EDITORIAL

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It was 'up to code' – but rules predate the age of advanced technology: it was suitable then but not now

Won Lee, DDS, MSD, PhD
Editor-in-Chief of JKAOMS
Department of Dentistry, College of Medicine, The Catholic University of Korea, Seoul, Korea

On March 26, 2024, the Francis Scott Key Bridge in Baltimore, Maryland, USA, collapsed after being hit by a large container ship, resulting in loss of life of people on the bridge. Although the accident was primarily caused by a mechanical issue with the large container ship that hit the bridge, engineering experts pointed out another problem. The bridge had been constructed in 1977, at which time it was an appropriate design at the time. However, many advancements have been achieved since then, which the old design does not involve. Engineers of the bridge expressed that it was 'up to code' at the time – but the regulations predated the use of supersized ships[1].

Something similar is occurring in our oral and maxillofacial surgery department. We chose to pursue oral and maxillofacial surgery during dental school, completed specialized training, and continue to accumulate updated knowledge through academic societies. However, it is not easy to discard the knowledge base on which our training was built, and there are many instances where we fail to employ an ever-advancing medical technology. Of course, this phenomenon does not only occur in our field but is an issue across the medical field and society as a whole. This problem is especially prevalent in modern times as technological development is so rapid.

One example of this was a recent case of medication-related osteonecrosis of the jaw (MRONJ). Bisphosphonate-related drugs previously were used widely to prevent osteoporosis. However, the discovery that they caused osteonecrosis of the jaw (ONJ), known as BRONJ (bisphosphonate-related osteonecrosis of the jaw), resulted in a major decrease in its prescription. Several academic societies, including the Oral and Maxillofacial Surgery Association, published position papers[2,3], revealing that not only bisphosphonate drugs, but also other drugs could cause ONJ, leading to the change in terminology to MRONJ. Initially, the treatment for ONJ was a drug holiday and a conservative approach. Now, approximately 20 years after BRONJ first was reported, more active surgical treatment is being recommended, and many surgeons have questioned the effectiveness of the drug holiday. Drugs such as denosumab, which are easy to control, are being used rather than bisphosphonate drugs.

Another technology development that has greatly impacted the medical field is artificial intelligence (AI). This technology is being used in result interpretation methods, with AI identifying and diagnosing lesions that are not be observed by radiologists. However, many medical personnel are hesitant to depend on AI and experience stress over its use. Such personal obstacles must be overcome to take advantage of the more accurate diagnoses and treatment plans expected with AI technology.

As in the case of the outdated Maryland bridge, it is important to consider the consequences of failing to properly update practice to remain current in the medical field.

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Won Lee
Dental Clinic, The Catholic University of Korea, Uijeongbu St. Mary's Hospital, 271 Cheonbo-ro, Uijeongbu 11765, Korea
TEL: +82-31-820-3184
E-mail: cmfs21@catholic.ac.kr
ORCID: https://orcid.org/0000-0002-6383-8754

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