

Dawn and evolution of microsurgery in medicine

—Recommendations for the MIS era—

Hiroaki Ozaki

Clinical Professor

Department of Ophthalmology, Fukuoka University



1. Introduction and roles of microsurgery

Microsurgery was first introduced in medical practice in 1950 with otolaryngological surgery. In the ophthalmology, previously only gross surgery was possible, and the identification of the fine tissues was limited. The introduction of microsurgery has enabled new advanced techniques that are minimally invasive to tissues. The significance of microscopic observation of the tissues will be discussed.

2. Microsurgery in clinical practice

In the ophthalmology area, all operations are performed with microscopy. Therefore, physicians must be familiar with maneuvering instruments under microscopic conditions. In our department, all residents and medical students are submitted to a training program by wet-lab using pig eyes and computer simulation programs using special software. Preparation to actually perfect microsurgery will be given and actual microsurgery videos will be shown.

3. Importance of microsurgery in MIS (Micro Invasive Surgery)

MIS has become mainstream in recent years in medicine as well as dentistry. The ultimate goal of medical care is to advance medical technology and improve patient satisfaction by reducing patient burden. Recent innovations in surgical instruments have led to smaller incisions, and it is hoped that surgery time will be reduced with fewer complications. Small incisions and implants are considered the golden standard in ocular microsurgeries, and the microscope is a vital tool at its core.

4. Microsurgery in the near future

Microsurgery has its limitations, and the burden on the body of the doctor due to long surgery is undeniable. In addition, microsurgery becomes stressful as we age. Recently, heads-up surgery which operates by watching a 3D-monitor has been developed. It allows surgeons to operate in a natural position with less physical stress. I will introduce body-friendly surgery that will be practical and popular down the road.

In this lecture, I hope you will come to understand the attractiveness and possibilities of surgery using a microscope.

Keynote Lecture

Professional career

1990 Graduated Oita University School of Medicine
1990-1993 Resident of Department of Ophthalmology, Fukuoka University
1992-1993 Doctor at Sasebo Kyosai Hospital
1993-1997 Received PhD from Fukuoka University School of medicine
1995-1998 Research fellow, Wilmer Eye Institute, Johns Hopkins University
1998-1999 Assistant professor, Fukuoka University
1999-2010 Associate professor, Fukuoka University
2010- present Clinical professor, Fukuoka University

Affiliation society

Japanese Ophthalmological Society
Japanese Glaucoma Society
Japanese Cornea Society
Association for Research in Vision and Ophthalmology (ARVO)