONAL RESEARCH

- 504 Novel zinc alloys for biodegradable surgical staples
Amano H, Miyake K, Hinoki A, Yokota K, Kinoshita F, Nakazawa A, Tanaka Y, Seto Y, Uchida H

CASE REPORT

- 517 Can cyclin-dependent kinase 4/6 inhibitors convert inoperable breast cancer relapse to operability? A case report
Palleschi M, Maltoni R, Barzotti E, Melegari E, Curcio A, Ceconetto L, Sarti S, Manunta S, Rocca A
- 522 Radiation recall dermatitis with dabrafenib and trametinib: A case report
Yilmaz M, Celik U, Hascicek S
- 527 Isolated vaginal metastasis from stage I colon cancer: A case report
Kwon SK, Yu CS, Lee SW, Kim J, Song I, Lee JL, Kim CW, Yoon YS, Park JJ, Lim SB, Kim JC
- 535 Ruptured splenic peliosis in a patient with no comorbidity: A case report
Rhu J, Cho J
- 540 Successful kidney transplantation from an expanded criteria donor with long-term extracorporeal membrane oxygenation treatment: A case report
Seo HW, Lee S, Lee HY, Park SC, Chung BH, Yang CW, Ban TH
- 546 Boarding issue in a commercial flight for patients with cavitary pulmonary tuberculosis: A case report
Jo W, Pak C, Jegal Y, Seo KW
- 552 Cytomegalovirus ileo-pancolitis presenting as toxic megacolon in an immunocompetent patient: A case report
Cho JH, Choi JH
- 560 Successful treatment of adult-onset still disease caused by pulmonary infection-associated hemophagocytic lymphohistiocytosis: A case report
Wang G, Jin XR, Jiang DX

- 568** Complex liver retransplantation to treat graft loss due to long-term biliary tract complication after liver transplantation: A case report
Li J, Guo QJ, Jiang WT, Zheng H, Shen ZY
- 577** Peutz-Jeghers syndrome with mesenteric fibromatosis: A case report and review of literature
Cai HJ, Wang H, Cao N, Wang W, Sun XX, Huang B
- 587** Cutaneous nodules and a novel *GNAS* mutation in a Chinese boy with pseudohypoparathyroidism type Ia: A case report and review of literature
Li YL, Han T, Hong F
- 594** Complete response to trastuzumab and chemotherapy in recurrent urothelial bladder carcinoma with *HER2* gene amplification: A case report
Jiang Q, Xie MX, Zhang XC
- 600** Large cutaneous epithelioid angiomatous nodules in a patient with nephrotic syndrome: A case report
Cheng DJ, Zheng XY, Tang SF
- 606** Clinicopathologic characteristics of prostatic stromal sarcoma with rhabdoid features: A case report
Li RG, Huang J
- 614** Erdheim-Chester disease with asymmetric talus involvement: A case report
Xia Q, Tao C, Zhu KW, Zhong WY, Li PL, Jiang Y, Mao MZ
- 624** Camrelizumab (SHR-1210) leading to reactive capillary hemangioma in the gingiva: A case report
Yu Q, Wang WX
- 630** Combined surgical and interventional treatment of tandem carotid artery and middle cerebral artery embolus: A case report
Zhang M, Hao JH, Lin K, Cui QK, Zhang LY
- 638** Sternal Hodgkin's lymphoma: A case report and review of literature
Yin YY, Zhao N, Yang B, Xin H
- 645** Esophageal tuberculosis complicated with intestinal tuberculosis: A case report
Mao L, Zhou XT, Li JP, Li J, Wang F, Ma HM, Su XL, Wang X

ABOUT COVER

Editorial Board Member of *World Journal of Clinical Cases*, Valerio D'Orazi, MD, PhD, Professor, Department of Surgical Sciences, Sapienza University of Rome, Rome 00161, Italy

AIMS AND SCOPE

The primary aim of *World Journal of Clinical Cases (WJCC, World J Clin Cases)* is to provide scholars and readers from various fields of clinical medicine with a platform to publish high-quality clinical research articles and communicate their research findings online.

WJCC mainly publishes articles reporting research results and findings obtained in the field of clinical medicine and covering a wide range of topics, including case control studies, retrospective cohort studies, retrospective studies, clinical trials studies, observational studies, prospective studies, randomized controlled trials, randomized clinical trials, systematic reviews, meta-analysis, and case reports.

INDEXING/ABSTRACTING

The *WJCC* is now indexed in PubMed, PubMed Central, Science Citation Index Expanded (also known as SciSearch®), and Journal Citation Reports/Science Edition. The 2019 Edition of Journal Citation Reports cites the 2018 impact factor for *WJCC* as 1.153 (5-year impact factor: N/A), ranking *WJCC* as 99 among 160 journals in Medicine, General and Internal (quartile in category Q3).

RESPONSIBLE EDITORS FOR THIS ISSUE

Responsible Electronic Editor: *Yan-Xia Xing*

Proofing Production Department Director: *Xiang Li*

NAME OF JOURNAL

World Journal of Clinical Cases

ISSN

ISSN 2307-8960 (online)

LAUNCH DATE

April 16, 2013

FREQUENCY

Semimonthly

EDITORS-IN-CHIEF

Dennis A Bloomfield, Bao-Gan Peng, Sandro Vento

EDITORIAL BOARD MEMBERS

<https://www.wjnet.com/2307-8960/editorialboard.htm>

EDITORIAL OFFICE

Jin-Lei Wang, Director

PUBLICATION DATE

February 6, 2020

COPYRIGHT

© 2020 Baishideng Publishing Group Inc

INSTRUCTIONS TO AUTHORS

<https://www.wjnet.com/bpg/gerinfo/204>

GUIDELINES FOR ETHICS DOCUMENTS

<https://www.wjnet.com/bpg/GerInfo/287>

GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH

<https://www.wjnet.com/bpg/gerinfo/240>

PUBLICATION MISCONDUCT

<https://www.wjnet.com/bpg/gerinfo/208>

ARTICLE PROCESSING CHARGE

<https://www.wjnet.com/bpg/gerinfo/242>

STEPS FOR SUBMITTING MANUSCRIPTS

<https://www.wjnet.com/bpg/GerInfo/239>

ONLINE SUBMISSION

<https://www.f6publishing.com>

Camrelizumab (SHR-1210) leading to reactive capillary hemangioma in the gingiva: A case report

Qing Yu, Wen-Xia Wang

ORCID number: Qing Yu (0000-0003-3686-6490); Wen-Xia Wang (0000-0003-4893-7604).

Author contributions: Yu Q and Wang WX performed the periodontal treatment; Wang WX collected the information of the patient; Yu Q drafted the manuscript; Wang WX read and revised the manuscript; both authors issued final approval for the version to be submitted.

Informed consent statement: Written informed consent was obtained from the patient for publication of this report and any accompanying images.

Conflict-of-interest statement: The authors declare that they have no conflict of interest.

CARE Checklist (2016) statement: The authors have read the CARE Checklist (2016), and the manuscript was prepared and revised according to the CARE Checklist (2016).

Open-Access: This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

Qing Yu, Wen-Xia Wang, Department of Periodontology, School and Hospital of Stomatology, Shandong University, Shandong Key Laboratory of Oral Tissue Regeneration, Shandong Engineering Laboratory for Dental Materials and Oral Tissue Regeneration, Jinan 250012, Shandong Province, China

Corresponding author: Wen-Xia Wang, PhD, Doctor, Department of Periodontology, School and Hospital of Stomatology, Shandong University, Shandong Key Laboratory of Oral Tissue Regeneration, Shandong Engineering Laboratory for Dental Materials and Oral Tissue Regeneration, No. 44-1 Wenhua Road West, Jinan 250012, Shandong Province, China. wangwx@sdu.edu.cn

Abstract

BACKGROUND

Oncologic immunotherapy is attracting attention as an effective strategy for cancer treatment. Currently, there are two kinds of inhibitors: Anti-PD-1 antibodies and anti-PD-L1 antibodies. These inhibitors have shown significant implications in improving the outcomes of certain cancer types in recent years. However, along with its effectiveness, adverse events cannot be ignored. As an anti-PD-1 antibody, camrelizumab (SHR-1210) has some side effects in tumor immunotherapy. The most common adverse event is reactive capillary hemangioma. While it is widely reported to occur in the skin, gingival reactive capillary hemangioma is rarely reported.

CASE SUMMARY

A 54-year-old man complained of gingival overgrowth on the anterior aspect of the maxilla and mandible for more than 6 mo. He had been placed on SHR-1210 for lung cancer for 7 mo. A gingival mass extending from canine to canine was noted on the lingual surfaces of the mandible. Gingival enlargement was noted in the front teeth. A clinical diagnosis of gingival reactive capillary hemangioma and chronic periodontitis was made. The treatment involved a complex local treatment (repeated local applications of an antibiotic paste, scaling and root planning, and surgery). The excised tissue was sent for histopathological examination, which confirmed the diagnosis of capillary hemangioma. After the operation, most of the gingival enlargement was reduced. At the 2-mo follow-up, it was noted that the gingival overgrowth was immediately reduced after the replacement of the anti-PD-1 agent with an anti-PD-L1 agent.

CONCLUSION

As the prescription for SHR-1210 has increased considerably in recent years, the occurrence of its possible side effects, including gingival reactive capillary

Manuscript source: Unsolicited manuscript

Received: December 15, 2019

Peer-review started: December 15, 2019

First decision: December 30, 2019

Revised: January 6, 2020

Accepted: January 11, 2020

Article in press: January 11, 2020

Published online: February 6, 2020

P-Reviewer: Grawish M, Mousa HA, Man MQ

S-Editor: Zhang L

L-Editor: Wang TQ

E-Editor: Wu YXJ



hemangioma, has increased. It is recommended that regular oral examinations be performed before and during the treatment of tumors with SHR-1210.

Key words: Camrelizumab; Adverse effects; Reactive capillary hemangioma; Gingiva; Case report

©The Author(s) 2020. Published by Baishideng Publishing Group Inc. All rights reserved.

Core tip: Camrelizumab (SHR-1210) is a kind of anti-PD-1 antibody. It was reported that a unique treatment-related adverse event was reactive capillary hemangioma. Notably, most reactive capillary hemangiomas occur in the skin, and this side effect is rarely seen in oral tissues. In this report, we describe the case of a patient who experienced gingival reactive capillary hemangioma during SHR-1210 treatment for lung cancer.

Citation: Yu Q, Wang WX. Camrelizumab (SHR-1210) leading to reactive capillary hemangioma in the gingiva: A case report. *World J Clin Cases* 2020; 8(3): 624-629

URL: <https://www.wjgnet.com/2307-8960/full/v8/i3/624.htm>

DOI: <https://dx.doi.org/10.12998/wjcc.v8.i3.624>

INTRODUCTION

Oncologic immunotherapy is attracting attention as an effective strategy for cancer treatment. The PD-1 pathway inhibits the T cell antitumor immune response in the local tumor microenvironment^[1,2]. Currently, there are two kinds of inhibitors that inhibit the PD-1 pathway: Anti-PD-1 antibodies and anti-PD-L1 antibodies^[3]. These inhibitors have shown significant implications in improving the outcomes of certain cancer types in recent years, such as melanoma, renal cell carcinoma, non-small cell lung cancer, small cell lung cancer, and gastric cancer^[4]. However, along with its effectiveness, adverse events cannot be ignored, including diarrhea, rash, pruritus, dry mouth, vitiligo, *etc.*^[5-8].

Camrelizumab (SHR-1210) is a kind of anti-PD-1 antibody. It was reported that a unique treatment-related adverse event was reactive capillary hemangioma^[9-11]. Notably, most reactive capillary hemangiomas occur in the skin^[10], and this side effect is rarely seen in oral tissues. In this report, we describe the case of a patient who experienced gingival reactive capillary hemangioma during SHR-1210 treatment for lung cancer.

CASE PRESENTATION

Chief complaints

A 54-year-old man visited the Department of Periodontology, Stomatological Hospital of Shandong University, China with a complaint of gingival overgrowth on the anterior aspect of the maxilla and mandible, which had been present for more than 6 mo.

History of present illness

The patient had been placed on SHR-1210 (200 mg through intravenous transfusion biweekly) for lung cancer for 7 mo. During the treatment, the patient had taken nifedipine for 1 mo. Then, he noted overgrowth on the anterior aspect of the maxilla and mandible later. After the cessation of nifedipine, the enlargement decreased in size on the palatal surfaces of the maxillary anterior teeth and gradually increased in size on the lingual surfaces of the mandibular anterior teeth. He used metronidazole, which was not effective.

History of past illness

A review of the patient's medical history revealed nothing significant other than lung cancer and hypertension.

Personal and family history

The patient has no significant personal or family history.

Physical examination upon admission

The extraoral examination was normal. The intraoral examination revealed an interdental papilla enlargement in the upper anterior region, with moderate gingival overgrowth presenting on the facial aspects of the lower anterior region and a gingival mass extending from canine to canine on the lingual surfaces of the mandible (Figure 1). The mass was magenta colored, discrete, pedunculated, and bleeding on palpation. In addition, mobility examination revealed grade I mobility in tooth 43; grade II mobility in teeth 11, 21, and 32; and grade III mobility in teeth 31, 41, and 42.

Laboratory examinations

All routine blood investigations were unremarkable.

Imaging examinations

The radiographic examination showed severe horizontal bone resorption in teeth 31 and 41 and mild horizontal bone resorption in the upper front teeth. It also revealed moderate horizontal bone resorption in the upper and lower alveolar bone (Figure 2).

FINAL DIAGNOSIS

Reactive capillary hemangioma; chronic periodontitis.

TREATMENT

The treatment plan was oral hygiene instructions, supra- and sub-gingival scaling, repeated local applications of an antibiotic paste (tetracycline), surgical removal of the epulis, and supportive periodontal treatment. The instructions consisted of mechanical toothbrushing and a chlorhexidine (0.12%) rinse. After obtaining informed consent from the patient, the lingual lesion around the lower anterior teeth was completely excised under local anesthesia using a semiconductor laser. The excised tissue was sent for histopathological examination.

OUTCOME AND FOLLOW-UP

Microscopic examination showed a stratified squamous surface epithelium. The connective tissue stroma was composed of loosely arranged collagen fiber bundles interspersed with moderate chronic inflammatory cell infiltration of lymphocytes and plasma cells and many blood vessels containing red blood cells (Figure 3). The histopathological features confirmed the diagnosis of capillary hemangioma.

At the 2-wk postoperative appointment, the surgical site healed uneventfully with gingival color normalization and slight swelling (Figure 4A). The mobility of teeth 31, 41, and 42 improved to grade II. However, the interdental papilla overgrowth around the upper anterior teeth was magenta colored and soft in consistency (Figure 4B and C). Concerns were raised that SHR-1210 might be the cause of epulis. The patient's oncologist changed his antineoplastic medication 2 mo later by replacing the anti-PD-1 agent with an anti-PD-L1 agent. He then reported a reduction in gingival overgrowth immediately after the cessation of SHR-1210.

DISCUSSION

Immunotherapy has been accepted as an alternative therapy to surgery, chemotherapy, and radiotherapy for tumors. Anti-PD-1 and anti-PD-L1 agents have been suggested to be effective for certain tumors^[4]. However, some adverse events have been reported^[9]. SHR-1210 is a kind of anti-PD-1 agent. Since it was applied to clinical management, SHR-1210 has been reported to cause skin capillary hemangioma. The average time to occurrence was 23 d^[10].

The patient developed gingival enlargement after the application of SHR-1210 and nifedipine (Figure 1). As a calcium channel blocker, nifedipine can induce gingival hyperplasia. Here, an important question is what the true underlying cause of the gingival overgrowth and epulis was. It was reported that spontaneous regression of capillary hemangioma is observed after the termination of SHR-1210^[10]. There is evidence that cessation of nifedipine can reduce excessive gingival growth^[12,13]. The mass was still present after the patient stopped taking nifedipine. However, the patient's gingival mass disappeared after the cessation of SHR-1210. In addition,



Figure 1 Initial aspects of the gingiva. A: A gingival mass extending from canine to canine on the lingual surfaces of the mandible; B: A moderate gingival overgrowth presenting on facial aspects of the lower anterior region; C: An interdental papilla enlargement in the upper anterior region.

histological examination showed capillary hemangioma (Figure 3). Thus, it could be considered that epulis was caused by SHR-1210.

Reactive capillary hemangioma is a unique adverse effect related with camrelizumab treatment^[11], and a total of 85.7% of patients with advanced solid tumors who received camrelizumab monotherapy developed reactive capillary hemangioma^[14]. The exact mechanisms of SHR-1210-related gingiva capillary hemangioma are still under investigation. A possible explanation is that SHR-1210 is a potent agonist of human VEGFR-2^[15]. VEGFR-2 can drive hemangioma development by activating vascular endothelial cell proliferation. In addition, the incidence of reactive capillary hemangioma was 12.1% when those patients were treated with a combination of camrelizumab and apatinib (a VEGFR-2 inhibitor)^[16]. Another possible reason may be oral bacterial plaque. Bacterial plaque is the initiator of oral periodontal diseases^[17]. The inflammation of the gingiva induced by inadequate oral hygiene seems to enhance the interaction between the drug and gingival tissue^[18].

Generally, treatment was not required in the majority of cases, because reactive capillary hemangioma lesions could spontaneously regress after the discontinuation of SHR-1210^[14]. Only lesions occurred on the body area prone to friction or with a high risk of bleeding were treated with local therapy, such as laser or surgical resection^[14,19]. However, in this case, the reactive capillary hemangioma lesion mainly occurred on the lingual aspects of the lower anterior teeth, which was related to difficulty in eating and speaking clearly. In addition, the patient suffered chronic periodontitis. Therefore, we performed several scaling and root planning sessions on the patient. After obtaining informed consent from the patient, the lingual lesion around the lower anterior teeth was completely excised under local anesthesia *via* a semiconductor laser (Figure 4A). After 2 mo, the patient's oncologist changed his antineoplastic medication to an anti-PD-L1 agent. He then reported spontaneous regression of gingival enlargement immediately after the discontinuation of SHR-1210.

CONCLUSION

As the prescription for SHR-1210 has increased considerably in recent years, the occurrence of its possible side effects, including gingiva reactive capillary hemangioma, has increased. It is recommended that regular oral examination be performed before and during the treatment of tumors with SHR-1210.



Figure 2 Radiographic aspects. A: Moderate horizontal bone resorption in the upper and lower alveolar bone; B: Mild horizontal bone resorption in the upper front teeth; C: Severe horizontal bone resorption in teeth 31 and 41.

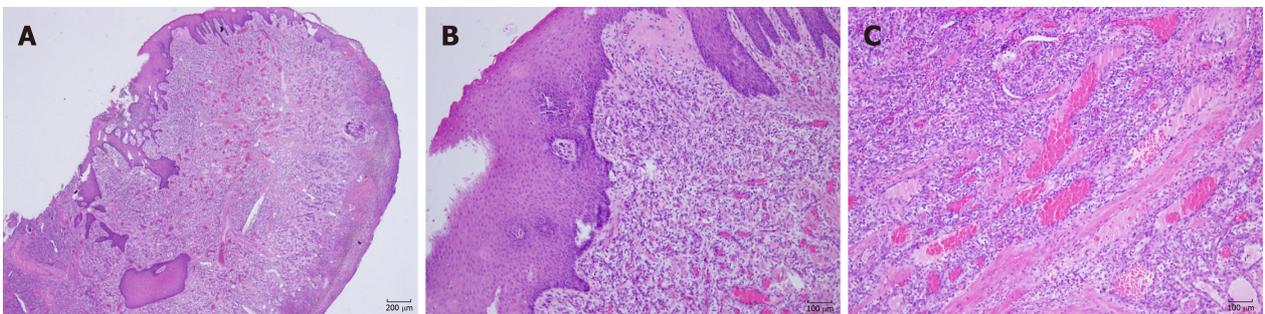


Figure 3 Histopathological findings. A: Many blood vessels in the connective tissue stroma (Hematoxylin and eosin staining; magnification, 40 ×); B: Stratified squamous surface epithelium (Hematoxylin and eosin staining; magnification, 100 ×); C: The connective tissue stroma was composed of loosely arranged collagen fiber bundles interspersed with moderate chronic inflammatory cell infiltration of lymphocytes and plasma cells and many blood vessels containing red blood cells (Hematoxylin and eosin staining; magnification, 100 ×).



Figure 4 Gingival aspects at two weeks after surgery. A: Surgical site healed uneventfully with gingival color normalization and slight swelling; B and C: The interdental papilla overgrowth around the upper anterior teeth.

REFERENCES

- 1 **Lipson EJ**, Forde PM, Hammers HJ, Emens LA, Taube JM, Topalian SL. Antagonists of PD-1 and PD-L1 in Cancer Treatment. *Semin Oncol* 2015; **42**: 587-600 [PMID: 26320063 DOI: 10.1053/j.seminoncol.2015.05.013]
- 2 **Sanmamed MF**, Chen L. A Paradigm Shift in Cancer Immunotherapy: From Enhancement to Normalization. *Cell* 2018; **175**: 313-326 [PMID: 30290139 DOI: 10.1016/j.cell.2018.09.035]
- 3 **Constantinidou A**, Alifieris C, Trafalis DT. Targeting Programmed Cell Death -1 (PD-1) and Ligand (PD-L1): A new era in cancer active immunotherapy. *Pharmacol Ther* 2019; **194**: 84-106 [PMID: 30268773 DOI: 10.1016/j.pharmthera.2018.09.008]
- 4 **Bardhan K**, Anagnostou T, Boussiotis VA. The PD1: PD-L1/2 Pathway from Discovery to Clinical Implementation. *Front Immunol* 2016; **7**: 550 [PMID: 28018338 DOI: 10.3389/fimmu.2016.00550]
- 5 **Robert C**, Schachter J, Long GV, Arance A, Grob JJ, Mortier L, Daud A, Carlino MS, McNeil C, Lotem M, Larkin J, Lorigan P, Neyns B, Blank CU, Hamid O, Mateus C, Shapira-Frommer R, Kosh M, Zhou H, Ibrahim N, Ebbinghaus S, Ribas A; KEYNOTE-006 investigators. Pembrolizumab versus Ipilimumab in Advanced Melanoma. *N Engl J Med* 2015; **372**: 2521-2532 [PMID: 25891173 DOI: 10.1056/NEJMoa1503093]
- 6 **Topalian SL**, Sznol M, McDermott DF, Kluger HM, Carvajal RD, Sharfman WH, Brahmer JR, Lawrence DP, Atkins MB, Powderly JD, Leming PD, Lipson EJ, Puzanov I, Smith DC, Taube JM, Wigginton JM, Kollia GD, Gupta A, Pardoll DM, Sosman JA, Hodi FS. Survival, durable tumor remission, and long-term safety in patients with advanced melanoma receiving nivolumab. *J Clin Oncol* 2014; **32**: 1020-1030 [PMID: 24590637 DOI: 10.1200/JCO.2013.53.0105]
- 7 **Robert C**, Long GV, Brady B, Dutriaux C, Maio M, Mortier L, Hassel JC, Rutkowski P, McNeil C, Kalinka-Warzocha E, Savage KJ, Hernberg MM, Lebbé C, Charles J, Mihalcioiu C, Chiarion-Sileni V, Mauch C, Cognetti F, Arance A, Schmidt H, Schadendorf D, Gogas H, Lundgren-Eriksson L, Horak C, Sharkey B, Waxman IM, Atkinson V, Ascierto PA. Nivolumab in previously untreated melanoma without BRAF mutation. *N Engl J Med* 2015; **372**: 320-330 [PMID: 25399552 DOI: 10.1056/NEJMoa1412082]
- 8 **Topalian SL**, Hodi FS, Brahmer JR, Gettinger SN, Smith DC, McDermott DF, Powderly JD, Carvajal RD, Sosman JA, Atkins MB, Leming PD, Spigel DR, Antonia SJ, Horn L, Drake CG, Pardoll DM, Chen L, Sharfman WH, Anders RA, Taube JM, McMiller TL, Xu H, Korman AJ, Jure-Kunkel M, Agrawal S, McDonald D, Kollia GD, Gupta A, Wigginton JM, Sznol M. Safety, activity, and immune correlates of anti-PD-1 antibody in cancer. *N Engl J Med* 2012; **366**: 2443-2454 [PMID: 22658127 DOI: 10.1056/NEJMoa1200690]
- 9 **Fang W**, Yang Y, Ma Y, Hong S, Lin L, He X, Xiong J, Li P, Zhao H, Huang Y, Zhang Y, Chen L, Zhou N, Zhao Y, Hou X, Yang Q, Zhang L. Camrelizumab (SHR-1210) alone or in combination with gemcitabine plus cisplatin for nasopharyngeal carcinoma: results from two single-arm, phase 1 trials. *Lancet Oncol* 2018; **19**: 1338-1350 [PMID: 30213452 DOI: 10.1016/S1470-2045(18)30495-9]
- 10 **Mo H**, Huang J, Xu J, Chen X, Wu D, Qu D, Wang X, Lan B, Wang X, Xu J, Zhang H, Chi Y, Yang Q, Xu B. Safety, anti-tumour activity, and pharmacokinetics of fixed-dose SHR-1210, an anti-PD-1 antibody in advanced solid tumours: a dose-escalation, phase 1 study. *Br J Cancer* 2018; **119**: 538-545 [PMID: 29755117 DOI: 10.1038/s41416-018-0100-3]
- 11 **Teng Y**, Guo R, Sun J, Jiang Y, Liu Y. Reactive capillary hemangiomas induced by camrelizumab (SHR-1210), an anti-PD-1 agent. *Acta Oncol* 2019; **58**: 388-389 [PMID: 30700195 DOI: 10.1080/0284186X.2019.1567935]
- 12 **Lederman D**, Lumerman H, Reuben S, Freedman PD. Gingival hyperplasia associated with nifedipine therapy. Report of a case. *Oral Surg Oral Med Oral Pathol* 1984; **57**: 620-622 [PMID: 6588343 DOI: 10.1016/0030-4220(84)90283-4]
- 13 **Ramon Y**, Behar S, Kishon Y, Engelberg IS. Gingival hyperplasia caused by nifedipine--a preliminary report. *Int J Cardiol* 1984; **5**: 195-206 [PMID: 6607894 DOI: 10.1016/0167-5273(84)90145-1]
- 14 **Chen X**, Ma L, Wang X, Mo H, Wu D, Lan B, Qu D, Zhang H, Huang J, Xu B. Reactive capillary hemangiomas: a novel dermatologic toxicity following anti-PD-1 treatment with SHR-1210. *Cancer Biol Med* 2019; **16**: 173-181 [PMID: 31119058 DOI: 10.20892/j.issn.2095-3941.2018.0172]
- 15 **Finlay WJJ**, Coleman JE, Edwards JS, Johnson KS. Anti-PD1 'SHR-1210' aberrantly targets pro-angiogenic receptors and this polyspecificity can be ablated by paratope refinement. *MAbs* 2019; **11**: 26-44 [PMID: 30541416 DOI: 10.1080/19420862.2018.1550321]
- 16 **Xu J**, Zhang Y, Jia R, Yue C, Chang L, Liu R, Zhang G, Zhao C, Zhang Y, Chen C, Wang Y, Yi X, Hu Z, Zou J, Wang Q. Anti-PD-1 Antibody SHR-1210 Combined with Apatinib for Advanced Hepatocellular Carcinoma, Gastric, or Esophagogastric Junction Cancer: An Open-label, Dose Escalation and Expansion Study. *Clin Cancer Res* 2019; **25**: 515-523 [PMID: 30348638 DOI: 10.1158/1078-0432.CCR-18-2484]
- 17 **Kinane DF**, Stathopoulou PG, Papapanou PN. Periodontal diseases. *Nat Rev Dis Primers* 2017; **3**: 17038 [PMID: 28805207 DOI: 10.1038/nrdp.2017.38]
- 18 **Lertpimonchai A**, Rattanasiri S, Arj-Ong Vallibhakara S, Attia J, Thakkestian A. The association between oral hygiene and periodontitis: a systematic review and meta-analysis. *Int Dent J* 2017; **67**: 332-343 [PMID: 28646499 DOI: 10.1111/idj.12317]
- 19 **Song Y**, Wu J, Chen X, Lin T, Cao J, Liu Y, Zhao Y, Jin J, Huang H, Hu J, Luo J, Zhang L, Xue H, Zhang Q, Wang W, Chen C, Feng J, Zhu J. A Single-Arm, Multicenter, Phase II Study of Camrelizumab in Relapsed or Refractory Classical Hodgkin Lymphoma. *Clin Cancer Res* 2019; **25**: 7363-7369 [PMID: 31420358 DOI: 10.1158/1078-0432.CCR-19-1680]



Published By Baishideng Publishing Group Inc
7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA
Telephone: +1-925-3991568
E-mail: bpgoffice@wjgnet.com
Help Desk: <https://www.f6publishing.com/helpdesk>
<https://www.wjgnet.com>

