

adrenaline induced similar increases in the neutrophil counts in both groups (67% and 53% over the baseline levels), while lymphocytosis was even more pronounced in Group 1 (240% compared with 160% in Group 2; not significant). However, the difference in the mean decrease in splenic size in these smaller subgroups was found to be significant ($9.0 \pm 1.9\%$ and $24.0 \pm 3.4\%$; $P < 0.01$).

DISCUSSION

Analysis of the changes in peripheral blood was carried out to determine whether differences in the somatic response to adrenaline might account for observed differences in splenic contraction. The data led us to the conclusion that impaired splenic contraction in patients with involved spleens was not an accidental result of feeble vascular reaction but reflected structural changes in the organ. This is thought to be due to a presence of multiple tumor nodules, with development of concomitant sclerotic processes (1,7). The latter may explain the limited contraction in patients whose spleens contained few macroscopically visible lesions.

Since splenic involvement has not been documented in any of the 11 cases in which the decrease in splenic size exceeded 23%, the adrenaline test appears to be particularly useful for ruling out splenic disease. Long-term clinical observation of 17 patients who had demonstrated good splenic contractility (25–50%) supports this opinion, although in them the lack of splenic involvement had not been surgically demonstrated. Still, it is clear that a contraction of 23% or more is highly suggestive of an uninvolved spleen, although the sensitivity of the test is low (seven of 18 in Group 2 showed less than 23%).

Apart from tumor proliferation poor splenic contraction may result also from an individually insufficient dose of adrenaline. It may also be imitated by an inadequately obtained baseline scan, as it was in five of 18 patients. Thus, clinical evaluation of the reaction's intensity is necessary to avoid false-positive results. This

is why five of the above-mentioned patients were excluded from further analysis. With our choice of 23% contraction or less as the indication of splenic involvement, one obtains a sensitivity of 100% (15 out of 15 in Group 1 detected) and a specificity of 85% (two out of 13 in Group 2 included).

Since it has been reported (8,9) that intra-abdominal spread of Hodgkin's disease frequently appears to originate in the spleen and to involve progressively contiguous abdominal lymph nodes, it would be reasonable to use the adrenaline test to refine the indications for laparotomy in Stages I and IIA patients. Since the long-term influence of splenectomy on immunity in surviving patients is not yet clear, the opportunity to spare a proportion of patients from operative staging seems attractive.

REFERENCES

1. KADIN ME, GLATSTEIN E, DORFMAN RF: Clinicopathologic studies of 117 untreated patients subjected to laparotomy for the staging of Hodgkin's disease. *Cancer* 27: 1277–1294, 1971
2. BAISOGOLOV GD, KHMELEVSKAYA ZI, PAVLOV VV, et al: Use of diagnostic laparotomy and splenectomy in lymphogranulomatosis. *Med Radiol* 18: 80–86, 1973
3. KAPLAN HS: *Hodgkin's Disease*. Cambridge, Harvard University Press, 1972
4. MANDUCA A, GENTILE S, DEGAETANO M, et al: Valutazione scintigrafica della splenocontrazione adrenalinica nello studio delle splenomegalie. *Rass Int Clin Ther* 50: 1325–1337, 1970
5. SPENCER PP, LANGE RC, SCHWARTZ AD, et al: Radioisotopic studies of changes in splenic size in response to epinephrine and other stimuli. *J Nucl Med* 13: 211–214, 1972
6. FISCHER I, WOLF R: Die scintigraphie der milz mit Cr^{51} . *Deutsch Med Wschr* 88: 305–308, 1963
7. YAM LT, CHIN-YANG L: Histogenesis of splenic lesions in Hodgkin's disease. *Am J Clin Pathol* 66: 976–985, 1976
8. AISENBERG AC, QAZI R: Abdominal involvement at the onset of Hodgkin's disease. *Am J Med* 57: 870–874, 1974
9. DESSER RK, MORAN EM, ULTMANN JE: Staging of Hodgkin's disease and lymphoma. *Med Clin N Am* 57: 479–498, 1973

ERRATA

In the article entitled "Quantitative Measurement of Skin Perfusion with Xenon-133" by Michael J. Daly and Robert E. Henry, appearing in *J Nucl Med* 21: 156–160, 1980, on p. 157 in the equation, K = slope constant of Xe-133 washout from the intradermal site (min^{-1}), not ($\text{ml}/\text{min}^{-1}$)

In the article entitled "False Left-Ventricular Aneurysm: Diagnosis by Noninvasive Means" by Gary Onik et al., appearing in *J Nucl Med* 21: 177–182, 1980, line 13, right column, p. 179 should read: scintigram (40, 43, 50, 65) and true LV aneurysm can also.

In the article "The Deltoid Tuberosity—A Potential Pitfall (The "delta sign") in Bone-Scan Interpretation: Concise Communication" by D. Fink-Bennett and J. Vicuna-Rios appearing in *J Nucl Med* 21:211–212, 1980, the authors' affiliation should read, "William Beaumont Hospital, Royal Oak, Michigan."