LYMPHOGRAPHY IN FEMALE GENERAL TRACT MALIGNANCY†

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Lymphography is a very useful investigation in gynaecological diseases to demonstrate early metastases in the pelvic and abdominal lymph nodes. Large lymph node enlargements can be diagnosed clinically but early and minimal metastatic spread to the pelvic and abdominal lymph nodes cannot be detected by any of the investigation procedure. Lymphography is the only method by which one can detect these lymph nodes.

This observation and results of 60 cases studied are based on our recent experience with lymphography at the J. K. Institute of Radiology and Cancer Research, Kanpur.

Table I shows the cases investigated by lymphography according to primary neoplasm in female genital tract.

TABLE I

	No. of cases	Percentage
Normal (control)	4	6.6
Cervix	43	71.6
Uterus	5	8.4
Ovary	3	5.0
Vulva	1	8.4
Total	60	100

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Material and Method

The material consisted of 60 cases which includes 4 normal control and 56 abnormal cases. The technique consists of either exposure of the lymphatic vessel (lymphangiography) or exposure of the lymph node (lymphadenography) with full aseptic precautions and under local anaesthesia as described by Kinmonth (1952) and Bruns and Engest (1956). For lymphangiography injection of Evan's blue 11% mixed with 1 cc 2% xylocaine was given in between the 1st and 2nd toe web. Fifteen minutes later 2½ inches above the site of injection an incision of 2 cm was made. 2-3 blue coloured streaks of lymph vessel were visualised. One of them was dissected and canalised by needle No. 27 attached to a polythene tube connected to a syringe having "Lipiodal Ultra Fluid". The dye was passed at a rate of 1 cc/10-15 minutes. The total amount of dye used was 10-20 cc. for each lower limb. In case of lymphadenography one palpable inguinal lymph node was exposed. It was dissected, punctured as in lymphangiography and the dye was injected in the same way.

The anterioposterior view skiagram of pelvis and abdomen were taken, (i) Immediately, (ii) after 24 hours and (iii) after 48 hours of the injection. Chest skiagrams were taken after 24 hours to detect any pulmonary complication i.e. oil embolism.

Observations and Discussion

A series of 60 cases were investigated, 4 normal control and 56 abnormal cases, which include 43 cases of cancer cervix, 5 cases of carcinoma uterus, 3 cases of ovarian tumour and 5 cases of carcinoma vulva. The distribution and results of these cases are shown in Table II.

TABLE II

Showing Results of Lymphography

	Total	Abnormal	Suspicious	Normal
Cervix	43	37	—	6
Uterus	5	2	2	1
Ovary	3	—	1	2
Vulva	5	4	—	1
Total	56	43	3	10

The size of a normal lymph node varied from 0.5 cm to 3.2 cm. The shape and size of the lymph node varied at different places. In para-aortic these were rounded and elongated, while external iliac and inguinal region lymph nodes were slightly larger in size. The margins were regular and internal architecture showed normal homogeneous reticular pattern (Jackson *et al*, 1961; Herman, 1963). The internal iliac group were not visualised by this procedure Herman (1963) (Fig. 1).

Abnormal appearance was seen in 43 cases (76.8%), suspicious in 3 cases (5.3%) and normal in 10 cases (17.9%). Viamonte *et al* (1963) showed 30% abnormal in a series of 130 cases, while Ranjan *et al* (1969) found 69.24% abnormal, 15.30% suspicious and 15.38% normal cases in their series. The incidence of abnormal visualisation in our series is slightly higher than the above authors. This may be due to more advanced cases in our series.

The criterion of abnormality (Fig. 1) in metastasis were:

(a) light to moderate enlargement of the lymph nodes.

(b) Irregularity of the margins of the lymph nodes.

The comparison of this technique with

(c) Peripheral filling defect, giving it a moth eaten appearance of the internal architecture of the node (Fig. 2).

(d) Evidence of lymphatic obstruction resulting in lymphstasis, and collateral vessel formation.

Jackson *et al* (1961) in a series of 140 patients also mentioned partial nodal replacement and moth eaten appearances of the lymph node in metastasis. Wallace *et al* (1961) also supported these views. Viamonte *et al* (1962) described this appearance in metastasis due to replacement of the nodal tissue by tumour cells. Averette *et al* (1962) performed lymphography in 26 cases for carcinoma cervix with metastasis in lymph nodes and found marginal filling defects. Ranjan *et al* (1969) investigated 13 cases of metastatic disease and noted the main features in lymph node involvement as enlargement, marginal filling defects and lymphatic obstruction. Theodore *et al* (1963) described similar lymphographic features in normal subjects in the femoral and inguinal region due to infection and fibrosis. In all our abnormal cases the involvement was above this level. Thus our finding confirmed to that of most of the workers.

The metastatic lymph nodes can be differentiated from lymphomas by the following lymphographic features (Fig. 3).

(a) Moderate to marked enlargement of the lymph nodes.

(b) Worsening of the granular pattern of the lymph node.

(c) Preservation of marginal structures (regular margin).

(d) Irregular central filling defect.

(e) Foamy and lacy pattern of the lymph nodes.

Summary

Lymphography was performed in 60 cases with suspected metastatic lymph nodes involved from female genital tract which include 4 normal control cases. The normal size of lymph node varied from 5 to 3.5 cm. and exhibited a regular margin and homogeneous reticulogranular pattern. The metastatic lymph nodes showed slight enlargement of the lymph nodes with peripheral filling defects and moth eaten appearances.

References

1. Averette, H. E., Richard, C. H., Viamonte, M. J. R., Raymond, E. and Ferguson, J. H.: Cancer, 15: 769, 1962.
2. Bruns, S. and Engest, A.: Acta. Radiol., 45: 389, 1956.
3. Herman: Radiol., 80: 182, 1963.
4. Jackson, L. and Wallace, S.: Ann. Intern. Med., 54: 5, 870, 1961.
5. Kinmonth, J. B.: Clin. Sci., 11: 13, 1952.
6. Ranjan, B. K., Singh, M. and Gupta, N. M.: Ind. J. Radiol., 23: 229, 1969.
7. Theodore, D., Robert, J. and Blahut, A. C.: Radiol., 80: 175, 1963.
8. Viamonte, M. J., Milton, B., Myer, M. S., Norman, M. K. and Rayomond, E.: J. of Urology, 87: 85, 1962.
9. Viamonte, M. Jr., Altman, D., Parks, R., Blum, E., Belivacqua, M. and Richer, L.: Radiol., 80: 903, 1963.
10. Wallace, S., Jackson, L., Sacaffer, B., Gould, J., Greening, R., Weiss, A. and Krammer, S.: Radiol., 76: 179, 1961.

See Figs. on Art Paper II-III