https://doi.org/10.5021/ad.2018.30.2.243

Cutaneous Abscess as a Complication of Bisphosphonate-Related Osteonecrosis of the Jaw

Min-Young Yang[1], Hyunju Jin[1], Hyang-Suk You[1], Woo-Haing Shim[1], Jeong-Min Kim[1], Gun-Wook Kim[1], Hoon-Soo Kim[1], Hyun-Chang Ko[1], Moon-Bum Kim[1,2], Byung-Soo Kim[1,2]

[1]Department of Dermatology, Pusan National University School of Medicine, [2]Biomedical Research Institute, Pusan National University Hospital, Busan, Korea

Dear Editor:

In clinical dermatology, abscesses are generally caused by secondary impetiginization of a previous furuncle or a ruptured epidermal cyst. We encountered a rare case of cutaneous abscess in the maxillo-mandibular region, complicated by bisphosphonate-related osteonecrosis of the jaw.

A 76-year-old woman presented with an erythematous swollen mass in the submental area (Fig. 1A), which had appeared 5 days prior. The patient complained of dull pain and lesional heat. She had been taking 70 mg alendronic acid (Fosamax®; Merck, Kenilworth, NJ, USA), once weekly, for osteoporosis for approximately 10 years. Suspecting a cutaneous abscess, we performed a radiologic evaluation using an ultrasonic approach and incision biopsy with drainage. A relatively well-defined heterogeneous hypoechoic mass was evidenced by the ultrasound (Fig. 1C), and the histopathological findings showed a deep dermal abscess and necrotic debris infiltrated by inflammatory cells mainly composed of neutrophils (Fig. 1F). Microbiologic evaluation done by skin tissue showed gram positive cocci (*Streptococcus constellatus*) in bacterial culture, and negative results in fungal and mycobacterial culture. As the anatomical location of the lesion suggested a dental origin, the patient consulted the oral and maxillofacial surgery department. The oral examination showed exposed necrotic bone in the left molar area of the mandible (Fig. 1B). On radiologic evaluation, a radiolucent area on the conventional radiograph and a low-density lesion corresponding to the clinically-evidenced exposed necrotic bone on dental computed tomography (CT) were observed (Fig. 1D, E).

The patient was diagnosed with a cutaneous abscess arising as a complication of bisphosphonate-related osteonecrosis of the jaw. We initiated treatment with surgical sequestrectomy combined with systemic antibiotics comprising first-generation cephalosporin and metronidazole and adjuvant chlorhexidine oral antiseptics. Necrotic osteocytes with inflammatory infiltration were observed on the sequestrectomy's pathologic specimen (Fig. 1G).

Bisphophonates are the most commonly prescribed medication for osteoporosis. Malignant bony metastasis and Paget's disease are also candidates for bisphophonate indication. Bisphophonates reduce bony resorption by influencing overall osteoclast activity, inhibiting the maturation of osteoclast precursors, promoting the conversion of active osteoclasts into inactive ones, and inducing apoptosis of the inactive osteoclasts[1]. As the medication use increases, osteonecrosis of the jaw has been reported as a side-effect. The pathomechanisms are explained by the bisphosphonates' anti-angiogenic effect, which causes avascular state of the bone, and its anti-osteoclastic effect, which disturbs the homeostasis of bone cell turnover[2]. Diagnosis is made when necrotic bone exposures persistent for >8 weeks are observed in the maxillofacial region without a history of jaw irritation, such as head or neck radiation therapy, or in the presence of current or previous treatment with bisphosphonates[3]. Radiologic evaluations

Received October 21, 2016, Revised February 2, 2017, Accepted for publication April 10, 2017

Corresponding author: Byung-Soo Kim, Department of Dermatology, Pusan National University Hospital, 179 Gudeok-ro, Seo-gu, Busan 49241, Korea. Tel: 82-51-240-7338, Fax: 82-51-245-9467, E-mail: dockbs@pusan.ac.kr

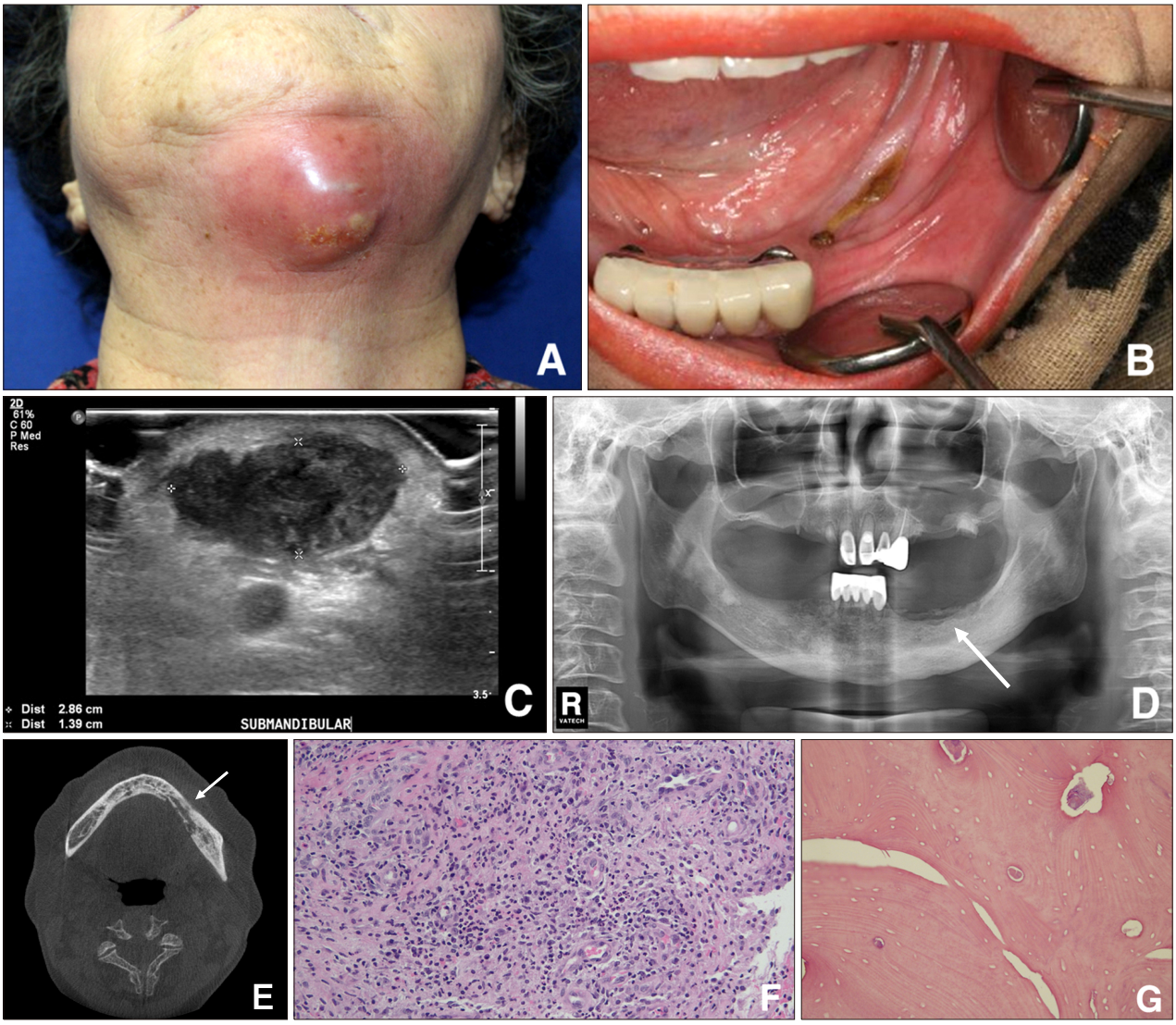

Fig. 1. Bisphosphonate-related osteonecrosis of the jaw. (A) Physical examination exihibited an erythematous bulging mass from left submental area to upper neck. (B) Exposed necrotic bone was observed in left molar area of the mandible on oral examination. (C) Relatively well-defined heterogenous hypoechoic mass was assessed by ultrasound. (D, E) Radiolucent area (white arrow) in conventional radiograph, and low density lesion (white arrow) in dental computed tomography were observed. (F) Deep dermal abscess and necrotic debris infiltrated by inflammatory cells mainly composed of neutrophils were observed in tissue of cutaneous abscess (H&E, ×200). (G) Necrotic osteocytes with inflammatory infiltration were observed in bony specimen of sequestrectomy (H&E, ×200).

including conventional radiographs, CT, bone scans, and magnetic resonance imaging can provide relatively specific findings[4].

Although bisphosphonate-related osteonecrosis of the jaw is unfamiliar to dermatologists, given the prevalence of osteoporosis and the relevance of bisphosphonates, the present case demonstrates possible cutaneous manifestations of the disease. Dermatologists encountering an exposed cutaneous abscess in the maxillo-mandibular region should consider oral examination for the identification of potentially progressive processes behind the abscess[5].

CONFLICTS OF INTEREST

The authors have nothing to disclose.

REFERENCES

1. Rogers MJ, Gordon S, Benford HL, Coxon FP, Luckman SP, Monkkonen J, et al. Cellular and molecular mechanisms of action of bisphosphonates. Cancer 2000;88(12 Suppl):2961-2978.
2. Marx RE, Sawatari Y, Fortin M, Broumand V. Bisphosphonate-induced exposed bone (osteonecrosis/osteopetrosis)

of the jaws: risk factors, recognition, prevention, and treatment. J Oral Maxillofac Surg 2005;63:1567-1575.
3. Sigua-Rodriguez EA, da Costa Ribeiro R, de Brito AC, Alvarez-Pinzon N, de Albergaria-Barbosa JR. Bisphosphonate-related osteonecrosis of the jaw: a review of the literature. Int J Dent 2014;2014:192320.
4. Chiandussi S, Biasotto M, Dore F, Cavalli F, Cova MA, Di Lenarda R. Clinical and diagnostic imaging of bisphosphonate-associated osteonecrosis of the jaws. Dentomaxillofac Radiol 2006;35:236-243.
5. Kim SH, Park SJ, Oh JJ, Lee ES. A case of cutaneous sinus tract of dental origin. Ann Dermatol 2002;14:235-238.

https://doi.org/10.5021/ad.2018.30.2.245

Dermoscopic Finding in Pigmented Purpuric Lichenoid Dermatosis of Gougerot-Blum: A Useful Tool for Clinical Diagnosis

Min-Young Park[1], Woo-Haing Shim[1], Jeong-Min Kim[1], Gun-Wook Kim[1], Hoon-Soo Kim[1], Hyun-Chang Ko[1], Moon-Bum Kim[1,2], Byung-Soo Kim[1,2]

[1]Department of Dermatology, Pusan National University School of Medicine, [2]Biomedical Research Institute, Pusan National University Hospital, Busan, Korea

Dear Editor:

Pigmented purpuric lichenoid dermatosis of Gougerot-Blum is an uncommon subtype of pigmented purpuric dermatosis (PPD). It is clinically characterised by tiny lichenoid papules that tend to fuse into plaques of various hues and are observed commonly on the legs but rarely on the trunk. It is morphologically characterised by but histopathologically indistinguishable from other entities of PPD[1]. Therefore, dermoscopy can be a highly valuable tool for accurate diagnosis[2].

A 61-year-old woman presented with localized orange to brown lichenoid macules and papules on both legs for 3 years without any symptoms (Fig. 1A, B). Histopathological examination of the lichenoid papule revealed dense lichenoid cellular infiltration composed of lymphocytes, extravasated red blood cells, and hemosiderin in the upper dermis (Fig. 1C, D). Dermoscopy revealed round to oval red dots and globules with orange-to-brown-pigmented scaly patches (Fig. 1E).

PPD is a chronic and relapsing disorder characterised by a symmetrical rash of petechial and pigmentary macules usually confined to the lower limbs. PPD have been traditionally divided into the following six clinical entities: 1) progressive PPD (i.e., Schamberg's disease), 2) purpura annularis telangiectodes (i.e., Majocchi's disease), 3) lichen aureus, 4) PPD of Gougerot-Blum, 5) itching purpura, and 6) eczematid-like purpura of Doucas-Kapetanakis[3]. PPD of Gougerot-Blum is likely a variant of Majocchi's disease. It is diagnosed based on clinical and histopathologic features. However, PPD of Gougerot-Blum might clinically resemble Kaposi's sarcoma, mycosis fungoides, cutaneous vasculitis, and traumatic purpura. Dermoscopy is a non-invasive method that can be useful for making a correct diagnosis by differentiating coloured skin lesions.

Received August 22, 2016, Revised November 29, 2016, Accepted for publication April 11, 2017

Corresponding author: Byung-Soo Kim, Department of Dermatology, Pusan National University Hospital, 179 Gudeok-ro, Seo-gu, Busan 49241, Korea. Tel: 82-51-240-7338, Fax: 82-51-245-9467, E-mail: dockbs@pusan.ac.kr