toll-like receptor 4. Therefore, sensitivity to lipopolysaccharide is speculated to be enhanced in mushroom workers. We agree that airborne endotoxin plays an important role in the mechanism of chronic cough in mushroom workers, but the contribution seems to be only a part of the cause.

Hiroshi Tanaka, MD
Toyohiro Saikai, MD
Shosaku Abe, MD
Sapporo Medical University
Sapporo, Japan

REFERENCES

Risk of Bleeding Associated With Transbronchial Lung Biopsy

To the Editor:

We read with interest the prospective report of Herth et al (October 2002),1 which examined the role of aspirin as a risk factor for bleeding associated with transbronchial lung biopsy (TBBX). Two hundred eighty-five of the 1,217 study subjects had consumed aspirin within 24 h of undergoing the procedure. No bleeding was defined as traces of blood after finishing the biopsies without the need for continued suctioning. Mild bleeding was defined as the need for continued suctioning of blood from the airways after the procedure, moderate bleeding was defined as a requirement for intubation of the biopsied segment with the flexible bronchoscope into the wedge position, and severe bleeding was defined as the need for an additional intervention, such as placement of a temporary bronchus blocker, the application of a fibrin sealant, admission to a critical care unit, or the need for blood products.

There are several unanswered questions regarding the methodology used in this article. TBBX may be performed with or without wedging the bronchoscope.2,3 Was the bronchoscope wedged to obtain the TBBX? If it was, then when was the wedge position removed? With the wedge technique, the bronchoscope is reinserted or rewedged if there is evidence of bleeding postbiopsy and suctioning is discouraged. If the TBBX was performed without wedging the bronchoscope, then at what stage was suctioning stopped and the bleeding segment wedged with the bronchoscope? Furthermore, this appears to be a collaborative work from two centers. Was the same technique used to obtain TBBX in both centers? What criteria were used to ensure that the need for clinical intervention to judge the amount of bleeding associated with TBBX was uniform in both the centers? Some bronchoscopists may not wedge the bronchoscope at all and may continue suctioning with the “back-and-forth technique” until bleeding stops spontaneously.2 Were further TBBXs abandoned because of the severity of bleeding?

As none of the patients in the study required intubation, admission to critical care areas, or blood transfusion, the article highlights the fact that TBBX may be undertaken with controllable bleeding complications in patients who have received aspirin within 24 h of the procedure. Bleeding during TBBX is usually recorded as the volume of mixed blood and lavage fluid that is collected through the suction system of the bronchoscope at the end of the procedure.2–5 However, this study does not clearly assess the role of aspirin in the risk of bleeding associated with TBBX, as the quantity of bleeding was not recorded, irrespective of whether it was controlled with bronchoscopic methods and despite the prospective nature of the study. The identification of the severity of bleeding following TBBX in patients who have taken aspirin within 24 h of the procedure and its management in this large series remains elusive.

Prashant N. Chhajed, MD, DNB, FCCP
Monique A. Malouf, MBBS
Allan R. Glanville, MD
The Lung Transplant Unit, St. Vincent’s Hospital
Sydney, Australia

REFERENCES
1 Herth FJF, Becker HD, Ernst A. Aspirin does not increase bleeding complications after transbronchial biopsy. Chest 2002; 122:1461–1464
2 Zavala DC. Pulmonary hemorrhage in fiberoptic transbronchial biopsy. Chest 1976; 70:584–588
4 Cordasen EM Jr, Mehta AC, Ahmad M. Bronchoscopically induced bleeding: a summary of nine years Cleveland clinic experience and review of the literature. Chest 1991; 100:1141–1147

Microdrainage Via Open Technique in Severe Subcutaneous Emphysema

To the Editor:

The very interesting and original reports in CHEST by Beck et al (February 2002)1 and Leo et al (October 2002)2 gave us the occasion to review our experience with subcutaneous emphysema and its treatment in patients who have undergone lung parenchyma resections.

In the period between January 1990 and September 2002, we performed 1,561 lung resections. No substantial changes in the surgical technique regarding the parenchyma occurred during this period (essentially, mechanical stapling either at the paren-
chymal or at the bronchial level), while access changed somewhat and the number of video-assisted thoracoscopic procedures increased in recent years.

The incidence of subcutaneous emphysema associated with symptomatic cutaneous tension, palpebral occlusion, and modifications in tone of voice (defined as “severe” according to the criteria extensively described) was 1.3% (20 patients).

All patients except one had undergone lung resection via open muscle-sparing thoracotomy. In the only patient in whom subcutaneous emphysema developed after a video-assisted thoracoscopic procedure, a limited wedge resection had been performed as treatment for a small hamartochondroma.

In all cases, subcutaneous emphysema was associated with persistent air leakage, as was clinically evident from the output of air into a water valve system connected to the chest drain. A pneumothorax was evident roentgenographically in 19 patients and was the result of a pulmonary collapse of >50% in eight patients despite the application of continuous aspiration.

All the patients received a cutaneous microincision 5 mm in length in the area of the supraclavicular region, which was performed under local anesthesia usually on the side of the surgical approach. In 13 patients, a bilateral incision was performed due to the presence of massive bilateral subcutaneous emphysema. A separation of the subcutaneous layers up the muscle fascia was always performed via a blunt-tipped instrument and a short, small, and soft Penrose-type rubber drain, which was inserted into the microincision wound to keep it open for the desired period of time. Repeated compressive massage was applied three or more times per day by the nursing staff under the supervision of medical personnel.

The procedure was always performed in completely aseptic conditions. Topical medications were applied repeatedly, usually before and after the compressive massage. Not one patient experienced any infection at the site of the incision.

Symptomatic and psychological relief was immediately obtained in all patients, and repeat local anesthesia was never utilized to perform daily medications and compressive massage. The average duration of treatment was 3.7 days (range, 2 to 6 days), but the data are incomplete in the records of three patients. We have not recorded any complaint regarding the cosmetic outcome.

In conclusion, even if we consider the technique of microdrainage using a manually fenestrated angiocatheter, as described by Beck et al and Leo et al, as a very good option, the procedure that we adopted, which was far less invasive than the “thoracic lacerations” described by Herlan et al, is safe, easy, and effective, and could be considered as a valid alternative in the treatment of severe subcutaneous emphysema following lung parenchyma resection.

Alfredo Cesario, MD
Stefano Margaritora, MD
Venanzio Porziella, MD
Pierluigi Granone, MD
Rome, Italy

REFERENCES

What Is the Effect of Fingernail Polish on Pulse Oximetry?

To the Editor:

Pulse oximetry has revolutionized noninvasive oxygen saturation (Spo2) monitoring. It is not an uncommon belief that fingernail polish may affect the accuracy of pulse oximetry. Indeed, Coté and coworkers8 reported that black, blue, and green fingernail polishes significantly lowered Spo2 by 3 to 6%. Rubin9 also found that a blue color fingernail polish decreased Spo2 from 97 to 87%.

We undertook this study to determine whether measurement of Spo2 by a newer and widely used model of pulse oximeter (Biox 3740; Ohmeda; Louisville, CO) is affected by various fingernail polish colors. Ten different colors of Wet ‘n Wild (Pavion; Nyack-on-the-Hudson, NY) fingernail polish were used: red, yellow, dark blue, green, black, purple, fuchsia, light blue, brown, and white. In seven healthy subjects, each finger of the left hand was painted with a fingernail polish while the fingers on the right hand remained unpainted. Three readings were taken from each finger with the probe in the standard position (top-to-bottom, Fig 1, top, A) and in a side-to-side position (Fig 1, bottom, Fig 1, bottom, B).

Figure 1. Mean Spo2 of painted fingernails (colored bars) of one hand vs unpainted corresponding fingernails (clear bars) of the opposite hand in seven subjects. Measurements were taken with the probe in the standard top-to-bottom position (top, A), where the path of the emitted light is perpendicular to the fingernail bed; or in the side-to-side position (bottom, B), where the emitted light is parallel to the nail bed. *p < 0.05.

A) Probe Position: Top-to-Bottom

B) Probe Position: Side-to-Side

Nail Polish Colors

Figure 1. Mean Spo2 of painted fingernails (colored bars) of one hand vs unpainted corresponding fingernails (clear bars) of the opposite hand in seven subjects. Measurements were taken with the probe in the standard top-to-bottom position (top, A), where the path of the emitted light is perpendicular to the fingernail bed; or in the side-to-side position (bottom, B), where the emitted light is parallel to the nail bed. *p < 0.05.