Facial Ecchymosis in a Thrombocytopenic Patient After Fiberoptic Bronchoscopy

To the editor: Bronchoscopy is an invasive test that is useful in the diagnosis and treatment of pulmonary diseases and has low mortality and complication rates. Complications may result from the technique applied or staff inexperience. They may be iatrogenic or arise from patient status or characteristics that increase the risk of unforeseen events and sometimes death. The incidence of complication is even greater if diagnostic procedures such as transbronchial needle aspiration, bronchoalveolar lavage, and especially transbronchial biopsies are performed. We report the case of a bronchoscopy complication.

The patient was a 59-year-old woman with a 15-year history of chronic liver disease that had been stable until her hospitalization for a clinical picture of confusion and diminished cognitive abilities that had started 2 days earlier. Flapping tremor, normal lung sounds, slight ankle edema, and a temperature of 39°C were observed. Analysis revealed a white blood cell count of 5.9×10^9/L; hemoglobin, 10.3 g/dL; mean corpuscular volume, 108 fL; platelet count 53 000; aspartate aminotransferase/alanine aminotransferase, 454/281 U/L; bilirubin, 6.6 mg/dL; albumin 2.8 mg/dL; Quick index, 46%; prothrombin time (PT), 20 seconds; activated partial thromboplastin time (APTT), 55 seconds. The chest x-ray showed an increase in density in the right upper lobe. Upon suspicion of community-acquired pneumonia, levofloxacin was started. The patient responded to the treatment at first, but her lung sounds and clinical condition subsequently worsened. The blood cultures and the remaining initial microbiological tests carried out were negative. On the third day an x-ray was taken to monitor the patient´s status; the infiltrate of the right upper lobe persisted and no improvement was noted, raising again the initial suspicion of pneumonia. Suspecting a slow resolving pneumonia, a chest and abdominal computed tomography scan was taken. A hyperdense lesion 4.5 cm in diameter and of possible tumoral origin was revealed. As the lesion was peripheral, bronchoscopy under fluoroscopic control was performed to obtain samples for pathology and microbiology. Immediately after fiberoptic bronchoscopy, the patient presented with periorbital ecchymosis (Figure) with petechiae; no associated symptoms or other mucosal or cutaneous hemorrhage sites were observed. Otherwise, the patient showed good tolerance of the procedure and the lesion gradually disappeared over the following 7 days. Cytology and pathology were negative for neoplastic cells, and granulomas were not in evidence. The patient's recovery was uneventful throughout the resolution of the hematoma, and in later radiological monitoring partial resolution of the infiltrate was demonstrated.

Figure. Photograph showing orbital ecchymosis extending to the neck.

Among the bronchoscopic complications described in the literature,[1] we distinguished major life-threatening conditions such as respiratory depression, pneumonia, pneumothorax, airways obstruction, cardiorespiratory arrest, arrhythmia, and pulmonary edema from minor ones, such as vasovagal reactions, fever, bleeding, nausea, and vomiting. While reviewing the literature, we found studies that report mortality rates varying between 0.01% and 0.03% and major complication rates from 0.08% to 0.3%. The rates increase when certain techniques, such as bronchoalveolar lavage, bronchial brushing, and transbronchial biopsy are performed. Bleeding merits special consideration. In general, bleeding is infrequent (0.7%)[2] although in patients who are immunosuppressed, uremic, or thrombocytopenic with platelet or coagulation dysfunction, or in those who have pulmonary hypertension, abnormal vasculature, or altered liver function,[3] as in the case of our patient, the risk increases. Hemorrhagic complications may be mild, as with epistaxis, or severe, leading to pulmonary hemorrhage, which is occasionally fatal. However, we did not find subcutaneous bleeding like that experienced by our patient reported in the literature.

To prevent hemorrhagic complications, tests for coagulation screening and platelet count are performed before every exploration. Although the systematic use of such screening is not recommended, patients can benefit if they are at special risk as was our patient, who suffered from chronic liver disease and presented with a low platelet count, altered coagulation, and prolonged PT and APTT.

Reports of a lack of statistical correlation between screening tests and the likelihood of bleeding after transbronchial biopsy have suggested that having normal coagulation does not guarantee that bleeding will not occur, and that the PT, APTT, and platelet count will not identify patients who will hemorrhage.[4] Many investigators estimate that in thrombocytopenic patients a count higher than 50 000 is needed to perform a transbronchial biopsy or bronchial brushing safely.[5,6] When the platelet count is lower than 10 000 to 20 000, or bleeding is prolonged, biopsy is contraindicated.

We conclude that bronchoscopy is a safe technique with low mortality and complication rates and that occurrence of a subsequent complication or death is related to the patient's individual risk factors. Moreover, screening prior to exploration may be useful in minimizing complications but does not rule out hemorrhaging in patients with normal test results. Nevertheless, such screening is recommended for higher risk patients, especially those who are to undergo transbronchial biopsy.

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1. British Thoracic Society. British Thoracic Society guidelines on diagnostic flexible bronchoscopy. Thorax 2001;56(Suppl 1):1-21.
2. Pereira W Jr, Kovnat DM, Snider GL. A prospective cooperative study of complications following flexible fiberoptic bronchoscopy. Chest 1978;73:813-6.
3. Zavala DC. Pulmonary hemorrhage in fiberoptic transbronchial biopsy. Chest 1976;70: 584-8.
4. Bjortuft O, Brosstad F, Boe J. Bronchoscopy with transbronchial biopsies: measurement of bleeding volume and evaluation of the predictive value of coagulation tests. Eur Respir J 1998;12:1025-7.
5. Papin TA, Lynch JP III, Weg JG. Transbronchial biopsy in the thrombocytopenic patient. Chest 1985;88:549-52.
6. Feldman NT, Pennington JE, Ehrie MG. Transbronchial lung biopsy in the compromised host. JAMA 1977;238:1377-9.