least 4 cm. distant from the macroscopic margin of the tumor according to the results from our histological examination.

In order to improve prognosis of cancer surgery of upper part of the stomach, complete cleaning-up of lymphnodes, radical resection of tumor with sufficient adjacent normal tissue and minimal surgical invasion such as not opening thorax seem to be considered.

Recently we designed a esophageal hiatus retractor at esophageal hiatus to enlarge lower mediastinum and resect highly situated cardioesophageal cancer without opening thorax.

The operative technique as follows:

Upper median incision was performed. After examination of metastasis in the abdominal cavity, the left liver lobe was devided from diaphragm at the left triangular ligament.

The hiatus was incised by the electric cutter about 5 cm long at right angle at 10 o'clock and cardioesophageal portion and lower part of esophagus also were extrapleuralily exposed in the mediastinum by manipulation.

Our apparatus was inserted into the hiatus and lower mediastinal portion was widely exposed.

After total gastrectomy or upper half gastric resection, esophageojunostomy or esophasogastrostomy was made in one layer suture. Suturing could be made without any difficulty under such widely exposed surgical field as was gained by opening thorax. Anterior surface of anastomosis was fixed to margin of hiatus and covered with diaphragm.

It is stressed again that the surgical field was exposed as wide as in opening thorax and surgical invasion was in minimum in this approach.

We believe that this method is recommendable for radical operation of cardioesophageal cancer.

4. RADICAL TREATMENT OF THE UPPER GASTRIC CANCER

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I would like to express my sincere thanks to professor Ueda, president of this society, who gave me an opportunity to speak before the Symposium of the Upper Gastric Cancer today.

As you may know, after graduating from Chiba University, I studied professor Seo mainly on the Esophageal Cancer, and handled many such cases.

The field of the Upper Gastric Cancer which I am going to talk about is the lower esophagus including the cardia. The reason why I am going to mention about this particular part is that as many internal doctors have been stating in this symposium, the part of cardia is the most difficult part to diagnose up to the date, and progressed cancer was found in many cases. Up to the year before the last year, I handled 3,015 cases of cancer of lower esophagus-cardia, that is, the upper gastric cancer, at Chiba University, and 1,319 cases received resecting operation. After I came to Tokyo Women's Medical College, I handled 164 cases, and 78 cases among them received resecting operation, therefore, I handled more than 1,400 cases in total.

Upper gastric cancer, or lower esophagus cancer, is in the state of progressed cancer at the present time, and according to the degree of the development, the method of the operation should be chanced. Thus, the main operations which I have used are; union of esophagus and stomach, jejunogastrostomy, so-called Roux's jejunogastrostomy, Billroth's II type of jejunogastrostomy, and type of jejunogastrostomy, which is a new method of safety operation inducing less complain after the operation, which I devised about three years ago. Other than those operations, I did special operations in a few specific cases.

The jejunogastrostomy was carried out in 329 cases in total, and the mortality was 4.9%. Esophagoduodenostomy was carried out in 85 cases, and the mortality was 7.1%. This method requires more difficult operation technique, and it is not used today.

So-called Roux's jejunogastrostomy was carried out in 17 cases, and no case of death was found.

The Billroth's II types of jejunogastrostomy is described in the text book and the most popular
method of the operation, and used widely, and I used this method in 351 cases. The mortality was 1.4%.

I used once the method of operation with gastrostoma in the case which the pylorus could be remained, in the case of incomplete suture after operation, or in order to prevent anemia after the operation and early supply of nutrients after the operation, which, as the result, increase safety cases.

I used this method in 49 cases, and the mortality was 8.2%, relatively higher. The mortality ratio includes the cases which the general condition of the patient lead to death, for example, due to the cerebral hemorrhage, rather by the operation, and deaths within a month after the operation are included in the mortality, so that it showed higher ratio.

So-called -union was deviced in order to prevent death after operation caused by back flowing of duodenal juice to the part of union of the esophagus and the jejunum where holes are most easily formed, and thus method might prevent for esophagitis. This type of operation was done in 53 cases and mortality was none.

When the gastric fistula was made in addition to the above operation, the operation was carried out in 199 cases including the operation of thoracic cavity, and the mortality due to the operation was 2%. I used this method at the present time in the resection of the cardia, where the lower esophagus is resectioned in relatively higher position. This method is characteristic because diet may be introduced from the gastric fistula through intestine immediately after the operation, and when the part of union of the esophagus and the jejunum is unhappily incomplete, the life of patient may be safe. According to many examinations, the amount of diet intake after the operation is sufficient because of the gastric fistula. In addition, the nitrogen balance after operations showed significant difference in the cases of gastric fistula being present and absent. The examination of for blood picture after operations showed advantage of pylorus part remaining operation whether whole part or a small part is resectioned.

When the back flow of duodenum juice to the part of union was examined by X-ray, more than 90% of whole cases in the -union showed no sign of back flow of duodenum juice, but 75% in Brown's union showed back flow of bile or duodenum juice. This might cause the esophagitis in high percentage, and when the union is incomplete, the life of patient may be exposed to dangerous.

If I can show you the X-ray film, you may understand the situation well; in the Brown's union, diet is flowed back from the gastric fistula, but in the -type of union, the introduced diet and the duodenum bile is not flow back, but transferred to the intestine of anus side spontaneously. The complain of the remote part after the operation is far less as I have been telling you because the esophagitis is highly prevented, and the accompanied heart burn, nausea and pain of the breast are highly reduced in the case of -union. Examination of back flow esophagitis after operation and other complications showed lower incidence in the -union, lower pulmonary complication, no reduction of body weight and excellent nitrogen balance, and -union has advantage in many points.

As the routine operation, I use the -union equipping the gastric fistula in the resection of cancer of upper stomach and lower esophagus-cardia.

Now, I examined the world-wide statistics up to the last year concerning how many patient could live more than 5 years after the operation, and the result is shown in the Table, and in this department, the number increased, and we have as much as 139 cases of living patient more than 5 years. The far results were examined in the operation methods for the lower esophagus-cardia part, and in the most simple operation, the resection of the cardia, the survival ratio is one to four, or 25.5%. This does not mean that the good far result was not obtained because of the used operation method, but cancer was not developed so that simple cardia resection was employed, in other words, the cancer was in the earlier stage, then the far result was excellent.

As the conclusion, the diagnosis of the cancer of lower esophagus cardia part, or upper gastric cancer can be made very rapidly in the early stage by the development of diagnotic instrument, fiberscope and reverse camera. Today, cancer of early stage and cancer of mucous membrance are discovered in high percentage in the case of operation in my department. I think the