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Fire Eater's Pneumonia: The Role of Computed Tomography☆

Neumonía del tragafuegos: el papel de la tomografía computarizada

To the Editor,

We read with great interest the recent letter to the editor from Lizarzábal Suárez et al.[1] describing the case of a 19-year-old man who aspirated liquid paraffin during a fire-eating act. The patient developed lipoid pneumonia, and chest computed tomography showed three cavitary lesions in the pulmonary parenchyma.

We would like to highlight the findings from a similar case recently encountered. A 26-year-old man was admitted with dyspnea, cough, fever (39 °C), and chest pain. Two days before admission, he had accidentally aspirated liquid paraffin during a fire-eating act. Blood count revealed elevated white blood cells, with a leftward shift. Other laboratory data were unremarkable. Computed tomography demonstrated a heterogeneous mass in the right lower lobe, adjacent to the pleural surface (Fig. 1A). Bronchoscopy revealed inflamed, hyperemic bronchial mucosa without purulence or evidence of necrosis. Bronchoalveolar lavage fluid showed numerous lipid-laden macrophages (Fig. 1C). The patient was treated with systemic steroids and antibiotics. Computed tomography performed 2 weeks after admission showed remarkable improvement, with reabsorption of the mass, leaving residual scarring (Fig. 1B).

Fire eater's pneumonia (FEP) is caused by the accidental acute aspiration of hydrocarbon products during a fire-blowing act.[2–4] The performer blows a mouthful of liquid hydrocarbon against a burning stick, thereby creating an aerosol that ignites around the stick.[5] If aspirated, these hydrocarbons can diffuse rapidly throughout the bronchial tree, inducing bronchial edema, tissue damage, and surfactant destruction. As a consequence, the compounds provoke macrophage activation and cause a local inflammatory reaction.[2,4]

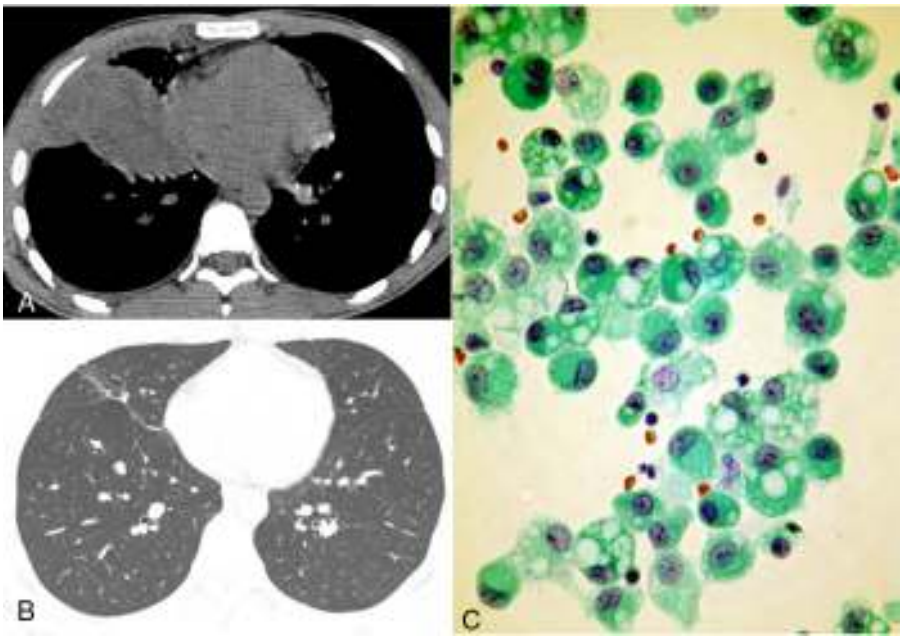

Fig. 1. (A) Computed tomography with the mediastinal window setting shows a mass in the right lower lobe, adjacent to the pleural surface. (B) Follow-up computed tomography with the lung window setting demonstrated reabsorption of the mass, with residual scarring. (C) Alveolar macrophages recovered by bronchoalveolar lavage. The cytoplasm is full of large rounded vacuoles that displace nuclei to the periphery.

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The diagnosis of FEP is reached by carefully evaluating the patient's anamnesis and clinical characteristics. Symptoms at presentation include cough, dyspnea, fever, and chest pain after hydrocarbon aspiration.[2,3] The diagnosis can also be confirmed by the presence of lipid-laden macrophages in bronchoalveolar lavage fluid in the context of recent exposure to volatile hydrocarbons.[2,4] Tomographic findings in patients with FEP include unilateral or bilateral lung consolidation, with or without low attenuation caused by lipid density or necrosis,[4] well-defined nodules, pneumatoceles (well-defined cavitary nodules), pleural effusion, and spontaneous pneumothorax.[2] The lesions commonly involve both lower lobes.[4]

FEP is a pseudo-infectious lung disease characterized by the intense release of inflammatory cytokines. The use of steroids is controversial, but this treatment may improve the outcome in severely affected patients. Prophylactic antibiotics seem to be of benefit, as fever and an elevated leukocyte count can occur and may indicate associated bacterial pneumonia.[2,4] Most patients with FEP experience complete recovery within weeks. However, complications such as pulmonary abscess, effusion, bronchopleural fistula formation, and bacterial superinfection may develop.[3,4] In conclusion, FEP should be included in the differential diagnosis of pneumonias. Clinical diagnosis is based on recent exposure to volatile hydrocarbons, as symptoms and imaging findings are nonspecific.

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AcuBlade® Laser System: A New Tool for Interventional Bronchoscopist☆

Sistema láser AcuBlade®: una nueva herramienta para el broncoscopista intervencionista

To the Editor,

Surgery is the treatment of choice for tracheal stenosis. In patients unfit for surgery, endoscopic treatment is a valid alternative, providing relief from dyspnea and improvement of quality of life.

Combined endoscopic management includes radial incision of stenotic scar with laser or cold instruments, mechanical dilatation and stent placement in presence of tracheal ring fracture to prevent recurrence.[1]

Shapshay et al.[2] pioneered endoscopic dilatation in 1987, using a CO_2 laser in patients with tracheal stenosis. Following this, use of the technique has increased, and is now standard in most hospitals.

CO_2 and ND:YAG lasers are generally used in the management of tracheal stenosis. The CO_2 laser is a highly accurate cutting tool with causing scant thermal damage, but its main drawback is the difficulty of delivering the beam through the bronchoscope. The ND:YAG laser is easily used with a bronchoscope, but it is less precise and may cause surrounding thermal damage.

Digital Acublade Robotic Microsurgery Laser System (Lumenis© Surgery) is a new generation of CO_2 laser commonly used in phonomicrosurgery. The main advantages of AcuBlade compared to traditional CO_2 are the possibility of setting the type of incision (straight, curved, or disk ablation; Fig. 1), the minimal thermal damage, and the computer filtering that eliminates the operator's tremor without preventing its ability to guide the laser in the target zone.[3,4] Thus, resection with AcuBlade is as even as that achieved with cold instruments, but with the advantage of a bloodless operative field.

We used AcuBlade for the first time in the management of idiopathic subglottic stenosis in a 73-year-old female. The stenosis appeared as a circumferential fibrotic web-like lesion, lying 8 mm from vocal folds, with a length of 15 mm and airway lumen of 6 mm.

With AcuBlade, we achieved an even resection of the stenotic scar without injuring the tracheal epithelium, and restored the normal tracheal lumen. Thus, we decided against mechanical dilatation to avoid tracheal injury and against stent placement due to proximity to vocal folds. At 15-month follow-up, the patient was asymptomatic with normal spirometric values and a patent tracheal lumen.

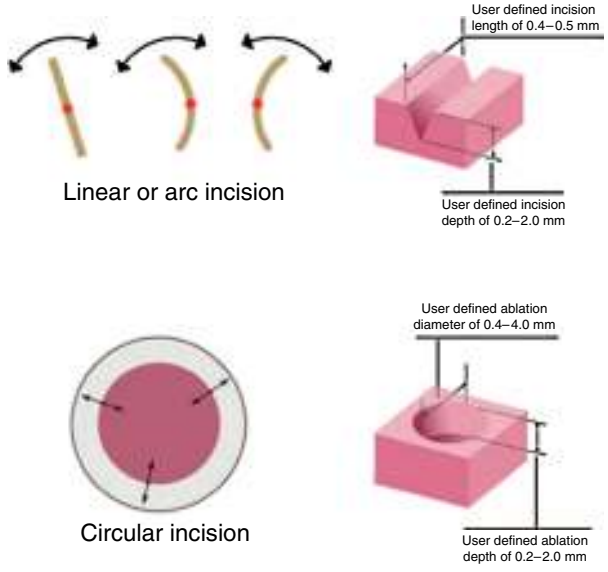

Fig. 1. AcuBlade can perform different types of incision (straight, curved, or disk ablation) of varying length and depth, according to the shape of the lesion.

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