

# Plastic and Reconstructive Surgery Division

## Introduction

Plastic and Reconstructive Surgery has focused on the following three aspects of surgical treatment of cancer for the purpose of improving patients' Quality of Life.

1. Obtaining good functional recovery
2. Reducing postoperative complications
3. Causing less donor site morbidity

With the aim of achieving these assignments, establishing a standard for reconstructive surgery and developing new techniques of reconstructive procedures are the most important areas of our studies.

## Standardization of Reconstructive Surgery

In the field of head and neck surgery, 25% of patients who receive surgical treatment require reconstructive surgery. However, there is no standard procedure for reconstructive procedures. Reconstructive surgery for rectifying defects after total laryngopharyngoesophagectomy at our institute was standardized in 2000, and the results after surgery were analyzed and compared with previous results. After the adoption of standard surgery, postoperative complications such as anastomotic leakage and stenosis showed a significant reduction (54). Further investigations by means of multi-institutional studies are now proceeding.

Investigation of reconstructive procedure after total maxillectomy was performed in a multi-institution study, supported by a Grant-in-Aid for Cancer Research from the Ministry of Health, Labor and Welfare of Japan. The outline of primary maxillary reconstruction has been decided, and analysis of postoperative function is currently in progress.

## Development of a New Technique for Reconstructive Procedures

Several new techniques for reconstructive surgery have been developed, as well as modifications of conventional surgery.

A new flap design for reconstruction of defects of the lower lip after cancer ablation has been developed. The advantages of this new technique are avoidance of two-stage surgery and of annoying vessels that interfere with mouth-opening (55).

A patent application has been submitted for a new technique for functional recovery of mastication after mandibular reconstruction. This one-stage osseous integrated implant to reconstruct the mandible provides good masticatory function earlier than in the conventional method. The patent is currently under study.

Erectile functional reconstruction with nerve grafts after total prostatectomy has been performed in cooperation with the Division of Urology since 2005. Patients are followed up and functional analysis is now proceeding.

Modification of breast reconstruction was performed to reduce donor site morbidity. Previously, breast reconstruction was usually performed using the rectus abdominis musculocutaneous free flap which contained most of the rectus abdominis muscle. This resulted in complications such as hernia and loss of muscle strength. Our modification, which can reduce donor site morbidity, involves using the rectus abdominis muscle perforator flap without any muscle tissue.

Other developments in reconstructive procedures, in cooperation with other divisions, such as colorectal surgery, esophageal surgery, etc., are in progress.