Roentgenological and Endoscopic Findings of Malignant Lymphoma

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Clinical diagnosis of sarcoma of the stomach is difficult; the exact diagnosis is frequently not made until the time of surgery or autopsy, for it can only be established by the histological examination. Sarcoma of the stomach is commonly classified into differentiated and undifferentiated types. 12 cases of leiomyosarcoma, which belongs to the differentiated type, have hitherto been experienced in our Department. These cases were preoperatively diagnosed as submucosal tumor in 4 cases, leiomyoma in 3, ectopic pancreas in 2, and carcinoma of the stomach in 3.

Malignant lymphoma is an undifferential type of sarcoma and includes lymphosarcoma, reticulum cell sarcoma and Hodgkin's disease. Usually the malignant lymphoma cannot be differentiated from carcinoma of the stomach on the basis of gross appearance. In this paper, we describe the detailed roentgenological and endoscopic findings of the superficial type of malignant lymphoma and emphasize the clinical significance of adding this type to the classification of malignant lymphoma proposed by previous workers. We accordingly divided malignant lymphoma of the stomach into four types; superficial (Fig. 1), ulcer (Fig. 2), polypoid (Fig. 3) and giant fold types (Fig. 4).

MATERIALS AND METHODS

We studied 17 cases of malignant lymphoma. Specimens for histology were obtained by operation in 13 cases, and by autopsy in the remaining 4 cases. Histological examination revealed that 2 of them were Hodgkin’s disease and 15 were reticulum cell sarcoma.

Following x-ray of the stomach, endoscopic examination was performed within one week. In the cases operated, these procedures were done within 10 days prior to the operation.

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Fig. 1. Superficial type of malignant lymphoma.
Fig. 2. Ulcer type of malignant lymphoma.
Fig. 3. Polypoid type of malignant lymphoma.
RESULTS

Superficial type

The prominent x-ray feature of this type was the formation of shallow multiple ulcers, depression of which was similar to that of IIc type early gastric

Fig. 4. Giant fold type of malignant lymphoma.

Fig. 5. X-ray picture of the ulcer type.

Fig. 6. Endoscopic picture of the ulcer type.
cancer. Thus, the superficial type of malignant lymphoma must be distinguished from IIc type early gastric cancer. Although thinning of mucosal folds toward the ulcer was occasionally found in this type, it was unable to trace as a demarcating line. Mucosal elevation was frequently seen in an advanced stage of the superficial type, which was a significant finding (Fig. 5). Despite wide spread of the lesion, distensibility of the gastric wall was maintained so that the stomach was well distended by inflating air as observed by the double contrast x-ray examination. Endoscopically, irregular-shaped multiple ulcers were associated with numerous erosions and submucosal tumorous elevation. No thinning of the mucosal folds was found endoscopically and the surrounding mucosa of the lesion was commonly lustrous (Fig. 6).

**Ulcer type**

The prominent features of the x-ray examination were large irregular-shaped ulcers, and enlarged and rounded tips of the mucosal folds toward the ulcers producing mound-like filling defects. In many cases, numerous ulcers or erosions were found (Fig. 7). So it is important to distinguish this type from III or III+ IIc type early gastric cancer, and Borrman II or III type advanced gastric cancer. Endoscopically, a lard-like, white colored coating was observed at the bottom of the large ulcer. The changes such as bleeding, ulcerous or erosive lesions facilitated the diagnosis. Club-like enlargement of mucosal tip without fusion, or unilateral ring-shaped plate-like elevation formed in the surrounding of the

![Fig. 7. X-ray picture of the ulcer type.](image1)

![Fig. 8. Endoscopic picture of the ulcer type.](image2)
ulcer was a prominent feature by which malignant lymphoma was sometimes distinguished from gastric cancer (Fig. 8).

Fig. 9 shows our case of malignant lymphoma which simulated Borrman II type gastric cancer by x-ray examination. However, two irregular-shaped ulcers with lard-like white coating were seen and mucosal elevation which was not demarcated from the surrounding mucosa was also demonstrated endoscopically (Fig. 10). It must be emphasized that the differential diagnosis between malignant lymphoma and Borrman II type gastric cancer is difficult, particularly when a solitary ulcer without concentration of mucosal folds was demonstrated by endoscopy.

Polypoid type

X-ray features of this type were characterized by a tumorous shadow or rounded filling defect, so it was difficult to differentiate this type from I type early gastric cancer and advanced polypoid cancer (Fig. 11). Ulcerous or giant fold lesions found around the polypoid lesion made it possible to diagnose this type. Endoscopically, color of the polypoid lesion was indistinguishable from the surrounding mucosa (Fig. 12).

Giant fold type

The giant fold type of malignant lymphoma was usually associated with lesions of irregular-shaped multiple ulcers, erosions or mucosal elevations (Fig. 13). Scirrhus type gastric cancer should be differentiated from this type.
DISCUSSION

Classification of malignant lymphoma of the stomach on the basis of gross appearance into extragastric, intragastric and infiltrative types by Konjetzny has been commonly used. Sano (1974) recently classified malignant lymphoma
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depending on its gross appearance in an attempt to differentiate it from carcinoma of the stomach. According to him, there are five types of malignant lymphoma; i.e., superficial, ulcer, polypoid, fungating and giant fold types. Malignant lymphoma was also classified by Wang and Peterson (1956) and Block (1967) on the basis of roentgenological features as follows; fungating intraluminal mass type, ulcer crater type, type of diffuse enlargement of the gastric mucosal folds, scirrhus type, and exogastric type.

Classification by Sano is based on the gross appearance of the resected specimens, and those by Wang and Peterson, and Block depend on the x-ray study and include only malignant lymphoma in the advanced stage. We experienced cases of malignant lymphoma of the superficial type and emphasized on the basis of x-ray and endoscopic studies that the superficial type should be added as one important type to the classification of malignant lymphoma hitherto utilized. Therefore we propose to divide malignant lymphoma of the stomach into four types; superficial, ulcer, polypoid and giant fold types. It should be pointed out that each of these four types is difficult to make differential diagnosis from a particular type of gastric cancer; i.e., the superficial type of malignant lymphoma from IIC type early gastric cancer, the ulcer type from III or III+IIC type early gastric cancer and Borrman II or III type advanced cancer, the polypoid type from I type early gastric cancer and advanced polypoid gastric cancer, and the giant fold type from scirrhus type gastric cancer. However, we might say that it is not impossible to differentiate malignant lymphoma from gastric cancer, if both x-ray and endoscopic studies were made carefully. Therefore, a wider application of the combined examinations, such as roentgenological and endoscopic examinations, is important for a more exact differential diagnosis between malignant lymphoma and carcinoma of the stomach.

References

