

## CASE REPORT

# Caliber-persistent Artery: A Case Report

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## ABSTRACT

The caliber-persistent labial artery (CPLA) is a vascular anomaly in which a main branch of the artery penetrates the submucosal area of the lip without loss of caliber. It commonly presents as an elevated soft tissue mass and is often pulsatile on manual palpation. Clinical suspicion is important, given the risk of bleeding, either from slight trauma or accidentally if lack of awareness leads to excision of the lesion owing to an incorrect diagnosis. CPLA should be considered in the differential diagnosis of any lesion affecting the lip, especially to differentiate from mucocele or squamous cell carcinoma. This particular case of CPLA in the upper lip of a girl presents a both unusual and interesting clinical picture and could provide essential diagnostic and procedural information.

**Keywords:** Caliber-persistent labial artery, Lips, Oral vascular lesions.

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## INTRODUCTION

The caliber-persistent labial artery (CPLA) is a vascular anomaly that consists of abnormal branching in this artery, penetrating the submucosa area without loss of caliber. It was first reported by Howell and Freeman in 1973 under the name "prominent inferior labial artery". They described seven cases of bleeding in the lower lip, all caused by a pulsatile lesion.<sup>1</sup>

In the majority of cases reported patient age ranges from 40 to 88 years, although the lesions had appeared years before the symptomatology. Caliber-persistent labial artery usually appears in the lower lip; there are a small number of cases in the hard palate and upper lip. The most frequent clinical presentation is as an ulcer or nodule, pulsating or not, unilaterally in the lower lip.<sup>2</sup>

Awareness of this anomaly is important given the risk of bleeding, either from slight trauma or accidentally if lack of clinical suspicion results in excision of the lesion because of an erroneous diagnosis.<sup>3</sup>

## CASE DESCRIPTION

A 7-year-old girl was referred from the dermatology unit with a 4-mm reddish, pulsating left upper lip with episodes of heavy bleeding following minimal trauma (Fig. 1).

An echo-Doppler was performed, revealing an injury with high flows that was considered compatible with arteriovenous fistula. Following evaluation by the Vascular Tumors Committee, a differential diagnosis between arteriovenous malformation and CPLA was proposed.

Given the bleeding episodes, the maxillofacial surgery unit decided on surgery for exeresis of the lesion. The intervention was performed under general anesthesia, identifying an abnormality in the superior labial artery that presented with an aberrant afferent to the labial mucosa through the orbicularis muscle (Fig. 2). Treatment consisted of ligation of the afferent, followed by excision of the lesion from the arterial to the mucosa and cutaneous affected area. A wedge-shaped plasty was performed to repair the excised tissue. Histopathological examination showed a mucosal fragment covered with epithelium, and irregular mid-caliber vessels with intimal hyperplasia and tendency to obliteration in the stroma were also found.

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Finally, closure was performed with 4–0 absorbable suture in mucosa and 5–0 monofilament in the skin (Fig. 3). At three-year follow-up, the patient remains asymptomatic, without signs of local recurrence of the lesion (Fig. 4).



**Fig. 1:** Frontal view of the patient showing the lesion located on the upper lip

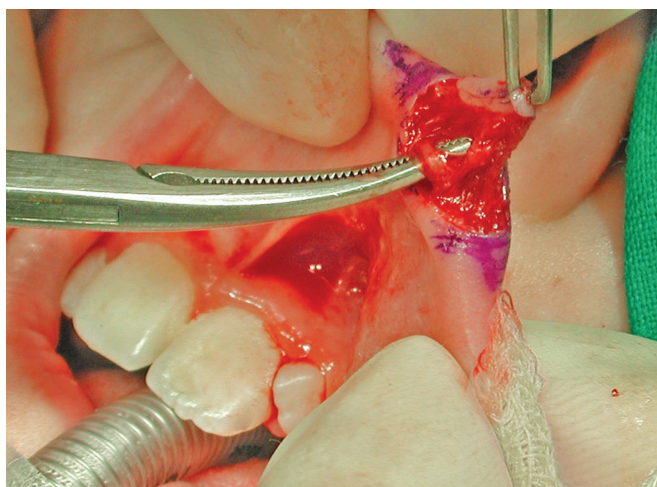


Fig. 2: Superior labial artery with an aberrant afferent to the labial mucosa

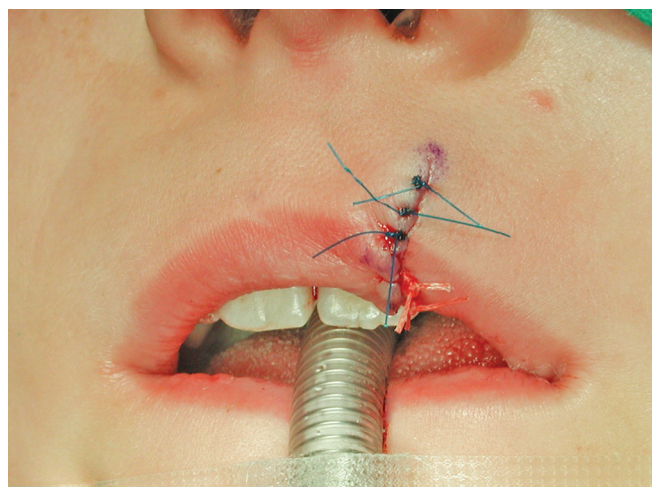


Fig. 3: Postsurgical result



Fig. 4: Results at three years follow-up

## DISCUSSION

CPLA may remain unidentified until severe bleeding occurs, either spontaneously or more frequently owing to trauma to the lip. Given this risk of bleeding, it is therefore extremely important to recognize this type of injury.<sup>4</sup>

Few works have been published about early-onset congenital CPLA, as in the case presented here. The lesion appears more frequently in elderly people, who are more predisposed to ulceration in the area, from causes related to ischemia that generates pulse pressure. Factors such as advanced age-related atrophy, actinic cheilitis, arteriosclerosis, and certain medications may also contribute.<sup>5</sup>

A correct differential diagnosis should consider both benign pathologies such as mucocele, hemangioma and fibroma, and crucially malignant pathology such as squamous cell or basal cell carcinoma.<sup>6</sup> It should be noted that some cases of CPLA have been misdiagnosed as malignant pathology owing to ulcerated areas accompanying the lesion. There have been rare cases reported in the literature where CPLA was associated with squamous cell carcinoma.<sup>7</sup>

To confirm the diagnosis, many authors recommend a biopsy, which has a high risk of bleeding.<sup>8</sup> Others advocate the use of

other tests such as angiography, echo-Doppler or other imaging techniques.<sup>9</sup> In the case presented, a preliminary imaging test such as echo-Doppler was the preferred option, and the diagnosis of suspicion was followed by exeresis under general anesthesia for patient safety.

The treatment of choice is surgical resection, particularly when the patient presents with symptoms such as esthetic impairment or uncomfortable pulsating sensation, and especially in cases where there is risk of bleeding.<sup>10</sup>

In conclusion, CPLA is an anomaly of the labial artery, which penetrates the submucosa of the lip without dividing into other branches of smaller caliber. Its clinical symptoms are variable, from asymptomatic to presence of nodules or ulcers, with possible associated pulsation. It is essential for the maxillofacial surgeon to consider this pathology when making a differential diagnosis, owing to its similarities with other lesions, both benign (mucocele or hemangioma) and malignant (basal cell or squamous cell carcinoma). Understanding the risk of severe bleeding in this pathology is crucial when a surgical intervention is to be performed on the injury or in cases with minimal trauma. Echo-Doppler or angiography are strongly recommended for support in difficult diagnoses, but exeresis and anatomopathological study are needed to obtain the definitive diagnosis.

## ETHICAL APPROVAL AND PATIENT CONSENT

Signed informed consent was obtained from all patients included in the study.

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