CASE STUDY

Thoracic Duct Cyst, Sclerosing Treatment
Quiste de conducto torácico, tratamiento esclerosante

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Clinical Case

We present the case of a 52-year-old man who came to consultation in 2006 for left supraclavicular mass with a 2-month history. We carried out fibroendoscopic study (normal result), fine needle aspiration (FNA) biopsy and imaging study; the diagnosis was inflammatory process compatible with synovitis of the sternoclavicular joint. The clinical picture improved spontaneously, with decrease in size and having a normal follow-up sonogram.

In 2009 the patient came to consultation due to the reappearance of the left supraclavicular mass, soft and fluctuant (Fig. 1A), measuring some 4–5 cm. In otorhinolaryngology consultation a FNA was performed, aspirating 15 cm of a milky-appearing liquid (Fig. 1B). The mass decreased in size considerably and the material was sent for analysis.

Microbiological study was negative, while the anatomopathological study revealed a cloudy serous material with polymorphonuclear structures and macrophages, lacking evidence of malignant cells. Biochemical analysis yielded a high level of triglycerides (2884 mg/dl) and protein content (14.5 g/dl).

Cervicothoracic computed tomography (CT) with contrast yielded a mass of approximately 12 cm adjacent to the sternocleidomastoid muscle that was growing towards the left sternoclavicular joint and touched the left brachiocephalic trunk without infiltrating it (Fig. 2A). Magnetic resonance imaging (MRI) showed no infiltration of structures (Fig. 2B).

The tentative diagnosis was lymphatic malformation, thoracic duct cyst. We decided to treat it using intralesionl infiltration of OK-432 sclerosing material, carried out by the radiological service. The OK-432 was prepared diluting 0.1 mg of OK-432 in 10 ml of normal saline solution at 0.9% (0.01 mg of OK-432/ml). In the first session 5 ml (0.05 mg) was infiltrated, with a follow-up at 3 weeks. At that time a slight reduction in the mass was noted and we decided to carry out infiltration again. In later follow-ups regression of the clinical signs and symptoms was observed.

The patient has been followed up on a yearly basis, with no evidence of recurrence to date.

Discussion

Thoracic duct cysts are rare and those of cervical appearance are extremely rare; only articles related to them have been found in the literature. Differential diagnosis should be made with other masses that can present at the lateral cervical level, such as lymphangiomia, bronchogenic cysts and other tumours of diverse origins. In masses that present at mediastinum level, there should be differential diagnosis with other tumours such as mesothelioma and oesophageal, bronchial, thymic or lymphomatous masses.

Tumour masses that appear in the cervical area originate from malformations or affections at the level of the thoracic duct. They are usually congenital alterations in the formation and development of the lymphatic vessels; these
are extremely rare, with few cases described in the literature. The most common among them is lymphangioma, more frequent in the childhood period.

The pathogenesis in the cases in which there is no congenital cause (given that they can present spontaneously) is unknown. No explanation for the alteration or obstruction of the thoracic duct causing these lesions has been found. The hypothesis has been put forward that weakness of the walls in the lymphatic capillaries during formation or secondary to prior cervical trauma or surgery is to be blamed.

These lesions present as localised masses in the left supraclavicular area, the place where the thoracic duct ends at the level of the internal jugular vein together with the left brachiocephalic trunk. They most frequently appear as painless non-pulsatile masses, soft or fluctuant, filled with lymphatic liquid. They look whitish and milky, and contain a high level of lymphocytes and triglycerides.

The symptoms that can present are varied, depending on the size and location. Examples are dyspnoea, dysphagia (that may worsen after eating) and back or thoracic pain. Among the diagnostic tests that have been used are CT and MR imaging tests, lymphography or the injecting contrast directly in the cystic mass, and ingesting heptadecanoic acid. The FNA biopsy extracts a whitish liquid whose microscopic analysis reveals numerous lymphocytes, and biochemical analysis shows a high content of triglycerides.

Surgical removal is one of the alternatives in treatment, but monitoring and observation are also an option in asymptomatic patients. Other possibilities are ligation of the thoracic duct using video-assisted thoracoscopy and embolisation of the duct.

Another possible therapy is sclerosis of the mass using substances such as ethanol. Yet another option is the recently developed therapy with OK-432, a biological preparation of lyophilised protein of *Streptococcus pyogenes* Group A, Type 3, treated with benzylpenicillin; OK-432 has been used with success in lymphangioma, which has led to its use in other conditions such as the one we treated.

**References**