

Acute spontaneous subdural hematoma as unusual complication after tooth extraction

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Abstract: *Background:* Intracranial bleeding has been reported in the literature associated with tooth extraction. Coagulation disorders are often associated with complications after dental extraction. In this case report, we describe a case of spontaneously intracranial subdural hematoma possible after tooth extraction. *Case description:* The patient was a 26-y-old female without any underlying diseases. A computerized tomography scan showed a subdural hematoma 48 hours after the dental extraction. She was managed with a burr hole, good postoperative evolution and discharged to home. *Conclusion:* Although rare, the presence of headache with signs of alarm after the extraction of a tooth, we must discard intracranial abnormalities. To the best of our knowledge this is the first report in the literature of a spontaneously intracranial subdural hematoma possible after tooth extraction.

Key words: Subdural hematoma, tooth, bleeding; tooth extraction

Introduction

The intracranial subdural hematomas usually have a history of trauma, rarely described spontaneous bleeding. (1-3) The bleeding episodes associated with tooth extraction have been described in patients with use of anticoagulation. (4, 5) Occurrence of spontaneous subdural hematoma following dental extraction has not been reported in the English literature. Here, we present a case of spontaneous intracranial subdural hematoma

in a young patient after the extraction of a tooth.

Case Report

Our patient is a 26-year-old female, developed headache of increasing intensity, nausea, and emesis 6 hours of evolution. She had undergone a tooth extraction procedure 2 days before the onset of headache. At the time examination in the emergency room the patient was alert, oriented to person, place and date and

had no focal neurologic deficits. A computed tomography (CT) scan of the brain showed a left fronto-parietal subdural hematoma (Figures 1, 2 and 3). The patient coagulation profile was normal. The patient underwent burr hole evacuation of the subdural hematoma. The patient did well and discharged on post admission day 4. At the time of discharge patient was relieved of headache.



Figure 1 - Noncontrast CT of the brain demonstrating a left fronto-parietal subdural hematoma



Figure 2 - Contrast CT of the brain demonstrating a fronto-parietal left subdural hematoma with minimal medial enhancement



Figure 3 - CT angiogram of the brain showing normal blood vessels

Discussion

We describe an unusual case of subdural hematoma subsequent to the extraction of a tooth. Several factors are cited as causes, the most common cause head trauma, chronic alcoholism and anticoagulation. (6-8) In general, we can establish two groups of patients in terms of age, under 65 years and older, representing the age distribution in 20% and 80%, respectively. (6-8) The treatment options for these lesions depend on the clinical presentation and size of the lesions and ranges from observation alone, to the use of different types of drugs and surgical evacuation in symptomatic cases. (6-8) Given the pathophysiology possibly the best option is the emptying of the collection. Conservative treatment is based on the osmotic theory of formation and growth of HSC, by parenteral administration of hyperosmolar substances, which tend to reduce absorption, the volume of the hematoma. (6, 8) In our case the patient presented with severe headache and responded well to surgical management with good results.

In geriatric population, the trauma is most frequent, and become significant if associated with other comorbidities such as diabetes mellitus, end-stage renal disease, hypertension, cerebrovascular disease, neurodegenerative diseases, anticoagulant or antiplatelet therapy; the latter are found much less frequently in patients younger than 65 years, however, consider that these are involved in events traumatic violent, more trivial events, so you might expect a different clinical presentation in both groups. It has

been suggested that alcohol chronically by cortical atrophy, coagulopathy secondary to chronic liver damage and most probably favor risk of head trauma injury. In the literature it is present between 10 and 50% of cases. Other causes are described primary tumors, metastases or vascular malformations, among others. (9-12) Naama et al. (13) reported two cases who presented with acute signs of intracranial hypertension secondary to a spontaneous acute subdural hematoma in which spontaneous bleeding from a small cortical artery was seen during operation. It has also been described subarachnoid hemorrhage after tooth extraction. (14)

Conclusion

Intracranial bleeding after dental extractions are rare phenomena and have been described very few cases. We report a patient who developed a spontaneous subdural hematoma possible after the extraction of a tooth, without presenting coagulopathy. Our case illustrates the phenomenon of developing an intracranial subdural collection after dental procedures and suggest that any patient with headache and warning signs, it must be studied with complementary imaging tests.

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References

1. Arnold PM, Christiano LD, Klemp JA, Anderson KK. Nontraumatic spontaneous acute subdural hematoma in identical teenage twins 1 year apart. *Pediatr Emerg Care* 2011;27:649-651.

2. Chhiber S, Singh J. Acute spontaneous subdural hematoma of arterial origin: A report of four cases and review of literature. *Neurology India* 2010;58:654.
3. Martins WA, Teixeira AB, Frigeri TM, Paglioli E. Spontaneous subdural hematoma associated to Duret hemorrhage. *Interdisciplinary Neurosurgery* 2015;2:13-15.
4. Abdullah WA, Khalil H. Dental extraction in patients on warfarin treatment. *Clin Cosmet Investig Dent* 2014;6:65-69.
5. Naganawa T, Sakuma K, Kumar A, Fukuzawa S, Okamoto T, Ando T. Intracranial hemorrhage after tooth extraction in a patient with chronic disseminated intravascular coagulation. *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology* 2015;27:854-857.
6. Dumont TM, Rughani AI, Goeckes T, Tranmer BI. Chronic subdural hematoma: a sentinel health event. *World neurosurgery* 2013;80:889-892.
7. Foelholm R, Waltimo O. Epidemiology of chronic subdural haematoma. *Acta neurochirurgica* 1975;32:247-250.
8. Karibe H, Kameyama M, Kawase M, Hirano T, Kawaguchi T, Tominaga T. [Epidemiology of chronic subdural hematomas]. *No shinkei geka Neurological surgery* 2011;39:1149-1153.
9. Carter G, Goss AN, Lloyd J, Tocchetti R. Current concepts of the management of dental extractions for patients taking warfarin. *Australian dental journal* 2003;48:89-96.
10. Devani P, Lavery KM, Howell CJT. Dental extractions in patients on warfarin: is alteration of anticoagulant regime necessary? *British Journal of Oral and Maxillofacial Surgery* 1998;36:107-111.
11. Salam S, Yusuf H, Milosevic A. Bleeding after dental extractions in patients taking warfarin. *British Journal of Oral and Maxillofacial Surgery* 2007;45:463-466.
12. Stiefelhagen P. Stroke after tooth extraction. *MMW Fortschritte der Medizin* 2009;151:17.
13. Naama O, Belhachmi A, Ziadi T, et al. Acute spontaneous subdural hematoma: an unusual form of cerebrovascular accident. *Journal of neurosurgical sciences* 2009;53:157-159.
14. Mamedov RT, Bakhmudov BR. Subarachnoid hemorrhage occurring as a complication after tooth extraction. *Stomatologija* 1993;72:81.