there is no evidence that lung function is significantly altered in such cases. The positive challenge test, the isolation of *A fumigatus* in the dryer water culture, and the high serum concentrations of IgG antibodies to *A fumigatus* confirmed the diagnosis of hypersensitivity pneumonitis.

The fact that *A fumigatus* is a heat-tolerant fungus that reproduces at temperatures of 37°C to 45°C is likely to have led to its proliferation in the dryer water, subsequently recycled in the steam iron and inhaled by the patient. This is the only case of *A fumigatus*–induced hypersensitivity pneumonitis in connection with a steam iron described to date. However, we believe that it is important to bear in mind this source of exposure, given that more and more manufacturers are recommending the use of recycled water from dryers rather than distilled water, claiming water savings and improved ironing quality.

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Primary Non-Hodgkin Lymphoma of the Sternum

Linfoma primario no hodgkiniano de esternón

To the Editor:

Primary malignant sternal tumors are rare. Most of them are sarcomas. Primary lymphomas, particularly non-Hodgkin lymphomas arising from the bone or the soft tissue of the sternum, are also exceptional and have been considered a surgical problem because of local aggressiveness and local recurrence. They are difficult to resect without the chest wall becoming unstable, although with the development of techniques for surgical reconstruction, sternal resections have become feasible. We report a case of primary non-Hodgkin lymphoma of the sternum.

A 48-year-old man was hospitalized for a sternal mass. He reported a history of sternal pain of 4 months. On physical examination we found a fixed mass measuring 2.5 cm×3 cm in the middle part of the sternum without local signs of inflammation. There were no palpable peripheral lymph nodes. Lateral chest x-rays showed median sternal lysis. A computed tomography (CT) scan (Figure) demonstrated a lytic mass measuring 2 cm×3 cm arising from the left side of the middle body of the sternum. No extension into the mediastinum or hilar or mediastinal lymphadenopathy was found. Histology of a surgical biopsy of the mass showed malignant proliferation with extensive necrosis and a high mitotic rate. It was diagnosed as a high-grade malignant B-cell non-Hodgkin lymphoma. Immunohistochemical studies were positive for lymphocytes and CD20 markers and negative for neuroendocrine markers (S100, chromogranin). Laboratory findings were as follows: hemoglobin, 15.3 g/dL; hematocrit, 44.6%; white blood cells, 8500/μL; platelets, 213 000/μL; alkaline phosphatase, 69 IU/L, lactate dehydrogenase, 146 IU/L; and calcium, 98 mg/L. CT scans of the abdomen, pelvis, and head detected no evidence of other sites of disease. Bone scintigraphy and bronchoscopic studies were normal, as were bone marrow biopsies. The patient received 6 cycles of chemotherapy (cyclophosphamide, 750 mg/m^2; adriblastin, 50 mg/m^2, vincristine, 1.4 mg/m^2; and prednisolone, 40 mg/m^2. At the time of writing, there has been no evidence of recurrence for 24 months.

Malignant tumors of the sternum are rare, representing less than 1% of primary bone tumors.[1] Their management is complex and depends mainly on their histologic type, local aggressiveness, and the possibility or not of chest wall reconstruction.[2] The sternum is frequently invaded by lymph nodes of the mediastinum or internal thoracic chain[3] or by local and regional extension of tumors, particularly breast carcinoma. Clinical signs are not specific; chest pain and signs of inflammation are always found. Chest x-rays, CT, and magnetic resonance imaging give precise information about the extension, detect pulmonary metastasis, and aid in the assessment of mediastinal lymph nodes. The diagnosis is usually obtained by surgical biopsy as some authors have reported that needle biopsies may be insufficient because of limited efficacy.[1,4] However, even surgical biopsies may be uncertain when the cortex of the sternum is not involved and normal and abnormal tissue cannot be

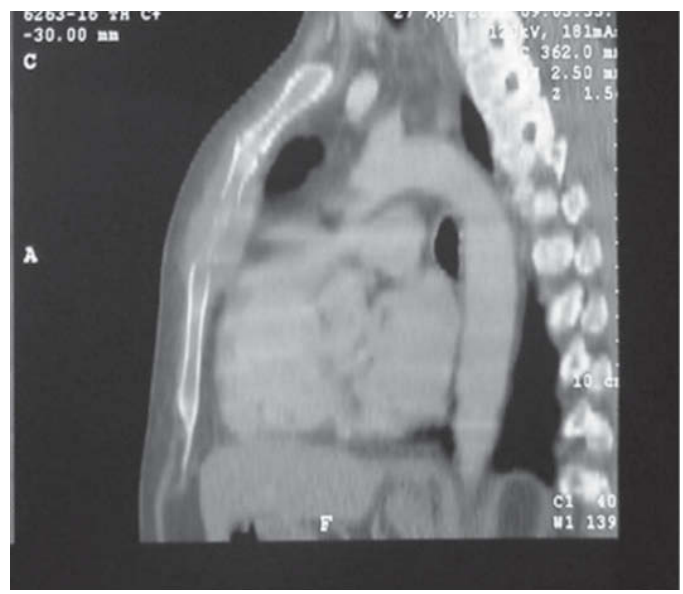

Figure. A computed tomography scan showed a lytic mass on the left side of the sternum. No mediastinal invasion was evident.

distinguished. Thus, biopsy is required before beginning chemotherapy in order to identify high grade malignancies, as performed by Chapelier et al[2] in 71.9% of cases. Whenever possible, surgery is the best therapeutic option even if in some cases other treatments such as radiation and/or chemotherapy may be used pre- or postoperatively. In non-Hodgkin lymphoma, there is no consensus about the various management strategies available. In a case described by Faries et al,[3] the patient was treated for an immunoblastic B-cell lymphoma by partial sternectomy followed by 6 cycles of chemotherapy with no evidence of active disease 2 years later. Ishizawa et al[5] described an anaplastic large cell Ki-1–positive mass treated by radiotherapy and chemotherapy without surgery in a 14-year-old girl who died 7 months after diagnosis. We decided to treat our patient with chemotherapy because of the high grade of malignancy and the sensitivity of these tumors to this treatment. The outcome was good, without recurrence for 24 months.

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Tracheal Mucormycosis

Mucormicosis traqueal

To the Editor:

Mucormycosis is an opportunistic infection caused by fungi from the order Mucorales (class Zygomycetes), which are saprophytes found on the ground or in degraded organic matter. They cause a fungal infection that presents in various clinical forms and affects immunocompromised patients, often with a fatal outcome.[1] The main infections in humans are rhinocerebral sinusitis, pulmonary, cutaneous, and gastrointestinal involvement, and disseminated zygomycosis. Few cases of respiratory tract infection have been described in the literature.

We report a case of tracheal involvement in a 28-year-old woman with insulin-dependent diabetes and frequent episodes of ketoacidosis. The patient presented with fever, cough, dysphonia, and throat irritation that had persisted for 1 week. She experienced progressively worsening symptoms, with intense labored breathing and inspiratory stridor. Computed tomography revealed extensive thickening of the tracheal mucosa and a thick membrane in the tracheal lumen starting at the subglottis and extending to the distal third of the trachea. The lung parenchyma showed bilateral alveolar nodular involvement, nodules surrounded by a halo sign, interlobular septal thickening, and an area of condensation in the lateral segment of the middle lobe. Fiberoptic bronchoscopy revealed left vocal cord paralysis and highly inflamed whitish pseudomembranes in the tracheal lumen and mucosa (Figure). Bacteriologic examination of the tracheal pseudomembranes, performed with methenamine silver stain (modified Grocott's), revealed right-angled branching and broad aseptate hyphae characteristic of *Mucor*. Rigid bronchoscopy was recommended to clear the trachea, and the tracheal membranes were completely removed. The tracheal lumen remained clear and of good caliber, the mucosa was completely eroded, and there was an intense inflammatory response.

A complication of a severe pneumothorax occurred during bronchoscopy and was resolved with chest tube drainage. After histological diagnosis, treatment was initiated with amphotericin B, at a dose of 5 mg/kg/d (total dose, 275 mg/d). Although the clinical course was initially favorable, unilateral vocal cord paralysis persisted, and after 2 months the patient developed laryngotracheal stenosis from scarring as a late-onset sequela, requiring surgical treatment. Partial resection was performed on the cricoid cartilage and the first 2 tracheal rings with end-to-end anastomosis. The patient remained free of symptoms and in the 24-month follow-up period there were no signs of fungal infection recurrence.

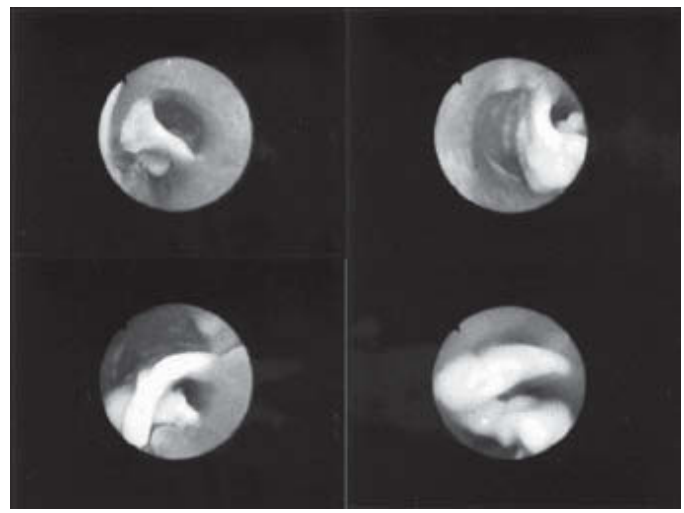

Figure 1. Endoscopic image of a tracheal pseudomembrane.

A search of MEDLINE revealed only 6 cases[2-6] of tracheal involvement (isolated or associated with lung involvement) reported in the literature since 1970, all in patients with diabetes aged between 20 and 79 years and with a predominant clinical picture of tracheal obstruction. Computed tomography findings are circular thickening of peritracheal soft tissues (with small gas bubbles) and irregular narrowing of the lumen. The most common bronchoscopic findings are edema and vocal cord paralysis, necrotic ulcers, nodular granulomas, and pseudomembranes in the tracheal lumen. Most of the circumstances described concurred in the case we report.