

Lymphographic Classification of Malignant Lymphoma

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Summary

In an attempt to raise the diagnostic accuracy of lymphography in malignant lymphoma, especially in early stages, the disease were radiographically classified into 3 groups such as atypical, typical and advanced group mainly based on the lymphographic findings. The findings showed characteristic features corresponding to the stages of the disease.

Atypical group showed the following findings: small filling defects, increased number of lymph node and visualization of the marginal sinus. The findings were regarded as those of early stages of malignant lymphoma.

Lymphography is regarded as the best radiographic method to evaluate malignant lymphoma. This may only be valid in the well developed stages of the disease because of a presence of the typical findings on lymphogram. However, in early or late stages, the diagnosis of the disease may be difficult and sometimes impossible because lymphographic criteria in such stages has not as yet been established.

In an attempt to improve the diagnostic accuracy of lymphography especially in early stages of malignant lymphoma, lymphograms were analysed in detail particularly in consideration of the growing process of the tumor.

Materials and Method

The lymphograms of 68 proved cases of malignant lymphoma were divided into the following 3 groups based on their dominant findings.

1. Typical group (30 cases): Lymphadenogram shows the typical findings as numerous papers have reported such as increased in number and size and irregular storage pattern of contrast filling in the lymph node (1, 2, 3).

2. Atypical group (27 cases): This does not show the typical findings as mentioned above (resulting in a difficult problem to solve)
3. Advanced group (11 cases): The late stages of the disease manifested by a marked enlargement of lymph node and large filling defects.

Then the lymphograms were studied on the number at the level of the third lumbar spine and size (length and width), irregularity of the margin, visualization of the marginal sinus and storage patterns of contrast filling, which were divided into 4 patterns: F (foamy), G (granular), L (lacy) and D (defect).

Results

The results of lymphographic findings of the 68 cases are shown in Table 1. Concerning to the visualization of the marginal sinus, the numerical values show the percentages of the cases in which the marginal sinus could be seen in more than five lymph nodes as a circle or a semicircle line along the lymph node. A reasonable difference can be seen between normal and the atypical group. The findings shown in Table 1 were also evaluated comparing with the histological types of malignant lymphoma, but any significant difference could not be seen among them.

In an observation of the storage patterns of contrast filling of lymph node, of 18 cases of atypical group (67 %) showed small filling defect, sized 2 or 3 mm in diameter, numbered less than 2 or 3 in a lymph node. Of 4 of the remaining cases (15 %) showed granular pattern of contrast filling. However, the findings had no relationship to their histological types.

Table 1 Lymphographic Findings in Malignant Lymphoma

Cases	Findings	Number of Lymph Node (at the level L-3)	Size (width/length)	Visualization of Marginal Sinus (%)	Irregularity of Margin (%)
Normal (10 cases)		10.6	0.49	6	18
Atypical Group (27 cases)		15.1	0.53	26	60
Typical Group (30 cases)		15.1	0.60	63	71
Advanced Group (11 cases)		9.9	0.59	82	70

In typical group, the patterns of contrast filling showed some different characteristic features, corresponding to their histological types, to suggest a possibility of the histological diagnosis.

However, in advanced group, the patterns of contrast filling were quite confused having no relationship to their histological types.

Discussion

Lymphographic diagnosis of early staged malignant lymphoma has been considered to be a difficult problem because the findings are not typical to differentiate the disease from the other disorders such as inflammatory, granulomatous and reactive changes of lymph node. To solve the problem, the

lymphograms were evaluated, classifying into 3 groups, mainly based on their findings.

Atypical group showed certain prominent features such as small filling defect, increase in number of lymph node and contrast filling of the marginal sinus.

On the other hand, the results obtained in 6 cases of second look lymphography, which was carried out after 6 to 12 months from the initial atypical lymphogram, emphasized that as the tumor advanced, the findings followed the process from atypical group to typical group and up to advanced group, producing the characteristic features corresponding to their stages of the disease.

From this point of view, it is judicious to consider that the findings observed in atypical

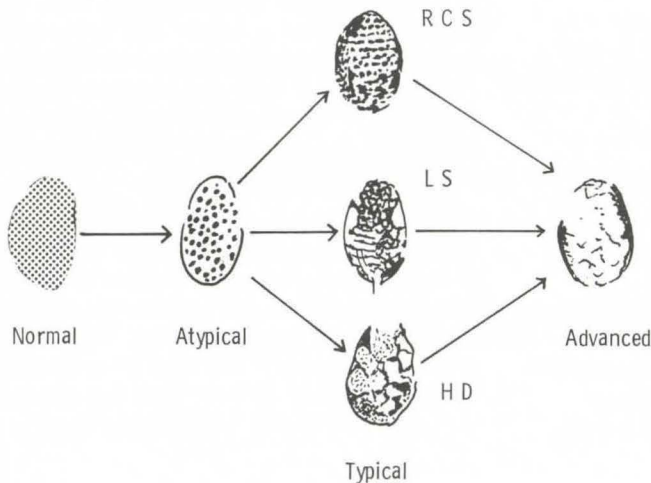


Fig. 1 Schematic drawing of lymphographic patterns. In the growing aspect of malignant lymphoma



Fig. 2 Reticulum cell sarcoma in atypical group. Enlargement can not be seen, but marginal sinus of lymph node and small filling defects are well seen



Fig. 3 Hodgkin's disease in typical group. Enlargement, foamy pattern of contrast filling and marginal sinus are well demonstrated throughout the lymph nodes

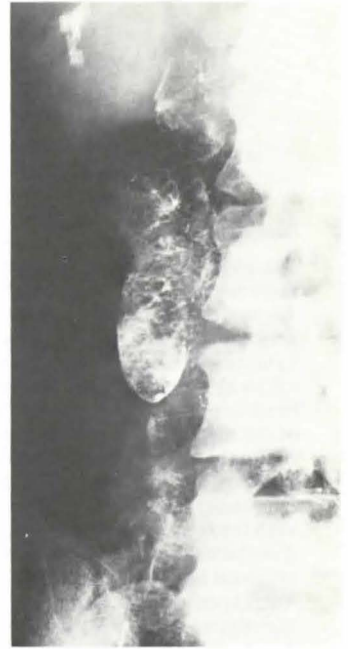


Fig. 4 Hodgkin's disease in advanced group. Lymph nodes are markedly enlarged with irregular, large filling defects. Marginal sinuses are well delineated

group should be allowed to recognize as the findings of early stages of malignant lymphoma.

The growing aspect of malignant lymphoma by lymphographic demonstration are shown in Fig. 1.

The incidence of contrast filling of marginal sinus increased more and more, as the disease advanced. This can be explained by the assumption that the growing tumor in a lymph node will increasingly make the medullary sinus to occlude, leading to a disturbance of contrast filling of the parenchyma of lymph node and this will force the contrast agent to fill the

marginal sinus. Irregularity of the margin may be insufficient filling or filling defects of the contrast agent due to compression or invasion as a result of tumor growth.

References

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