

Endoscopy Division

Introduction

The Endoscopy Division is comprised of the gastrointestinal, respiratory, and otolaryngology teams. The gastrointestinal team has 6 staff physicians, 3 chief residents, 5 residents, and several rotating residents, the respiratory team has 3 staff physicians and several trainees, and the otolaryngology team has a staff physician.

Every week, we examine about 200 patients with gastroscopes, 80 with colonoscopes, 10 with endoscopic ultrasound, 10 with bronchoscopes and 2 with otolaryngoscopes. Recent dramatic developments of devices have changed the operational mechanism and design of endoscopes, and accordingly, their clinical applications. In the gastrointestinal division, endoscopic interventions such as endoscopic mucosal resection (EMR), percutaneous endoscopic gastrostomy (PEG), and stent placement are increasingly applied. Bronchoscopy is used in combination with computerized tomography (CT) for the treatment of airway stenosis, minute peripheral lung cancer, etc.

Educational activities are an important part of our division's role. Many students, residents, and domestic and foreign post-graduate doctors attend our training course.

Routine Activities

All diagnostic knowledge and techniques including chromoendoscopy, magnifying endoscopy and endoscopic ultrasonography are used to detect and evaluate small early malignant lesions. With increase in the number of patients with gastrointestinal mucosal cancer, EMR is performed more frequently. In 2003 we performed 925 EMRs (esophagus 72, stomach 416, colon 437). In gastric cancer treatment, 95% (360/380) of EMR were performed using an insulating-tipped (IT) diathermic knife. Recently developed other devices such as Hook knife, Flex

knife or Attachment were also used in some cases. The proportion of EMR in all early gastric cancers treated in our hospital in 2003 was 55%. Major complications included 6 perforations and 3 active bleedings, and an emergency operation was needed in a case of perforation. The number of EMRs for esophageal and colon cancers are also increasing year by year. Regarding the palliative treatment for patients at the terminal stage, placement of self-expandable metallic stent for malignant obstruction was performed in 8 cases, and PEG for malignant dysphagia in 11 cases.

For respiratory diseases, we have focused on accurate and less invasive diagnosis of minute peripheral malignancies detected by CT, which leads to earlier surgical treatments, and less invasive treatments including bronchoscopic therapies. This is facilitated by the multi-purpose bronchoscopy system consisting of by-plane fluoroscopes and a spiral CT with CT-fluoroscopy, as well as patients' cooperation with appropriate support by medical personnel. Endobronchial malignancies are diagnosed by videobronchoscopes, together with an endobronchial ultrasound and high resolution CT, and are treated by Nd-YAG laser vaporization, photodynamic therapy, brachytherapy, and tracheobronchial prosthesis.

Film conferences are held on Monday and Tuesday evenings and Wednesday morning with the gastrointestinal team and respiratory team, respectively. Furthermore, we attend all clinical conferences in each division as endoscopists.

Research Activities

To achieve more accurate endoscopic diagnosis for gastrointestinal disease, especially esophageal and colorectal neoplasms, we are trying to induce a narrow band imaging (NBI) system that enables us to narrow the bandwidth of the spectral transmittance of the

optical filters used in the light source of an electronic endoscope system.

A close association between microbial infection and gastric malignancies has been considered. After *H. pylori* eradication, 10 out of 24 dysplasia (42%) disappeared endoscopically and histologically and the response (CR+PR) rate of low-grade MALT (mucosa-associated lymphoid tissue) lymphoma was 75% (64/85, CR:58, PR:6). In addition, the relationship between *S. anginosus* and esophageal diseases, especially cancer and Barrett's esophagus, is being assessed.

Magnetic guiding systems such as the magnetic anchor for EMR of gastric cancer and robotic surgery systems are being investigated. During the EMR, a magnetic anchor is clipped to the target mucosal lesion and controlled by the external electromagnets, which produces counter-traction to make the submucosal cutting easy. Its safety and availability are tested in animal models.

Clinical Trials

The Japanese Intervention Trial of *H. pylori* (JITHP) to clarify the reversibility of gastric precancerous conditions by *H. pylori* eradication is ongoing. Finally, a total of 682 patients, with 342 in *H. pylori* eradicated group and 340 in uneradicated group were enrolled. The final outcome of this trial will be available in March 2004.

A comparative study of atrophic gastritis in Japan and United Kingdom is ongoing. Age and symptom (dyspeptic epigastric pain) matched patients without history of *H. pylori* eradication, GERD or malignancy from each decennial age 20-80 were enrolled from both countries. Atrophy and intestinal metaplasia, and corpus-predominant gastritis were marked in the Japanese patients. *H. pylori* cultured from Japanese was different from that of UK patients.

The "submucosal dissection EMR" has been widely challenged as new treatment of large superficial GI cancers. Sodium hyaluronate is known to make submucosal dissection EMR easier and safer than normal saline solution. To evaluate the safety and availability of sodium hyaluronate, a multi-center randomized trial is going on for patients with early gastric or colon cancers to be treated by submucosal dissection EMR or EMR.

Two randomized control trials (RCT) concerning colorectal neoplasm are active. One is to evaluate the inhibitory effect of lactoferrin on colorectal carcinogenesis. At present, 80 cases have been enrolled. The outcome will be obtained in 2005. The other one is to establish a reasonable surveillance program by total colonoscopy. The Japan Polyp Study (JPS) has been started since February 2003.

● D. Saito ●

Number of Endoscopic Examinations in 2003

	GIE			FBS	LS	ERCP	Total
	Esophagus	Stomach	Colon				
No. of examinations	11,009			489	107	0	15,563
EUS	235	161	45	-	-	-	441
Polypectomy*	0	10	791	-	-	-	801
EMR*	72	416	437	-	-	-	925
Laser	0	5	4	-	-	-	9
PEG	-	14	-	-	-	-	14
Stent	8	-	5	8	-	-	21

*:number of lesions GIE:gastrointestinal endoscopy EUS:endoscopic ultrasonography FBS:flexible bronchoscopy
EMR:endoscopic mucosal resection LS:laryngoscopy ERCP:cholangiopancreatography
PEG:percutaneous endoscopic gastrostomy