

and negativity for S-100, desmin, smooth muscle actin and  $\alpha$ -1 antitrypsin.<sup>2,9</sup>

The differential diagnosis is mainly established with other myxoid tumors, both benign and malignant.<sup>6,9</sup> Tru-Cut core needle biopsy is recommended for pathology and immunohistochemical studies to differentiate them from sarcomas.<sup>9,10</sup>

Treatment is surgical resection. In a series of 55 myxomas, no local recurrence was observed after 19 years of follow-up; extended or simple resection has been performed despite margin involvement, and simple resection was recommended due to its lower morbidity.<sup>1,10</sup> Local recurrence is around 3%–8%, with higher risk in the first 2 years.<sup>1,9</sup> Myomas never metastasize. Recurrence has not been observed in any of our patients.

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## Conflicts of interest

None to declare.

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Rodrigo Kaibel Val\*, Jaime Vázquez Echarri,  
Ignacio Kaibel Axpe

Clínica médico-quirúrgica ROKAVA, Madrid, Spain

\*Corresponding author. [rodrigokaibelval@gmail.com](mailto:rodrigokaibelval@gmail.com)  
(R. Kaibel Val).

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## Hamman's sign after a dental procedure?

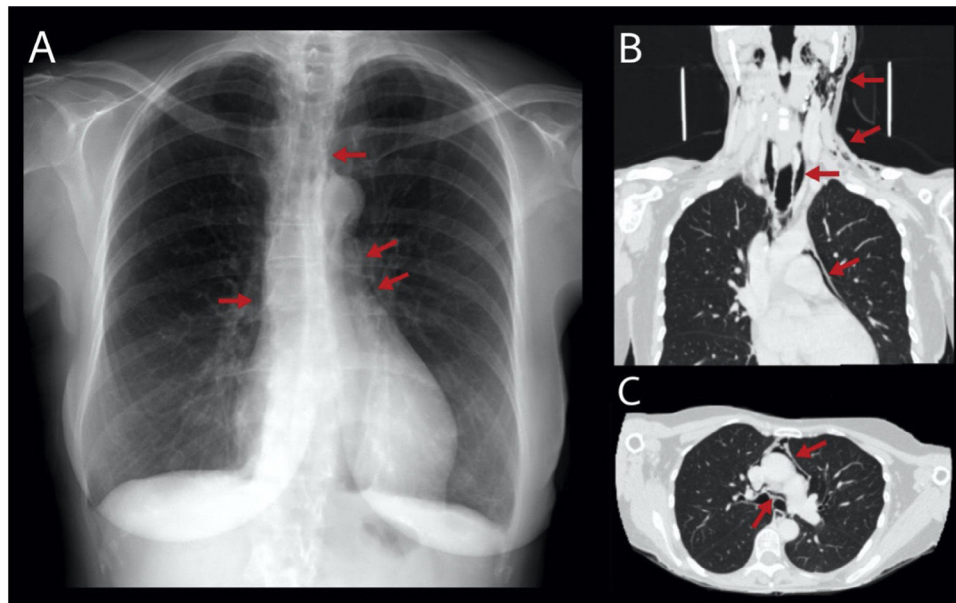
## ¿Signo de Hamman tras un procedimiento dental?



Pneumomediastinum is a rare clinical entity characterized by the presence of air in the mediastinum. Its secondary iatrogenic origin due to a minor dental process is extremely rare and requires a high rate of suspicion for diagnosis.

We present the clinical case of a 67-year-old patient, with no medical history of interest, who came to the Emergency Department 8 h after having a dental filling procedure of the first and second lower left premolars. The patient described that, during the polishing phase of the procedure (performed with rotary instruments that dispense air and water), the

patient experienced the abrupt onset of pressure in the left hemifacial region. Her odontologist observed edema of the surrounding mucosa, with increased volume of the soft tissue to the ipsilateral periobital area. Given the suspected diagnosis of an allergic reaction secondary to the local anesthetic, the patient was immediately administered corticosteroid treatment. However, the patient reported progressive worsening and onset of oppression in the cervicothoracic region, at which time she was referred from the dental clinic to our medical center.



**Fig. 1 – (A) Chest radiograph: red arrows show the presence of pneumomediastinum; (B/C) Coronal and axial computed tomography images: red arrows show the presence of cervical-facial subcutaneous and mediastinal emphysema.**

Upon arrival, the patient was hemodynamically stable, afebrile, eupneic, with an SpO<sub>2</sub> of 96%. On physical examination, we observed subcutaneous emphysema in the facial and cervical regions. Exploration of the oral cavity showed no notable alterations. On pulmonary auscultation, vesicular murmur was preserved; on cardiac auscultation, crackles were synchronous with the heartbeat in the precordial region (Hamman's sign).

Chest X-ray confirmed the diagnostic impression of pneumomediastinum (Fig. 1A). Another secondary etiology of the pneumomediastinum was ruled out by cervical-thoracic CT scan, which demonstrated the presence of subcutaneous emphysema in the facial and bilateral cervical regions with intrathoracic extension and pneumomediastinum, but no other associated lesions (Fig. 1B/C). As the patient had no associated history of trauma injuries nor any other endoscopic/surgical procedure, and given the low etiological suspicion of any esophageal, airway or pulmonary lesions, we ruled out further diagnostic studies.

The patient was admitted to monitor the progression of her symptoms and condition, administering empirical analgesic and antibiotic treatment. She was discharged 72 h after presenting favorable evolution, ruling out infectious complications.

The use of dental rotary instruments that produce pressurized air are known risk factors for the appearance of secondary pneumomediastinum.<sup>1</sup> Although any tooth could be involved, the molars are the most frequently affected as they have a closer relationship with the deep spaces of the head and neck.<sup>2</sup>

Proper patient anamnesis and physical examination are essential to establish a correct diagnosis and rule out other causes of secondary pneumomediastinum.

As described in other case reports,<sup>3</sup> treatment of pneumomediastinum associated with dental procedures can be conservative, with gradual resorption and favorable evolution.

Empirical antibiotic therapy is recommended as a preventive measure against potential infectious complications caused by the migration of oral flora into the subcutaneous tissue and mediastinum through the injured oral mucosa, resulting in cellulitis or the development of mediastinitis.

This case report presents limitations inherent to its format and the low incidence of this complication, as we describe the symptoms and evolution of only one patient. Despite this, given the possibility of the appearance of this iatrogenic complication and given its potential seriousness, it is necessary for all healthcare professionals who perform dental procedures to be aware of this pathology.

In conclusion, the appearance of subcutaneous emphysema and/or chest tightness in a patient during or after performing a dental procedure should be considered a sign of alarm. The procedure should be terminated and the patient referred to a hospital for diagnostic-therapeutic management.

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\*Corresponding author. [alvarofuentesmartin@gmail.com](mailto:alvarofuentesmartin@gmail.com)  
(Á. Fuentes-Martín).

Álvaro Fuentes-Martín\*, Mauricio Alfredo Loucel Bellino,  
Ángel Cilleruelo-Ramos, José Soro-García,  
José María Matilla González\*

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Servicio de Cirugía Torácica, Hospital Clínico Universitario de  
Valladolid, Valladolid, Spain

## Simultaneous treatment: Liver transplantation and median arcuate ligament syndrome



## Tratamiento simultáneo: trasplante hepático y síndrome de ligamento arcuato mediano

**Keywords:** Complications; Orthotopic liver transplant; Median arcuate ligament

**Palabras clave:** Complicaciones; Trasplante hepático; Ligamento arcuato mediano

Median arcuate ligament (MALS) syndrome involves extrinsic compression of the celiac artery by the fibrous bands of the median arcuate ligament (MAL).<sup>1</sup> It was first described in 1917 by Lipshutz et al.,<sup>1,2,5</sup> but it was not until 1963 when Harjola et al. performed the first surgeries to treat MALS.<sup>1,3</sup> In 1972, Colapinto et al. used CT for the first time for the diagnosis of MALS, and since then it has become the best diagnostic method.<sup>4</sup>

MALS is usually asymptomatic because collateral circulation develops, but in 10%–25% of cases some type of functional ischemia may occur.<sup>1</sup> Symptomatic patients may present abdominal pain with no obvious cause, which may be postprandial or triggered by exercise, as well as weight loss, nausea and vomiting.<sup>1,5</sup>

MALS that is not correctly evaluated or treated can cause serious complications after supramesocolic surgeries, especially pancreaticoduodenectomy.<sup>7</sup> However, the number of publications on patients with MALS undergoing liver transplantation (LT) is very limited, and no internationally accepted recommendations have been published about the best therapeutic strategy to follow.<sup>1</sup> It has been suggested that MALS can cause postoperative dysfunction of the liver graft by decreasing the mean flow velocity of the hepatic artery, thereby hindering flow to the graft, which can lead to hepatic artery thrombosis and biliary complications.<sup>5</sup> We present our experience in the synchronous treatment of MALS and LT.

Using a prospective database, we have conducted a retrospective observational study of all patients who had undergone LT from September 2012 to December 2021. Patients with preoperative CT scan diagnosis of MALS were selected (Fig. 1). We performed a temporary portacaval shunt and divided the MAL after completing total hepatectomy.

Within 24 h of LT, Doppler ultrasound was used to confirm the permeability of the arterial flow. The following clinical variables were studied: preoperative (age, sex, etiology of liver disease, MELD, preoperative hemoglobin, and donor risk index [DRI]); intraoperative (cold ischemia time, blood loss, arterial and portal flow pre/post-transplantation, and operative time); and postoperative (complications defined by Clavien-Dindo classification,<sup>8</sup> especially vascular, hospital stay, graft and patient survival).

We have operated on 4 patients with MALS, representing an incidence in our series of 1.01% (4/394). There were no complications associated with the division of the MAL. All grafts presented good perfusion after performing the venous and arterial anastomoses, and no post-transplantation vascular or biliary complications were observed. Vascular grafts were not used in any of these patients. Patient data are



**Figure 1** – CT (red arrow) of stenosis of the celiac trunk due to MALS.