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The above letters were referred to the authors of the article in question, who offer the following reply:

To the Editor: We agree with Dr. O'Connor that in formulating a hypothesis about the origin of Hodgkin's disease, one should consider its geographic variation in age distribution. In working out our analogy between Hodgkin's disease and paralytic poliomyelitis,¹ we did rely on just such information, including the excellent study by Correa and O'Connor.² Specifically, in developing areas, there is an early incidence peak in childhood, essentially among boys, and there are relatively low rates among teen-agers and young adults. In contrast, in developed areas there is little disease in early childhood, but incidence rises sharply among teen-agers and peaks at age 25. This shift in the initial age peak that is coincident with economic development parallels that of polio in the pre-vaccine era. Then, the shift reflected the effect of two factors: the change in the mean age at infection and the increased risk of paralytic disease with age at infection.³ By analogy, Hodgkin's disease may also occur as a sequel of infection by a prevalent virus, with risk of oncogenesis increasing with age. Early infection would therefore be generally protective, but the disease would still occur among children. Although most of the cases that we reported on were of the nodular-sclerosis type, 24 per cent were of mixed cellularity, according to hospital records. In terms of risk factors, patients with the mixed-cellularity type were quite similar to patients with other types. Therefore, the histologic subtypes are unlikely to represent independent etiologic entities but may instead reflect variation in host response, according to age, sex, and perhaps nutritional or immunologic factors, to a single etiologic process. Dr. Cunningham's proposal that overnutrition itself may be a risk factor for Hodgkin's disease is of interest, but we have no data to evaluate its validity.

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HEMOPTYSIS AFTER FLUSHING SWAN-GANZ CATHETERS IN THE WEDGE POSITION

To the Editor: The *Journal* has had an important role in introducing Swan-Ganz catheters and describing their complications.¹⁻⁴ We wish to report two cases of a known complication of this procedure, hemoptysis,^{5,6} caused in an unusual way: by flushing the catheter in

the wedge position. In each patient, 5 to 8 ml of 5 per cent dextrose solution was injected over a two-to-three second period. Since recent reports by us and others⁷⁻⁹ have found a use for pulmonary wedge injections to create echocardiographic contrast on the left side of the heart, we believe that more physicians may attempt this maneuver, and therefore we desire to bring this potential complication to their attention.

A 64-year-old woman was transferred from another hospital for cardiogenic shock due to an acute anterior myocardial infarction. A Swan-Ganz catheter was inserted to guide therapy. On the following day, a small amount of hemoptysis was noted after hand injection in the pulmonary wedge position. A chest film obtained later showed a probable pulmonary infarct distal to the catheter. The catheter was repositioned in another lobe and more proximally. Slow recovery ensued, with complete resolution of the lung infiltrate.

A 50-year-old man was admitted to the coronary-care unit for chest pain. The results of a cardiopulmonary examination were within normal limits, electrocardiography showed an acute antero-septal myocardial infarct, and cardiac enzymes were elevated. A Swan-Ganz catheter was inserted. On the third day the catheter was flushed by hand with a small syringe while in the wedge position. About 20 seconds later the patient began to cough up small amounts of blood, and hemoptysis persisted for several hours. The chest film showed no infiltrate, and the Swan-Ganz catheter was removed. The patient recovered uneventfully.

It is now our policy not to flush Swan-Ganz catheters in the wedge position. New guidelines to prevent recurrence have been set in our coronary-care unit since the above incidents occurred. However, Reale et al.⁸ and we⁹ have performed pulmonary wedge injections in the catheterization laboratory to obtain left-heart echocardiographic contrast in a total of 61 patients, without adverse effects. The absence of complications in both series may have been due to the fact that the catheter remained in the wedge position for a very brief time.

Since injections must be performed with catheters near the wedge position in efforts to cause transpulmonary transmission of echocardiographic contrast, it is important to realize that pulmonary-arterial rupture with hemoptysis is a potential complication.

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CYSTEAMINE THERAPY IN NEPHROPATHIC CYSTINOSIS

To the Editor: Yudkoff et al. state that cysteamine treatment stabilized glomerular function in two of five patients with cystinosis.¹