found that bronchoscopy is not contraindicated in patients who have suffered recent acute myocardial infarction (AMI). The general nature of the challenge is not new, as other studies have demonstrated that various types of surgery can be done safely after recent AMI. In fact, those with recent AMI can and do survive coronary artery bypass graft surgery (CABG), in spite of the prevalent notion that surgical procedures performed in the 3 to 6 months following AMI predispose the patient to a bad outcome. If that is the case, what can we learn to support or refute the notion that any surgical procedure that is not truly emergent, including bronchoscopy, should not be done in patients with recent AMI? Recent studies will provide some answers.

Most studies of perioperative mortality when surgery is performed after recent AMI are retrospective, as was the current study about the risks of bronchoscopy during this time frame. Dweik and colleagues did not intend to establish the indications for bronchoscopy when the procedure was truly appropriate for the patient. All they really intended with their study was to determine whether recent AMI patients who underwent bronchoscopy survived the procedure and/or had other nonfatal complications that could be attributed to the performance of bronchoscopy. The number of patients in their study was not large, and the inhospital mortality was 25%. Only one of the deaths (5% of the total who underwent bronchoscopy) occurred within hours of having bronchoscopy performed; this patient had active ischemia before, during, and after the bronchoscopy. It is possible that bronchoscopy contributed to the patient’s death, but this could not be stated with certainty.

A study from the Massachusetts General Hospital of 1,001 patients who underwent major noncardiac operations concluded that there were 9 important preoperative variables that could be used to predict the likelihood of life-threatening or fatal cardiac complications. One such predictor in this study was MI within the preceding 6 months. Another variable was the presence of a third heart sound or jugular venous distention. The latter two findings indicate cardiac dysfunction. Congestive heart failure (CHF) and impaired left ventricular function (assessed by echocardiogram) have been confirmed by many subsequent studies as significant predictors of perioperative mortality, when major surgical procedures were required. For noncardiac operations, this was best demonstrated among recent AMI patients who required appendectomy for acute appendicitis and hip surgery for fractures. Using an intention-to-treat principle, which reduces the bias in evaluating operative risk, Dirksen and Kjoller2 3 provided convincing data that mortality in these two types of surgery is related to CHF and not to the time between AMI and surgery. Other studies in patients undergoing CABG4 7 have led to the same conclusions: that depressed left ventricular function and CHF were the most important predictors of perioperative mortality, rather than the interval between the AMI and the surgery.

The study by Dweik and colleagues should not be interpreted as a free license to begin performing bronchoscopy shortly after AMI. The indications to perform bronchoscopy should still be rigorously applied. This is especially true if the patient has CHF. When there is concern about left ventricular dysfunction, an echocardiogram before proceeding with bronchoscopy may help in cases where the indications are less emergent. Good sedation to allay anxiety, careful attention to the details of monitoring hemodynamic parameters, and assuring adequate oxygenation during the procedure, should improve the safety margin in those patients with recent AMI who truly must be subjected to bronchoscopy.

Paul A. Kvale, MD, FCCP
Division of Pulmonary and Critical Care Medicine, Henry Ford Hospital.

References
3 Kjoller E, Dirksen A. Assessment of the surgical risk: Is the time between myocardial infarction and a possible surgical procedure of significance for a surgical risk? Ugeskr Laeger 1991; 153:1854-57

“Modern” Surgical Therapy for Tuberculosis

It must seem very strange to physicians and surgeons in North America, where medical care is readily available, that one should ever have to broach the subject of operating for complications of tuberculosis (TB). However, it may not be so farfetched as it might seem on first blush. A report this year showed that there are over 3,000 active cases of Mycobacterium
tuberculosis in New York City alone.\textsuperscript{1} In those patients not undergoing directly observed therapy, approximately 15 to 20\% were considered infectious. With directly observed therapy, the infectious rate dropped to 3\%. Although this is not a large number of patients at the present time, the absolute number of patients with continued active TB will continue to increase. Some will certainly develop complications of their disease. Because few new drugs are on the horizon to replace the present chemotherapies, more multidrug-resistant TB will develop as lack of effectiveness increases.

The potential need for surgical intervention in complicated TB has been recognized by the thoracic surgical community. At the most recent Society of Thoracic Surgeons meeting held in January 1996, there were two presentations on surgical management: one from the United States and one from Pakistan. Methods discussed were traditional open techniques.

At the turn of the century, thoracoscopy was introduced as the best hope for surgical treatment of TB. However, the technique was abandoned due to poorly managed complications and the advent of new drugs in the 1940s. Although thoracoscopy was resurrected for other reasons, Dr. Yim points out in this issue of CHEST\textsuperscript{6} (see page 829), that thoracoscopy has not lost its usefulness in the surgical management of tuberculosis. He discusses the management of 37 patients who underwent a variety of procedures from simple biopsy to lobectomy for management of complex pleural disease. Hospital stays were low and narcotic usage down from historic control subjects receiving open surgical therapy for similar disease.

This past March 24, 1996, marked the 14th Annual International Tuberculosis Day honoring Professor Robert Koch’s presentation of the discovery of the pathogenesis of TB. This day is dedicated to pointing out the need for continued efforts toward worldwide eradication of this killer. In the meantime, we see surgical history repeating itself as the tool which Dr. Jacobaeus introduced with great promise early in this century, returns again at the end of the century to fight this killer.

\textit{Joseph Lo Cicero, III, MD, FCCP}

\textit{Boston}

\textbf{REFERENCES}


\textbf{Chlamydia pneumoniae}

\textbf{New Diagnostic Tools for Detection of a Common Pathogen}

In the August issue of CHEST, Dalhoff and Maas\textsuperscript{1} compare the utility of three diagnostic methods to detect \textit{Chlamydia pneumoniae} infection in patients hospitalized for community-acquired pneumonia. \textit{C. pneumoniae}, also known as the TWAR agent, was serendipitously discovered to be a cause of respiratory tract disease during an epidemic of pneumonia in Northern Finland in 1978.\textsuperscript{2} In that outbreak, 34 young adults participating in a radiologic survey for tuberculosis developed pulmonary infiltrates. Serologic evaluation later revealed elevated antibody titers to a strain of \textit{Chlamydia psittaci}, TW-183, in 32 of 34 patients. This same strain had been previously isolated from the conjunctiva of a child in Taiwan in 1965.\textsuperscript{3} Of the 34 patients, 27 had respiratory symptoms, of whom 6 with pulmonary infiltrates were asymptomatic. Later, respiratory tract isolation of the agent, and serologic evidence of infection among students at the University of Washington provided definitive evidence for this Chlamydia strain (TWAR) as a cause of pneumonia.\textsuperscript{4} These initial studies established that \textit{C. pneumoniae} was an important cause for pharyngitis, sinusitis, bronchitis, and pneumonia in adults younger than 30 years old.

A subsequent large multicenter study by Fang et al\textsuperscript{5} found evidence of TWAR infection in 6\% of hospitalized patients with community-acquired pneumonias, and supported the previous association of \textit{C. pneumoniae} pneumonia with acute pharyngitis. In contrast to previous studies, \textit{C. pneumoniae} infection was noted to occur among older patients. Recent studies\textsuperscript{6-9} suggest a role for TWAR in exacerbations of episodes of COPD, pneumonia, and respiratory infection in nursing homes.

Most of the studies reviewed above used serologic methods to diagnose \textit{C. pneumoniae} infections. Criteria for diagnosis include \textit{C. pneumoniae} IgM titers $\geq 1.16$, and/or IgG titers $\geq 1.512$ in a microimmuno-fluorescence (MIF) assay, or an IgG titer $\geq 1.64$ in a complement fixation assay as diagnostic of an acute or recent infection.\textsuperscript{2-4,7} IgM antibodies occur within the first 3 weeks of human infection, and they are followed by IgG 6 to 8 weeks later.\textsuperscript{10,11} Other diagnostic methods, such as cultures of respiratory tract secretions have not been widely utilized because of difficulties in growing and identifying \textit{C. pneumoniae} in culture.\textsuperscript{11}

Studies in humans suggest that reinfection with \textit{C. pneumoniae} may occur, possibly explaining the high frequency of older persons with IgG antibodies by the MIF assay.\textsuperscript{10,11} Although the specific mechanisms of