Veliki hematom obraza kao komplikacija lokalne anestezije: prikaz slučaja

A Large Cheek Hematoma as a Complication of Local Anesthesia: Case Report

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Introduction
Modern local anesthetic agents in everyday practice are thought to be safe and efficient in providing an analgesic operating field. A thorough medical history and the appropriate choice of local anesthetic lower the chance of an unintended allergic reaction. Apart from the type of anesthetic being chosen, it is nearly important to take care of the infiltration technique being applied. Ignorance of the techniques and anatomic structures and poor selection of the instrumentarium greatly increase the incidence of adverse reactions and complications (1). Complications after local anesthetic infiltration in the orofacial region can be local and systemic. The latter most frequently include type 1 allergic reaction and a vasovagal syncope. Most common local complications are paresthesia of the nerve being anesthetized, facial nerve paralysis, trismus, soft tissue lesions, hematomas and, rarely, infection (2, 3).

Case report
An 8-year-old boy accompanied by his mother was referred to the Department of Oral and Maxillofacial Surgery at University Hospital Dubrava, Zagreb by his general dental practitioner. Prior to the visit, the boy had a clear medical history.
According to his mother’s testimony no prolonged bleeding or hematoma formation could have been observed spontaneously or after trauma. Eight days before coming to our office a local anesthetic had been given to the boy by his dentist with the intention of the right maxillary deciduous canine extraction. An immediate swelling of the right cheek could have been observed without evidence of breathing problems or impaired consciousness (Figure 1). The boy was, subsequently, transferred to the local emergency unit of Health center with a suspected allergic reaction. A systemic corticosteroid (Solumedrol) of unknown dose was administered and an additional visit to an ear, nose and throat specialist was advised. The patient was then examined by an ENT specialist at Sestre milosrdnice University Hospital Center, Zagreb, Croatia and a topical heparin therapy was advised. Four days after the initial anesthetic application an acute bacterial infection ensued. A local private dentist decided to perform an intraoral incision and drainage. Also, he prescribed an antibiotic therapy (clavulanic acid + amoxicillin, 10mL twice daily). According to his mother’s words, the private dentist managed to evacuate some sanguino-

Slika 1. Izgled pacijentovog obraza prvog dana nakon primjene anestetika (fotografija pacijentove majke)
Figure 1 The appearance of the patient’s cheek on the first day after local anesthetic was applied (Photo courtesy of patient’s mother)

Slika 2. Izgled pacijentovog obraza peti dan nakon incidenta. Napravljena je incizija i ordiniran je antibiotik dan ranije (fotografija iz privatne kolekcije pacijentove majke).
Figure 2 The appearance of the patient’s cheek on the fifth day after the incidence. The incision was made and the antibiotic therapy administered the day before. (This photo belongs to family photo collection and is given by courtesy of patient’s mother).

Slika 3. Hematom se smanjuje nakon 8 dana
Figure 3 Hematoma started to fade eight days after the incident.

Slika 4. Nestanak hematoma nakon dva tjedna
Figure 4 Hematoma resolution after two weeks.
uvijek se vidjela diskretna oteklina te obris hematoma u regresiji od infraorbitalne regije do juguluma (slika 3.) Dodatna terapija nije bila potrebna i za dva tjedna hematoma je potpuno nestao (slika 4.).

Rasprava

Premda je korištenje suvremenih lokalnih anestetika sigurno, uvijek je potrebna najviše mogući oprez pri pravilnom odabiru vrste lokalnog anestetika, a potrebna je i ispravna tehnika davanja. To uključuje i apliciranje minimalne djelotvorne doze za određeni stomatološki postupak. Tijekom svakog davanja lokalne anestezije, kako infiltracijske (pleksusne anestezije) tako i provodne, vrlo je važan postupak aspiracije (1) kako bi se izbjeglo neželjeno sistemsko djelovanje anestetika i povećala njegova lokalna učinkovitost. Poznato je da je pri davanju tuberne i provodne anestezije za donji alveolarni zivac veća učestalost aspiracije krvnog sadržaja (4). Također treba istaknuti da pozitivan nalaz u tom slučaju znači da je lokalni anestetik najvjerojatnije apliciran intravaskularno, a negativan nalaz ne znači nužno da lokalni anestetik neće biti injiciran u krvnu žilu.

Nastanak hematoma kao komplikacije tijekom aplikacije lokalnog anestetika posljedica je laceracije krvne žile, vene ili arterije. Kao posljedica laceracije arterije hematoma nastaje nego među neznačajno i za pacijenta i za terapeuta. Povećani intravezni tlak uzrokuje efuziju krvnog sadržaja u meku tkivu. Veličina hematoma ovisi o gustoći tkiva zahvaćenog tkiva, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoći tkiva zahvaćenog tkiva. Najčešće nastaje krvna žila, a većina hematoma ovisi o gustoć

Discussion

The use of modern anesthetics appears to be safe, although a maximum care must be taken when applying an appropriate anesthetics. In addition to that an adequate technique should be used. This implies also the administration of a minimal but effective dose for a certain dental treatment. When a local anesthetic is applied, either infiltration or block, it is of utmost importance to perform aspiration (1). In this way, systemic activity can be avoided. Simultaneously, local activity is being increased. It is a well-known fact that the posterior superior alveolar nerve block and the inferior alveolar nerve block are accompanied with a higher incidence of positive aspiration (4). Moreover, with positive aspiration we can highly expect that a local anesthetic will be administered intravascularly. However, negative aspiration dose does not necessarily mean that the local anesthetic was not injected into the blood vessel. Hematoma formation as a complication of local anesthesia is a result of venous or arterial laceration. In cases of traumatic artery rupture, a hematoma appears instantly and this is an embarrassing situation both for the patient and for the dentist. An elevated intrarterial pressure causes effusion of blood into the surrounding soft tissues. The size of hematoma depends on the density and compactness of affected tissue, while spreading of the hematoma ends at the moment in which the pressures of the tissue and the pressure in the vessel equalize. When a vein rupture is concerned, hematoma does not necessarily occur. In the presented case it can be said with great certainty that arterial laceration was the issue. From the anatomical point of view, one might speculate that either a branch of upper labial or a distal branch of the infraorbital or a proximal part of angular vein artery was ruptured. In similar cases, we should not completely eliminate a hemangioma as an underlying etiology. The latter was excluded both by clinical examination and panoramic imaging analysis after the hematoma subsided. Therefore, we concluded that there was no need for additional radiological examination such as computed tomography and angiography. Moreover, hemophilia as an underlying cause has also been excluded and the patient was not sent for further laboratory testing. In the end, the most important part is to recognize the symptoms and signs and to start the treatment without delay. The treatment includes compression of the affected site with ice packs and the antibiotic therapy (5). By doing so, a further advancement of the hematoma and its infection are prevented. From the available medical documentation it can be seen that the patient did not receive adequate treatment. In the early stage it was thought that some local allergic reaction occurred. Later on,
Abstract
Hematoma is among less frequent complications which occur following local anesthesia. The posterior or superior alveolar nerve block and inferior alveolar nerve block are known to be accompanied with a higher incidence of positive aspiration compared to all infiltration and block anesthesia techniques in oral surgery. We present the case of an otherwise healthy 8-year-old boy who experienced a large cheek hematoma after a routine infiltration anesthesia in the maxilla. Firstly, he was mistakenly treated under the diagnosis of type 1 allergic reaction. Subsequently, the topical therapy for an evident, large hematoma was unsuccessful. Ultimately, incision of the infected hematoma and antibiotic therapy were crucial for its resolution. Early recognition of clinical signs of hematoma is of utmost importance for the surgeon in order to treat the patient adequately.

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Zaključak
Komplikacije pri uporabi lokalnog anestetika ne mogu se potpuno spriječiti. Pravilnim odabirom lokalnog anestetika i ispravnom tehnikom davanja one se mogu svesti na najmanju moguću mjeru. Brzo prepoznavanje kliničke slike hematomi i adekvatno liječenje hladnim oblozima i antibiotikom nužno je za njegovu ograničavanje i daljnje pogoršanje, tj. za spriječavanje infekcije.

Conclusion
Complications with the use of local anesthetics cannot be absolutely prevented. However, making the right choice for local anesthesia and correct technique applied can minimize their incidence. It is crucial to promptly recognize clinical signs of hematoma and to adequately treat the patient. Ice packs and antibiotic therapy are necessary for the prevention of hematoma propagation and its infection.