To The Editor:

I have just had occasion to read the article, "Radiology in Lung Cancer: Problems and Prospects" by Drs. Armstrong and Bragg, which appeared in the September/October 1975 issue of *Ca—A Cancer Journal for Clinicians*. This is a very excellent review of the subject, but I would disagree with the authors on a number of points. I agree that "an improved technique of screening detection is an obvious priority for the future." Certainly, we have failed to a considerable extent using X-ray examination, a failure not entirely attributable to the imaging process. More to the point is our failure to perform repeated routine examinations in high-risk patients, a procedure common in many European countries, and our failure to recognize small lesions in the lung which, in retrospect, can be found with ease. Anyone who has seen a great many films that were taken six months or more before diagnosis, realizes how many patients have roentgen signs of disease consistent with primary carcinoma that are overlooked until the lesion has grown appreciably. This is not an exclusively American experience, as evident from the excellent collection of cases by Tala in Finland and Veeze in Holland. In Holland, the percentage of failures to detect a lesion has been studied both prospectively and retrospectively; the results are salutary. These studies are largely related to peripheral lesions, which are found with relative ease if one has a high index of suspicion, the roentgen technique is good, and postero-anterior and lateral views of the chest are made. Central lesions are much more difficult to detect.

I disagree with the statement that "bronchogenic carcinoma originates in the major rather than peripheral bronchi in 75 percent of cases." This is contrary to studies which I have made and which have been confirmed by many investigators, including Garland, Boucot, Liebow, Raeburn and Spencer, Walter and Pryce and many others. It has been found that retrospective studies of the roentgen findings indicate that a substantial percentage of lesions, which appear to be in a major bronchus when symptoms appear or at autopsy or even surgery, do in fact originate peripherally and extend centrally. In Tala’s series of 168 cases, selected because of the availability of previous films, only 43.5 percent were central in origin. Further evidence is given by the remarkable study of Raeburn and Spencer, which found a number of occult carcinomas by thin slicing of the lung at autopsy. These occult carcinomas had been missed in the ordinary autopsy examination because of their small size. Nine out of 10 of
these lesions proved to be peripheral in origin.

The reliance on the cell type for prognosis has not proven to be of great value. The results in peripheral carcinomas reported by Steele et al. and by Jackman et al. indicate that after three and five years, the difference in salvage between the various cell types is relatively small. The major factor, at least in peripheral carcinomas, appears to be the size of the lesion at the time of surgery.

I realize that many of these statements are controversial and that the experience of various investigators present different aspects, but I feel that a somewhat more favorable view of the possibilities of roentgen examination should have been included.

The studies by Fontana and associates, as well as the group at Johns Hopkins and at Memorial Sloan-Kettering Cancer Center, no doubt point the way toward better results. It is obvious from the preliminary findings that roentgen examination is by far the superior method for detecting peripheral lesions when they are small, while other methods may be superior in the detection of tumors of central or major bronchial origin. It is also possible that improvement in X-ray imaging, which is being undertaken by various groups, may result in roentgen signs that permit detection at an earlier period.

The extremely depressing fact that 80 percent of the life history of the cancer has been incurred prior to the first possible demonstration of the lesion in the lung, might be of little consequence if the survival rate at five or 10 years were still acceptable. After all, some such process must be occurring in many cancers before they are detected either by symptoms or signs, but this does not discourage us from every effort to save the individual. The remarkable results achieved by Steele et al. and Jackman et al. in small selected lesions should encourage us. I have tried to summarize this evidence with regard to peripheral lesions. Their findings certainly suggest that the situation is not hopeless and that X-ray examination, when properly pursued and properly interpreted, has a great deal to contribute to the long-term survival of individuals with cancer of the lung.

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