bronchus, following which at least 40 ml of aspirate per lavage were obtained. A cell button was then prepared for examination.

We would like to also note that we now stain our brushing, biopsy, and bronchoalveolar lavage specimens with an improved rapid methenamine silver stain. The silver stain step is completed in one minute, with sensitivity equal to classic methods.4

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Michael Koss, M.D., Los Angeles

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To the Editor:

We appreciate the positive comments of Hartman and Koss on the treatment of the biopsy fragments in our study.1 Although the use of the word “correlation” in their report is not clear to us, we realize the high degree of sensitivity of bronchial brushings (BB) and bronchial washings (BW) in their hands. This is the result of their competence, but probably obeys to other factors such as the use of a large brush, large volumes of saline solution for washings, and the number of slides prepared—up to ten per case. Their use of a simple and reliable modification of the methenamine silver stain is also noteworthy.2 Yet our study clearly shows that the actual diagnostic contribution of BB and BW to that of transbronchial biopsy with the touch preparation (TP) is only 2 percent. For such a small gain, it seems to us, it is too onerous to use so much technical time, expense, and professional effort in evaluating BB and BW specimens. Indeed, since the publication of our paper we have taken the additional step of eliminating altogether the TP which allows a diagnosis the same day of the biopsy but overall raises the diagnostic yield only 1 percent.

Because of the high degree of awareness among our clinicians, patients suspected of having Pneumocystis carinii pneumonia are often treated before the results of fiberoptic bronchoscopy. Repeat biopsy seems justifiable in patients with a high suspicion index and non-representative biopsy specimens. Adherence to the roentgenographic and pathologic criteria set forth in our paper probably eliminates the 3 percent false negative rate that can be expected with this approach.

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Coronary Artery Bypass Grafting in Young Adults

To the Editor:

In a recent article,1 Cohen et al noted unfavorable long-term results in their patients who had undergone coronary bypass grafting at 35 years of age or less. Young adults with coronary artery disease do present special problems, but the discouraging experience documented for their small group of patients (40 patients less than 36 years old) is not representative of the palliation that can be achieved for patients in this age group.

In a study of 107 patients who had undergone coronary bypass grafting at age 35 years or less and who were followed for ten years after surgery (mean postoperative interval, 115 months), we documented survival of 94 percent at five and 85 percent at 10 postoperative years, and event-free survival of 77 percent at five and 53 percent at ten postoperative years.2 Both survival and event-free survival were adversely influenced by elevated serum cholesterol (>300 mg/dl) and diabetes. An important observation was that the patency of saphenous vein grafts in young adults was inferior to vein graft patency in older patients. Our studies of bypass graft patency and those of others3 have shown that long-term vein graft patency is decreased by the presence of hyperlipidemia and diabetes, and it seems likely that the adverse influences these coronary risk factors exert on the clinical result after bypass surgery may be mediated by an increase in the development of vein graft atherosclerosis. Young adults with coronary artery disease tend to have important risk factors and appear particularly prone to the development of vein graft atherosclerosis.

Fortunately, the internal mammary artery is available as an alternative bypass graft. The long-term patency of internal mammary artery grafts is not decreased by the presence of hyperlipidemia, diabetes, or any other coronary risk factor. For our series of young adults, the patency rate of internal mammary artery grafts was 93 percent, compared with 56 percent for saphenous vein grafts. Although the ten-year clinical results in our young adults treated surgically were not equivalent to those in the age-matched normal population, they were not nearly as dismal as those noted by Cohen et al.1 Young adults are subject to vein graft failure and should receive revascularization with mammary artery grafts, including bilateral mammary artery and sequential mammary artery grafts, whenever feasible. With these techniques, coronary artery surgery can offer many young adults effective palliation.

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To the Editor:

Drs. Lytle and Loop refer to our recent article on coronary artery bypass grafting in patients 35 years of age or less. In their own study of 107 patients who underwent coronary artery bypass grafting at age 35 years or less, they also noted a poor (53 percent) event-free survival rate at ten years following surgery. Considering that this event-free survival occurs in a group of patients who are now less than 45 years of age, this seems like a poor postoperative result, similar to that which we found in our own series. Again, a 15 percent mortality rate ten years following coronary bypass graft surgery in patients also now 45 years of age or younger seems to be a poor postoperative result, similar to that in our own series.

Drs. Lytle and Loop noted that survival and event-free survival are adversely influenced by elevated serum cholesterol levels and diabetes. They did not, however, include a control group of middle-aged and elderly patients, as we did in our study. Our study showed that, although the young patients might have an increased level of hyperlipidemia compared to the general population, there was basically very little difference in the number of risk factors or the type of risk factors present in the young population vs matched middle-aged and elderly patients with similar levels of coronary disease. We therefore concluded that the type or number of risk factors were not the reason for the difference in long-term event-free survival between the various age groups, but that age alone seemed to be the more critical variable.

We do not yet have a long-term series of patients in this age group who have had internal mammary artery grafts but, following the recommendations of Drs. Lytle and Loop for both this age group and more advanced age groups, we now utilize internal mammary artery grafts for all young patients. Thus, we agree with Drs. Lytle and Loop that when coronary artery bypass grafting is indicated in this population, mammary artery grafts should be used for the major vessels whenever technically feasible.

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Relative Orientation of the Ciliary Central Pair in the Immotile Cilia Syndrome

To the Editor:

Ramet et al (Ches 1986; 90:138-40) report that a diagnosis of Kartagener's syndrome was made in a newborn infant by means of electron microscopy of a "nasal biopsy". Confusion arises from the use of the term "nasal biopsy", since use of a microcurette usually allows only a nasal scraping, not biopsy sampling. The importance of this distinction relates to whether the orientation of the cilia can be used as a criterion for diagnosis of immotile cilia syndrome. (Orientation is determined by the plane of the central tubules within each cilium.) It is recognized that nasal scraping disturbs the relative orientation of one cilium to another, whereas a true biopsy retains this orientation. Since the authors report that all of their controls did retain the orientation of the cilia, I wonder whether they did in fact perform biopsies, or whether their method of scraping the nasal mucosa retains ciliary orientation. If so, they should clarify precisely the method used for obtaining the samples of cilia.

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The Editors:

Our article included a discussion about the importance of neonatal diagnosis of immotile cilia syndrome rather than a detailed description of the technology used. However, interrogations and comments of Dr. Lieberman evoke the following comments.

Kartagener's syndrome (KS) is a hereditary disease involving the classic triad of sinusitis, bronchiectasis and situs inversus. The complete clinical picture as an etiopathologic entity was recognized by Kartagener in 1933. As bronchiectasis and sinusitis are absent in the neonatal age group, immotile or dysmotile cilia syndrome is the preferred term; the diagnosis of KS is a clinical diagnosis and is not based on electromicroscopic findings. Our samples of nasal epithelium were obtained in a minimally invasive fashion frequently described in literature. The technique consists of a gentle brushing of the surface of the lower nasal turbinate with a microcurette with central sharp edges or Hartmann ear forceps. This involves little discomfort for newborns or children and a biopsy with preservation of the basal structures can be obtained. A superficial brushing is never used and would indeed, as mentioned by Dr. Lieberman, completely disturb the relative orientation of one cilium to another. The lower nasal turbinate can be approached in repeat biopsies to provide consistency and reproducibility of sampling. Friday et al recommend that 50 to 100 cilia with proper orientation should be studied before a diagnosis of immotile cilia syndrome is rendered. At rest, the cilium is a cylindrical structure arising from the apical portion of the cell where it is attached to a basal body. Basal feet with ciliary roots are examined to validate uniform orientation, thus permitting the use of our technique following in proper orientation of the cilia and interpretation of the axis formed by the central tubule. The highly-ordered configuration of ciliary structures, including the central microtubular doublet and peripheral pairs, can be recognized in the obtained specimen. They are completely adequate for ultrastructural evaluation.

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