



**Japan Association  
of Microscopic Dentistry**

# **The 20th Annual Meeting & Scientific Session Symposium**

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## History and Prospects of Microsurgery in Dentistry

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"This is as significant as the changes that occurred in surgery with the introduction of antiseptics, asepsis, and anesthesia." J. (H.L.) Wurstein, "The Second Revolution in Surgery (U Trailer)" (History of Microsurgery; by Adolf Mielke, translated by Hiroyuki Tanaka and Kikuko Tanaka, CAP Publications).

These words express the great impact that microscope surgery had on the surgical field in its early days. The wave of microsurgery that began in otolaryngology soon spread to gynecology and ophthalmology, and eventually led to the birth of neurosurgery. This wave reached dentistry much later, but with its own unique twist. That is the use of a mirror. In the medical field, the principle of "direct vision and direct access" is used, and hard tissues that obstruct direct vision are removed, and soft tissues are compressed to secure the field of view. For example, the mastoid process is often opened during inner ear surgery.

However, in root canal therapy, the first microscopic treatment in dentistry, it is impossible to remove the head and neck to observe the root canal, so a mirror is used to insert the viewpoint into the oral cavity to perform the treatment. Although this was an extremely natural device in dentistry, where mirrors were conventionally used for treatment and recording, it was a "revolution in microsurgery" that could not have been achieved in the medical field. In other words, it made it possible to insert the microscope indirectly into the body's interior, the oral cavity. This is still not adopted in the medical field, and remains unique to dentistry, but it has caused a paradigm shift in the way microscope views are inserted into the body cavity.

On the other hand, in the medical field, instead of mirrors, gastroscopes, intravascular endoscopes, laparoscopes, and even robotic surgery have been developed and advanced to "perform surgery while observing the affected area in detail by inserting the viewpoint into the body cavity." This is expanding the possibilities of treatment.

In this lecture, I will review the unique development of microsurgical dentistry, especially in Japan, clarify its possibilities and limitations, and explore the future path of microscopic dentistry.