



# Giant life-threatening external carotid artery pseudoaneurysm caused by a mandibular condylar fracture

André Luis Ribeiro Ribeiro, DDS, MSc,<sup>a</sup> Walessa Brasil da Silva, DDS, MSc student,<sup>b</sup>  
Sérgio de Melo Alves-Junior, DDS, MSc, PhD,<sup>b</sup> and João de Jesus Viana Pinheiro, DDS, PhD<sup>b</sup>

**Objective.** Vascular lesions are rare complications associated to mandibular condylar fractures. This paper aims to describe a case of a giant pseudoaneurysm involving the external carotid artery (ECA) caused by a condylar fracture.

**Case report.** A 33-year-old man was the victim of traffic accident and presented with a panfacial fracture, including a bilateral condylar fracture. The condylar fracture was treated by closed reduction, and 4 weeks after treatment, the patient developed facial edema, which suggested postoperative infection. An attempt at draining it resulted in intensive bleeding. A computed tomographic angiography showed a huge pseudoaneurysm originating from the ECA. The patient was treated with surgery with ligation of the ECA and drainage of the pseudoaneurysm.

**Conclusion.** Vascular complications associated with condylar fractures are rare, but surgeons should be aware of this type of complication, especially because of the high risk of serious damage, including death. The use of computed tomographic angiography is very helpful in the diagnosis of vascular lesions and also guides treatment. (Oral Surg Oral Med Oral Pathol Oral Radiol 2015;119:e95-e100)

## INTRODUCTION

Condylar fracture is one of the most prevalent and discussed topics in facial trauma. The main reason is that mandibular condylar fracture treatment methods are controversial, especially when balancing risks and benefits of each.<sup>1,2</sup> The treatment follows two main categories, open and closed reduction,<sup>3</sup> with the advantages of one method directly associated with an increased risk of disadvantages of the other. Endoscopic reduction has recently shown promising results,<sup>4</sup> although still performed in limited locations. Well-known complications of condylar fractures include pain, infection, nerve damage, temporomandibular joint ankylosis, limitation of mouth opening, temporomandibular joint disorders, malocclusion, and skin scars.<sup>5-7</sup> Vascular lesions associated with condylar fractures are poorly described, and their role in maxillofacial trauma are still underestimated.

In spite of the high prevalence of condylar fractures, vascular lesions are not very often associated with this type of fracture. Despite their rarity, vascular lesions in condylar fractures should be considered an important issue, as they can evolve to life-threatening situations because of the involvement of the main branches of the carotid artery.<sup>8-11</sup> Anatomically, the risk of vascular lesion is high because of the close anatomic relationship between the mandibular condyle and the external

carotid artery or its terminal branch, the maxillary artery.<sup>12</sup> Besides that, this topic is relatively unexplored in the literature, and practices for diagnosis and treatment have not yet been fully established.<sup>13-18</sup>

The most significant vascular lesions include severe bleeding, hematomas, aneurysms, and pseudoaneurysms.<sup>8,9,15-21</sup> Of these, pseudoaneurysms call attention because of their late development and potential associated risks.<sup>12,15,22,23</sup> A pseudoaneurysm occurs as a consequence of the partial rupture of a blood vessel; thus, there is blood leakage into surrounding tissue. Then, the surrounding tissue is stretched until tissue resistance equals the blood leakage pressure. This tissue will form an aneurysmal sac, which will work as the new vascular "wall."<sup>15,24,25</sup> Gradually, the formed hematoma liquefies and causes blood flow within the pseudoaneurysm. The rupture of the aneurysmal sac can lead to heavy bleeding, which can be life-threatening.<sup>26</sup>

Despite this, there is a relative lack of information on this topic, the consequences of which can be fatal. With the advancement of diagnostic imaging techniques and their availability in most of the main centers of trauma care, the surgeon should be aware of the methods for proper diagnosis of this type of lesion and also be prepared to deal with it. This paper reports a case of a life-threatening giant pseudoaneurysm of the external carotid artery caused by a mandibular condylar fracture.

## CASE REPORT

A 33-year-old man was victim of traffic accident, in which his motorcycle had crashed into a car, and was referred to a trauma hospital. He was conscious on admission but agitated because of difficulty breathing caused by intense oral bleeding. The patient underwent radiographic examinations and computed tomography (CT) scan. The CT scan showed multiple facial fractures, but there were no important brain

<sup>a</sup>Department of Oral and Maxillofacial Surgery, School of Dentistry, University Center of Pará-CESUPA, Belém, Brazil.

<sup>b</sup>Department of Oral Pathology, School of Dentistry, Federal University of Pará-UFPA, Belém, Brazil.

Received for publication Jul 27, 2014; accepted for publication Aug 27, 2014.

© 2015 Elsevier Inc. All rights reserved.

2212-4403/\$ - see front matter

<http://dx.doi.org/10.1016/j.oooo.2014.08.017>

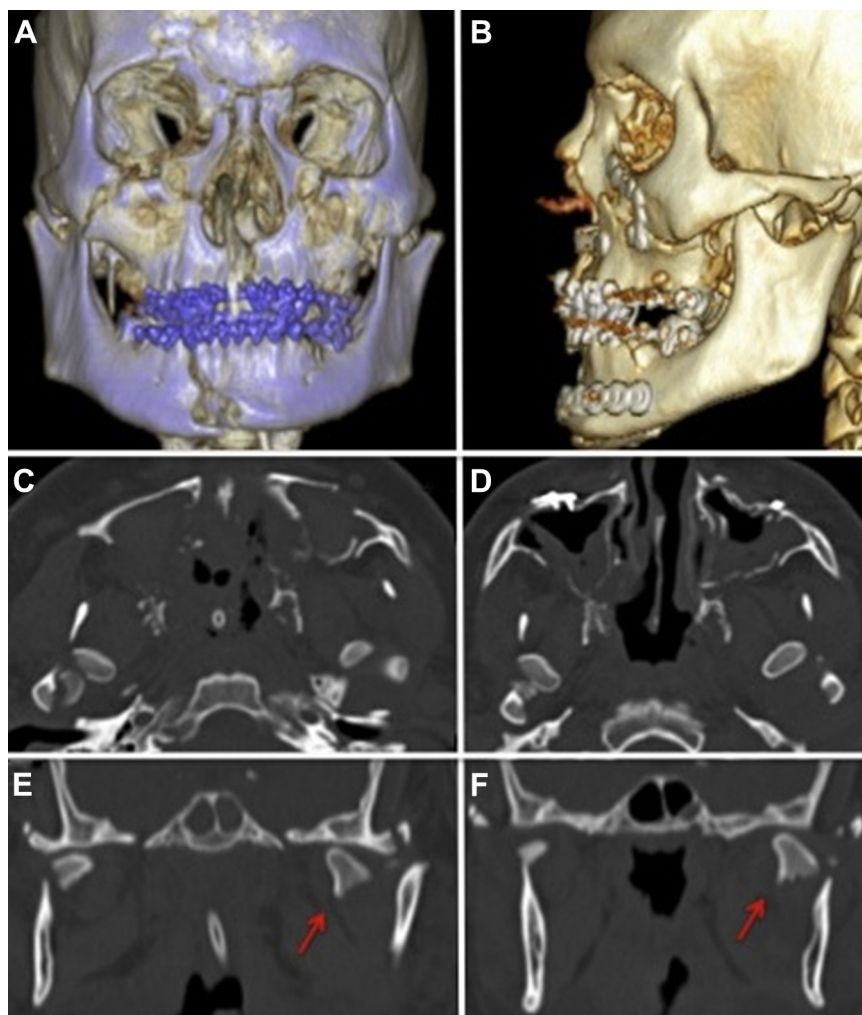


Fig. 1. Pre- and postoperative treatment computed tomography (CT). 3-D CT reconstruction after primary treatment with Erich bars (A). Panfacial fracture involving Le Fort I/II and Lanelong maxillary fractures, naso-orbito-ethmoid fracture, parasymphysis, and bilateral mandibular condylar fractures causing facial enlargement. Postoperative 3-D reconstruction after open reduction and internal fixation of fractures (B). Left condyle fracture was treated with closed reduction. Axial CT cuts show high bilateral condylar fracture before (C) and after (D) closed reduction. Left condyle presents a sharp edge in its medial side (E and F, red arrows). This sharp edge could be responsible for the external carotid artery injury.

injuries or other major trauma to other body parts. The accident and emergency unit established a surgical airway through a tracheostomy, and the patient was transferred to the intensive care unit.

During the clinical examination conducted by the oral and maxillofacial surgery team, significant facial asymmetry was observed, as well as generalized facial edema and mobility of facial bones. The clinical examination and CT scan confirmed the diagnosis of panfacial fracture, which included Le Fort I/II and parasagittal maxillary fractures, naso-orbito-ethmoid fracture, and parasymphysis and bilateral mandibular condylar fractures (Figure 1A). The patient's oral wounds were sutured, and maxillomandibular fixation was carried out through Erich bars. Definitive surgical treatment was planned following edema resorption and medical stabilization.

The patient underwent surgical treatment 7 days after admission. An open reduction and internal rigid fixation of

selected fractures were performed (Figure 1B). Bilateral condylar fractures were treated with closed reduction after a period of maxillomandibular fixation (Figure 1C-F). After surgical treatment, the patient progressed as expected: the edema was regressing, and the tracheostomy was removed on postoperative day 4. Two days later, the patient was discharged and was followed up on an outpatient basis.

The progression continued as expected in the first weeks. On the fourth postoperative week, the patient presented a painless swelling in the left hemi-face, with mild sweating. Laboratory tests showed mild leukocytosis ( $13,500/\text{mm}^3$  — reference range  $4000\text{--}10,000/\text{mm}^3$ ), suggesting postoperative infection. Drainage in the submandibular region was then attempted. During the procedure, very intensive bleeding occurred. Bleeding was controlled with a compressive suture; however, during 1 minute between the onset of bleeding and its control with compression and suture, about 150 mL of

Download English Version:

<https://daneshyari.com/en/article/6056339>

Download Persian Version:

<https://daneshyari.com/article/6056339>

[Daneshyari.com](https://daneshyari.com)