Post-Discharge Complications of Dental Treatment in General Anesthesia Performed in a Day-Care Service

Komplikacije stomatološke sanacije u općoj anesteziji nakon otpusta iz sustava jednodnevne kirurgije

Introduction

Dental treatment in general anesthesia (GA) is usually performed as a last resort when other behavior management techniques fail. In spite of its advantages such as patients’ unresponsiveness, postoperative amnesia, constant patient monitoring and optimal drug titration, dental treatment in GA carries increased risk for intra and postoperative complications compared to dental treatment in local anesthesia. Postoperative complications include drowsiness and pain in 40(60.6%) patients. Complications were managed by parents or caregivers with conservative measures at home in 57(91.9%) cases. Phone consultation with dentist was required in 5(8.1%) cases. One patient (1.6%) was readmitted. Younger age and diagnosis were associated with increased risk for drowsiness. Conclusion: Post discharge complications of dental treatment in GA in a day-care service are common and they can be managed by parent/caregiver with conservative measures at home. The rate of readmission is low. Dental treatment in GA in a day-care service is a safe procedure that can be performed with acceptable risk in carefully selected patients.

Uvod

Stomatološko liječenje u općoj anesteziji (OA) obično se primjenjuje kao zadnja opcija kada ne djeluju druge tehnike kontrole ponašanja. U natoč prednostima poput mirnoće pacijenta, postoperativne amnezije i optimalne titracije lijekova, stomatološko liječenje u OA povećava rizik za intra i postoperativne komplikacije u usporedbi sa stomatološkim liječenjem u lokalnoj anesteziji. Postoperativne komplikacije obuhvaćaju mučninu, povraćanje, iritabilnost i uznemirenost, poremećaj spavanja, bol, krvarenje, grlobolju itd. (1, 2). Postoperativnih komplikacija značajno varira od studije do studije – od zanemarivoga do više od 90 % pacijenata.
ble number of patients to more than 90% of the patients (3–5). Therefore, the decision to treat the patient in GA is made when the benefit of dental treatment outweighs the risk of aforementioned complications. Postoperative complications are of special concern for day-care based procedures as they happen when a patient is no longer under medical supervision. In spite of that, they are usually mild and the rate of readmissions is low (4,6).

Dental treatment in GA started at the Dental Clinic’s day care service, University Clinical Hospital Zagreb in January 2017. By July 2019, more than 200 patients have undergone full mouth restoration. In our previous report we focused on patient characteristics, type of procedures and intraoperative complications (7). However, we had no data about the complications which happened after patients have left the hospital and were no longer under our supervision. We also wanted to know how these complications were managed and, most importantly, whether our treatment resulted in any significant complication that required hospitalization. Therefore, the aim of this paper was to review the frequency and management of post-discharge complications in patients who underwent full mouth restoration in GA in a day care surgery setting and to identify factors that increase risk for postoperative complications after dental treatment in GA.

Material and methods

The study was approved by the Ethics Committee of the University of Zagreb, School of Dental Medicine and University Clinical Hospital Zagreb. Anonymous questionnaire was sent by an email to the parents and caregivers of patients who underwent full mouth restoration in GA at the Dental clinic’s day-care service, University Clinical Hospital Zagreb between 1st January 2017 and 31st July 2019. Since this was an online survey, participants did not sign the informed consent. Instead, they had to read the consent form and confirm their agreement before proceeding to the survey.

GA procedure consisted of target control infusion (TCI) anesthesia (propofol/remifentanil), which was described in our previous report (7). Dental treatment included prophylactic cleaning, restoration of carious lesions, extraction of non-restorable teeth. The extraction site was infiltrated with local anesthetic (4% articaine with epinephrine 1:200000). Resorbable sutures were applied when necessary. Antibiotic treatment was introduced based on clinical judgement. After the procedure, patients were monitored in the recovery room and discharged based on anesthesiologist’s and dentist’s evaluation, usually 1.5–2 hours after the procedure. Parents and caregivers received oral and written instructions about related complications and their management from the attending dentist.

The questionnaire consisted of three parts. In the first part, general demographic and clinical data were collected (age, sex, year of treatment, diagnosis/reason for the treatment in GA, number of previous dental treatments in GA, number of extracted teeth, antibiotic and analgesic use). Second part of the questionnaire registered data about postoperative complications (type of complication, day of onset and – 5). Zato se odluka o stomatološkom liječenju u OA donosi kada dobrobit stomatološkog liječenja nadilazi rizik od navedenih komplikacija. Postoperativne komplikacije posebno su problem za zahvate u jednodnevnoj kirurgiji jer se događaju kada pacijent više nije pod medicinskim nadzorom. Unatoč tomu, obično su blage i postotak ponovnog dolaska u bolnu je nizak (4, 6).

Stomatološko liječenje u OA započeto je u Zavodu za jednodnevnu kirurgiju KBC-a Zagreb u siječnju 2017. Do srpnja 2019. više od 200 pacijenata bilo je podvrgnuto potpunoj stomatološkoj sanaciji. U prethodnom radu fokusirali smo se na karakteristike pacijenata, tip zahvata i intraoperativne komplikacije (7). Međutim, nismo imali podatke o komplikacijama koje su se događale nakon što bi pacijenti napustili bolnicu i nisu više bili pod našim nadzorom. Uz to, zanimao nas je kako su navedene komplikacije bile liječene i najviše od svega, je li naše liječenje rezultiralo značajnim komplikacijama koje bi zahtijevala hospitalizaciju. Zato je svrha ovog istraživanja bila ispitati frekvenciju i liječenje komplikacija nakon otpUSTA pacijenata podvrugnutih stomatološkoj sanaciji u OA u sustavu jednodnevne kirurgije i identificirati čimbenike koji povećavaju rizik od postoperativne komplikacije poslije stomatološkog liječenja u općoj anesteziji.

Ispitanici i postupci

Istraživanje je odobrilo Etičko povjerenstvo Stomatološkog fakulteta Sveučilišta u Zagrebu i KBC-a Zagreb. Anonimni upitnik poslan je elektroničkom poštom roditeljima i skrbnicima pacijenata koji su bili na stomatološkom liječenju u OA u Zavodu za jednodnevnu kirurgiju KBC-a Zagreb od 1. siječnja 2017. do 31. srpnja 2019. Budući da je bila riječ o online istraživanju, sudionici nisu potpisivali informirani pristanak. Umjesto toga trebali su pročitati tekst informiranog pristanka i potvrditi da su suglasni prije nego što nastave s ispunjavanjem upitnika. Postupak OA sastojao se od target control infusion (TCI) anestezije (propofol/remifentanil) koji je opisan u našem prijašnjem radu (7). Stomatološka sanacija obuhvaćala je uklanjanje mekih i tvrdih naslaga, profilaktičko pečaćenje fisuра, restauraciju karijesnih lezija i ekstrakciju zuba koji se nisu mogli sanirati. Mjesto ekstrakcije infiltrirano je lokalnim anestetikom (4-postotni artikain s adrenalino 1 : 200 000). U slučaju potrebe postavljeni su resorptivni šavovi. Antibiotička terapija ordinirana je na temelju kliničke procjene. Nakon zahvata pacijenti su promatrani u sobi za oporavak i otpušteni na temelju procjene anesteziologa i stomatologa, u prosjeku od 1,5 do 2 sata poslije zahvata. Roditelji/skrbnici dobili su od stomatologa usmene i pismene upute o postupanju nakon zahvata, komplikacijama i njihovu liječenju.

Uputnik se sastojao od triju dijelova. U prvom dijelu prikupljali su se opći demografski i klinički podatci (dob, spol, godina liječenja, dijagnoza/razlog za liječenje u OA, prijašnja stomatološka liječenja u OA, broj ekstrahiranih zuba, upotreba antibiotika i analgetika). U drugom dijelu bilježili su se podatci o postoperativnim komplikacijama (vrsta komplikacija, početak i trajanje). U trećem dijelu ispitivali smo nači-
duration). In the third part we assessed the management of postoperative complications and the need for readmission.

The data were organized into Microsoft Excel (Microsoft Excel, Microsoft Inc., USA) spreadsheets. SPSS 11.0 software (IBM Inc., USA) was used for statistical analysis. Distribution of the data was tested by the Kolmogorov-Smirnov test. Due to non-normal distribution of the data, the Kruskal Wallis test was used to assess differences between linear variables and the chi-square test was used to assess differences between categorical variables. To identify factors associated with increased risk of postoperative complications, a logistic regression analysis was used. Patient’s age, diagnosis, dental extractions and antibiotic treatment were used as control variables, and p value lower than 0.05 (p<0.05) was considered statistically significant.

Results

The questionnaire was sent to 216 parents and caregivers. The response rate was 30.5% (66 respondents). The majority of patients were males (43/65.2%). The median age of the patient was 10 (4-37). For the majority of the patients (46/69.7%), this was the first time they have undergone dental treatment in GA. The most common reason for the treatment in GA was autism (26/39.4%), followed by cerebral paralysis (10/15.1%) and mental retardation (7/10.6%). Demographic and clinical characteristics of the patients are displayed in Table 1.

Postoperative complications and their frequencies are presented in Table 2. Most commonly reported complications were drowsiness and pain, both reported in 40 (60.6%) patients. A significantly higher frequency of cough and epistaxis was found among patients who underwent dental treatment due to severe gag reflex compared to other diagnoses (p=0.019 and 0.034, respectively). Difficulty eating was significantly more reported among patients who underwent dental extractions compared to the patients who did not (p=0.021). No significant difference in the frequency of complications was found between the patients who were prescribed antibiotics compared to those who were not. Furthermore, no significant difference in the frequency of complications was found between patients who underwent dental treatment for the first time compared to those who had previously undergone dental treatment(s) in GA (Table 2).

Complications occurred on the day of the procedure in 41 (61.9%) patients, 1 day after the procedure in 16 (23.8%) patients, 3 days after the procedure in 6 (9.5%) patients and 4 days after the procedure in 3 (4.8%) patients (Table 3). Median duration of complications was 2 (1-8) days. Sixty-two parents or caregivers responded about the management of complication(s). In 57 (91.9%) patients, complications were managed independently by parents or caregivers with conservative measures at home (analgesics and/or local measures - ice packs, compression etc.). Phone consultation with the dentist or general medical practitioner was required in 5 (8.1%) cases. Out of these 5 patients, one patient (1.6%) was admitted to the hospital. This patient was a 7-year-old boy with cerebral paralysis who developed fever, nausea and vomit.

Rezultati

Upitnik je poslan na adrese elektroničke pošte 216 roditelja i skrbnika. Postotak odgovora bio je 30.5% (66). Veći odgovarač bila je ženskog spola (43/65,2%). Medijan dobi iznosio je 10 godina (raspon 4 – 37). Za većinu pacijenata (46/69,7%) bio je to prvi put da su stomatološki liječeni u OA. Najčešći razlog za takvo liječenje bio je autizam (25/39,4%) i mentalna retardacija (7/10,6%). Demografske i kliničke karakteristike pacijenata prikazane su u tablici 1.

Učestalost postoperativnih komplikacija prikazana je u tablici 2. Najčešće komplikacije bile su osamučenost i bol – obje je navelo 40 pacijenata (60,6%). Kašalj i epistaks zabilježeni su u statistički značajno višem postotku kod pacijenata koji su liječeni u OA zbog teškog refleksa na povraćanje u usporedbi s drugim dijagnozama (p = 0,019 i 0,034). Otežano jedinjenje zabilježeno je u statistički značajno višem postotku među pacijentima kojima su ekstrahirani zubi u odnosu prema onima kojima zubi nisu izvadieni (p = 0,021). Nisu utvrđene statistički značajne razlike u frekвенци komplikacija između pacijenata kojiima je ordinirana antibiotička terapija i onih kojima nije propisana. Nadalje, nisu utvrđene statistički značajne razlike u frekvenciji komplikacija između pacijenata koji su bili prvi put stomatološki liječeni u OA u usporedbi s onima koji su veći bili tako liječeni (tablica 2).

Komplikacije se su pojavile na dan zahvata u 41 pacijenta (61,9 %), jedan dan nakon zahvata u 16 pacijenata (23,8 %), tri dana nakon zahvata u 5 pacijenata (7,5 %) i četiri dana nakon zahvata u tri pacijenta (4,8 %) (tablica 3). Medijan trajanja komplikacija iznosio je dva dana (1 – 8). Na pitanje o liječenju komplikacija odgovorila su 62 roditelja/skrbnika. Komplikacije 57 pacijenata (91,9%) samostalno su kod kući konzultirali mjere liječenja roditelji/skrbnici (analgetici i/ili lokalne mjere – hladni oblozi, ekstrakcija zuba i antibiotička terapija). U pet slučajeva (8,1%) kontaktirali su se telefonom sa stomatologom ili liječnikom obiteljske medicine. Ovi pacijenti su se osušeni na bolnoj temperaturi. Bio je to 7-godišnji dječak s cerebralnom paralizom koji je dobio povisenu tjelesnu temperaturu, osjećao je mučninu i povraćao je dan nakon zahvata. Pacijentu je izvadeno devet zuba i ordinirana je antibiotička terapija.
Table 1. Demographic and clinical characteristics of the patients
Tablica 1. Demografske i kliničke karakteristike ispitanika

| Characteristic                          | Female • Ženski (N) | Male • Muški (N) | Age median (range) |
|----------------------------------------|---------------------|------------------|--------------------|
| Diagnosis/ Reason for dental treatment | Healthy, noncompliant patient • Zdrav, nesuradljiv pacijent | 3 (4.5) | 23 (34.8) |
|                                        | Autism • Autizam    | 26 (39.4)        | 10 (4-37)          |
|                                        | Cerebral paralysis • Cerebralna paraliza | 10 (15.1) | 43 (65.2) |
|                                        | Mental retardation • Mentalna retardacija | 7 (10.6) | 10 (4-37) |
|                                        | Down syndrome • Downov sindrom | 2 (3.1) | 10 (4-37) |
|                                        | Extreme dental phobia • Ekstremna dentalna fobija | 2 (3.1) | 10 (4-37) |
|                                        | Severe gag reflex • Teški refleks na povraćanje | 1 (1.5) | 10 (4-37) |
|                                        | Medically complex patient • Medicinski kompleksan bolesnik | 6 (9.1) | 10 (4-37) |
| Procedure too extensive for local anaesthesia • Propozen zahvat za lokalnu anesteziju | 9 (13.6) | 10 (4-37) |

First time in general anaesthesia • Prvi put u općoj anesteziji N (%) | Yes | 21 (31.8) | No | 45 (68.2) |
First dental treatment in general anaesthesia • Prvi stomatološki zahvat u općoj anesteziji N (%) | Yes | 46 (69.7) | No | 20 (30.3) |
Dental extractions • Ekstrakcije zuba N (%) | Yes | 53 (80.3) | No | 13 (19.7) |
No. of extracted teeth • Broj ekstrahiranih zuba | median (range) | 2 (0-18) |
Antibiotic therapy • Antibiotičko liječenje N (%) | Yes | 35 (53) | No | 30 (45.5) |
| Missing | 1 (1.5) |
Analgesic therapy • Liječenje analgeticima | Yes | 40 (60.6) | No | 26 (39.4) |
Duration of analgesic therapy (days) • Trajanje liječenja analgeticima (dani) Median (range) | 2 (1-8) |

Logistic regression analysis showed that age was associated with decreased risk for postoperative drowsiness (OR: 0.903; 0.95CI: 0.818-0.997; p=0.044) and increased risk for postoperative cough (OR: 1.278; 0.95CI: 1.022-1.599; p=0.032). Also, the diagnosis was significantly associated with drowsiness (OR:0.675; 0.95CI: 0.525-0.867; p=0.002). No other significant associations were found (Table 4).

Discussion

The results of our survey show that complications after dental treatment in GA occur frequently but are mild and short lasting, which is in concordance with other studies in the literature (8–12). Most frequent post discharge complications in our patients were drowsiness and pain, which were both reported in 40 (60.6%) patients. Drowsiness is very common after dental treatment in GA with prevalence being 1 day after the procedure. The patient underwent 9 dental extractions and was prescribed an antibiotic.

Rasprava

Rezultati našeg istraživanja pokazuju da se komplikacije poslije stomatološkog liječenja u OA događaju često, ali su blage i kratkotrajne, što je u skladu s ostalim studijama u literaturi (8 – 12). Najčešće komplikacije u našim pacijentima bile su ošamućenost i bol – prijavilo ih je 40 pacijenata (60.6%). Ošamućenost poslije stomatološkog liječenja u OA vrlo je česta, a prevalencija iznosi od 13 do 84 % (3,
## Table 2
Frequency of postoperative complications

| Type of complication • Vrsta komplikacije | Yes • Da | No • Ne | Not sure • Nisam siguran | Missing • Nema odgovora | Diagnosis • Dijagnoza | Previous dental treatment(s) in GA • Prijašnje liječenje u OA-u | Dental Extractions • Ekstrakcija zuba | Antibiotic Treatment • Antibiotičko liječenje | N (%) |
|-----------------------------------------|---------|--------|----------------------------|--------------------------|------------------------|----------------------------------|---------------------------------|-------------------------------|-------|
| Drowsiness • Ošamućenost              | 40 (60.6) | 20 (30.3) | 6 (9.1) | 0 | 0.056 | 0.545 | 0.401 | 0.171 |
| Agitation • Uznemirenost              | 23 (34.8) | 38 (57.7) | 3 (4.5) | 2 (3) | 0.258 | 0.893 | 0.516 | 0.088 |
| Nausea • Mučnina                      | 5 (7.6) | 52 (78.8) | 9 (13.6) | 0 | 0.089 | 0.298 | 0.226 | 0.775 |
| Vomiting • Povraćanje                 | 1 (1.5) | 65 (98.5) | 0 (0) | 0 | 0.694 | 0.506 | 0.618 | 0.276 |
| Fever • Povišena temperatura          | 2 (3) | 61 (92.4) | 3 (4.5) | 0 | 0.888 | 0.251 | 0.515 | 0.219 |
| Cough • Kašalj                         | 7 (10.6) | 57 (86.4) | 1 (1.5) | 1 (1.5) | 0.019* | 0.052 | 0.706 | 0.346 |
| Impaired sleep • Poromećaj sna         | 3 (4.5) | 56 (84.8) | 7 (10.6) | 0 | 0.965 | 0.989 | 0.203 | 0.743 |
| Sore throat • Grlobolja               | 10 (15.2) | 43 (65.2) | 13 (19.7) | 0 | 0.114 | 0.999 | 0.166 | 0.413 |
| Epistaxis • Epistakska                | 3 (4.5) | 61 (92.4) | 2 (3) | 0 | 0.034* | 0.429 | 0.056 | 0.259 |
| Pain • Bol                            | 40 (60.6) | 12 (18.2) | 14 (21.2) | 0 | 0.684 | 0.196 | 0.185 | 0.173 |
| Swelling • Oteklina                   | 15 (22.7) | 48 (72.7) | 3 (4.5) | 0 | 0.750 | 0.265 | 0.320 | 0.449 |
| Bleeding • Krvarenje                  | 24 (36.4) | 39 (59.1) | 3 (4.5) | 0 | 0.279 | 0.333 | 0.106 | 0.128 |
| Difficulty eating • Otežano jedjenje   | 38 (57.6) | 23 (34.8) | 5 (7.6) | 0 | 0.409 | 0.880 | 0.021* | 0.076 |
| Inability to eat • Nemogućnost jedjenja | 11 (16.7) | 49 (74.2) | 6 (9.1) | 0 | 0.970 | 0.963 | 0.227 | 0.701 |

*significant difference (p < 0.05) / značajna razlika (p < 0.05)

## Table 3
Clinical characteristics of complications

| Occurrence of complication • Pojava komplikacije | N (%) |
|-----------------------------------------------|-------|
| Day 0 • Dan 0                                | 41 (61.9) |
| Day 1 • Dan 1                                | 16 (23.8) |
| Day 2 • Dan 2                                | 0 |
| Day 3 • Dan 3                                | 6 (9.5) |
| Day 4 • Dan 4                                | 3 (4.8) |

| Duration Median (Range) • Trajanje Median (Raspon) | 2 (1-8) |
|---------------------------------------------------|---------|
| Management • Liječenje • G63 responses • G63 odgovora | 57 (90.5) |

| Conservative measures at home • Konzervativne mjere kod kuće | 57 (90.5) |
|-------------------------------------------------------------|---------|
| Admission to the hospital • Prijam u bolnicu               | 1 (1.6) |

63 responses • 63 odgovora
High prevalence of postoperative pain is not a common finding, occurring in 13-74% of the patients. This variability in pain occurrence can be attributed to the different methods used to estimate pain and the variability in patient populations across studies. A study by Ersin et al. (10) reported that the prevalence of postoperative pain dropped from 58.1% immediately after the procedure to 24.4% at home on the day of the procedure.

In our study, the assessment of drowsiness and agitation in young patients was conducted. The prevalence of drowsiness was 1.5-15.2%, indicating that these symptoms are less common in young patients (68.2%) compared to older patients. The prevalence of agitation was found to be 34.8%.

Table 4: Impact of demographic and clinical factors on the occurrence of postoperative complications – results of the regression analysis

| Type of Complication | Odds ratio (CI) | p     |
|----------------------|----------------|-------|
| Drowsiness • Ošamućenost | 0.903 (0.818-0.997) | 0.044* |
| Age • Dob            | 0.675 (0.525-0.867) |       |
| 0.002*               | 0.821 (0.637-1.059) | 0.821  |
| 3.899 (0.727-20.925) | 0.112            |
| Agitation • Uznemirenost | 0.967 (0.878-1.065) | 0.496 |
| Diagnosis • Dijagnoza | 0.837 (0.667-1.049) | 0.122 |
| 1.079 (0.845-1.376) | 0.542            |
| 2.249 (0.563-8.976) | 0.251            |
| Nausea • Mučnina     | 1.065 (0.959-1.183) | 0.238 |
| Dental Extractions • Ekstrakcije zuba | 0.689 (0.421-1.127) | 0.138 |
| 1.059 (0.811-1.383) | 0.673            |
| 0.880 (0.159-4.861) | 0.884            |
| Vomiting • Povraćanje | 0.749 (0.278-2.022) | 0.569 |
| Impaired sleep • Poremećaj sna | 0.960 (0.291-3.171) | 0.947 |
| 1.064 (0.646-1.753) | 0.807            |
| 4926 (0.000 - ) | 0.998            |
| Fever • Povišena temperatura | 0.974 (0.781-1.216) | 0.816 |
| 1.343 (0.855-2.108) | 0.200            |
| 1.436 (0.995-2.161) | 0.082            |
| 2.699 (0.129-56.431) | 0.522            |
| Cough • Kašalj       | 1.278 (1.022-1.599) | 0.032* |
| 1.903 (0.918-3.949) | 0.083            |
| 0.273 (0.064-1.160) | 0.079            |
| 0.356 (0.018-7.022) | 0.497            |
| Impaired sleep • Poremećaj sna | 0.999 (0.884-1.128) | 0.983 |
| 1.110 (0.797-1.546) | 0.536            |
| 0.763 (0.454-1.282) | 0.307            |
| 4.720 (0.530-42.019) | 0.164            |
| Pain • Bol           | 1.080 (0.938-1.243) | 0.286 |
| 0.939 (0.725-1.215) | 0.631            |
| 1.085 (0.822-1.433) | 0.563            |
| 0.315 (0.056-1.764) | 0.189            |
| Swelling • Oteklina  | 0.948 (0.850-1.056) | 0.330 |
| 1.091 (0.875 – 1.360) | 0.440            |
| 0.995 (0.797-1.242) | 0.963            |
| 2.246 (0.526-9.586) | 0.274            |
| Bleeding • Krvarenje | 0.984 (0.889-1.077) | 0.726 |
| 1.199 (0.966-1.489) | 0.440            |
| 1.214 (0.923-1.596) | 0.166            |
| 1.977 (0.491-7.960) | 0.338            |
| Difficulty eating • Otežano jenje | 1.107 (0.986-1.243) | 0.085 |
| 1.064 (0.863-1.312) | 0.562            |
| 1.252 (0.932-1.681) | 0.135            |
| 0.792 (0.202-3.104) | 0.737            |
| Inability to eat • Nemoćućnost jenja | 1.036 (0.949-1.132) | 0.431 |
| 1.007 (0.809-1.252) | 0.954            |
| 1.117 (0.895-1.395) | 0.328            |
| 0.657 (0.162-2.659) | 0.555            |
| Sore throat • Grolbolja | 1.097 (1.000-1.204) | 0.051 |
| 0.951 (0.759-1.191) | 0.661            |
| 1.180 (0.938-1.484) | 0.157            |
| 0.449 (0.109-1.853) | 0.268            |
| Epistaxis • Epistaksa | 1.042 (0.891-1.219) | 0.606 |
| 1.190 (0.783-1.808) | 0.416            |
| 0.402 (0.117-1.382) | 0.148            |
| 0.814 (0.047-14.205) | 0.888            |

*significant difference (p < 0.05) / značajna razlika (p < 0.05)
surprising since majority of these patients undergo extensive procedures in order to eliminate all existing dental pathologies. These procedures often include numerous extractions, due to high dental caries activity. Dental extractions were performed in great majority (53/80.3%) of our patients and the median number of extracted teeth was 2 (0-18). However, dental extractions were not associated with occurrence of oral pain. It is possible that pain was related to other procedures that inevitably included manipulation with soft oral tissues, which could have resulted in postoperative discomfort. One might question this finding since majority of our patients (44/66.7%) had some form of intellectual or emotional impairment and their ability to express their pain could have been affected. This could be the reason why one fifth (14/21.2%) of the parents/caregivers responded “I don’t know” to a question about pain. However, we believe that the reported frequency of pain is realistic since another complication closely related to oral pain, i.e. difficulty eating, was reported in similar number of patients (38/57.6%). Even though difficulty eating was more frequently reported among patients who underwent dental extractions (34/64.2% vs. 4/30.8%), dental extractions were not found to be independent risk factor for the development of this complication in logistic regression model. We believe this was primarily due to small number of participants. Oral bleeding was reported in 24 (36.4%) patients which is a prevalence similar to other studies (3,10). However, we believe that in majority of the patients there was no serious bleeding that required medical intervention, but rather normal postoperative ooze that was mistaken for bleeding by parents/caregivers. This assumption is reinforced by the fact that none of the patients required professional assistance.

Even though post discharge complications were frequent, majority of them were managed by the parents/caregivers with conservative measures at home and only one patient (1.5%) was readmitted to hospital. The rate of unplanned admissions after a day care surgery is reported to be 1.8-3.5% (13,14). On the other hand, Verco et al. (6), reported only 22 cases (0.13%) of clinical incidents that required transfer to the hospital among 17557 dental procedures in GA in a day-care unit performed in 5 years. The authors applied more strict exclusion criteria for GA in a day-care setting among other patients with quadriplegia. Therefore, our patient would not even be considered to be a candidate for GA in a day-care unit performed in 5 years. The authors applied more strict exclusion criteria for GA in a day-care setting among other patients with quadriplegia. Therefore, our patient would not even be considered to be a candidate for GA in a day-care setting. We believe that the difference in readmission rates is primarily due to a significantly greater number of cases in the study of Verco et al. (6) and that with time, readmission rates in our service will drop.

This study has several limitations that need to be mentioned. This study is retrospective and the data are based on parents/caregivers’ recollection which might alter with time. However, we feel that dental treatment in GA presents a strong experience for patients as well as for parents/caregivers and that any significant complication would not be foreseen. This especially refers to complications requiring transfer to the hospital, which were the primary concern of our study. Another limitation is a relatively low number of participants. Even though the number is small, it represents near-prevalence boli ne iznenađuje zato što je većina tih pacijenata bila podvrgnuta opsežnim zahvatima kako bi se eliminirala sva postojeća odontogena patologija. Navedeni zahvati često uključuju mnogobrojne ekstrakcije zuba zbog visoke aktivnosti karijesa. Većinu naših pacijenata (53/80.3%) rade su ekstrakcije zuba, a medijan ekstrahiranih zuba iznosio je 2 (0 – 18). Doduše, ekstrakcije zuba nisu bile povezane s boli. Moguće je da je bila povezana s drugim zahvatima koji su nužno uključivali manipulaciju mekim tkivima, što je moglo rezultirati postoperativnom nelagodom. Taj se rezultat može propitivati jer je većina naših pacijenata (44/66.7%) imala neki oblik intelektualnog ili emocionalnog oštećenja koje je moglo utjecati na njihovu sposobnost izražavanja boli. To može biti razlog zašto je jedna petina roditelja/skrbnika (14/21,2%) na pitanje o boli odgovorila: „Ne znam“. Unačo tomu vjerujemo da je prijavljena frekvencija boli realna jer je druga komplikacija blisko povezana s boli (otežano jedenje) prijavljena u sličnom postoktu (38/57.6% pacijenata). Iako je otežano jedenje češće prijavljeno za pacijente kojima su izvađeni zubi (34/64,2 % vs. 4/30,8 %), ekstrakcije nisu bile neovisni čimbenik rizika za razvoj te komplikacije u našem regresijskom modelu. Vjerujemo da je to uglavnom posljedica malog broja ispitana. Krvarjenje se pojavilo kod 24 pacijenta (36,4%), što je postotak sličan onomu u ostalim studijama (3,10). Mišljenja smo da kod većinu pacijenata nije bilo ozbiljnog krvarjenja koje je zahtijevalo medicinsku intervenciju, nego je bila riječ o normalnom postoperativnom curenu koje su roditelji/skrbnici pogrešno proglašali krvarjenjem. U prilog tomu je i činjenica da ni jedan od pacijenata nije trebao profesionalnu pomoć.

Iako su komplikacije poslije otpusta bile česte, većinu su sanirali roditelji/skrbnici konzervativnim mjerama kod kuće i samo je jedan pacijent (1,5%) ponovo primljen u bolnicu. Postotak neplaniranih hospitalizacija poslije zahvata u jednodnevnoj kirurgiji iznosi od 1,8 do 3,5 % (13, 14). Istražnici smiju da su Verco i suradnici (6) izvijestili o 22 slučajima (0,13 %) koji su zahtijevali prijam u bolnicu, na 17557 stomatoloških zahvata u OA provedenih u sustavu jednodnevne kirurgije u petogodišnjem razdoblju. Autori su primijenjivali strože isključne kriterije za prijam pacijenata u jednodnevnu kirurgiju, među kojima i kvadruplegijom. Tako naš pacijent ne bi uopće bio kandidat za stomatološko liječenje u OA u sustavu jednodnevne kirurgije. Mišljenja smo da je razlika u postotku ponovnog primtka u bolnicu ponajprije posljedica značajno većeg broja zahvata u studiji Verco i suradnika (6) i da će se s vremenom postotak ponovnih hospitalizacija u našoj ustanovi smanjiti.

Ovo istraživanje ima ograničenja koja je potrebno spomenuti. Istraživanje je retrospektivno i podatci su temeljni na prisjećanju roditelja/skrbnika koje se s vremenom može promijeniti. Ipak mislimo da je stomatološko liječenje u OA snažno iskustvo kako za pacijente tako i za roditelje/skrbnike, te da je značajne komplikacije teško previdjete. To se posebno odnosi na komplikacije koje bi zahtijevale prijam u bolnicu, što je bio primarni fokus našeg istraživanja. Drugo ograničenje je razmjerno malo ispitana. Iako je broj mali, to je gotovo trećina naših slučajeva (30,5 %) i mislimo da rezultati mogu snažno upućivati na trendove u prevalenciji kompli-
Stomatološko liječenje u jednodnevnoj kirurgiji
Brailo i sur.

Svrsna rada: Ispitati učestalost i liječenje komplikacija nakon otpusta pacijenata koji su bili podvrgnuti stomatološkom liječenju u općoj anesteziji (OA) u sustavu jednodnevne kirurgije i identificirati čimbenike koji povećavaju rizik od navedenih komplikacija. 

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MeSH pojmovi: posljeprooperativne komplikacije; stomatološka skrb; dnevna bolnica

Ključne riječi: opća anestezija, jednodnevna, stomatološko liječenje

Ključne riječi: opća anestezija, jednodnevna kirurgija, stomatološko liječenje u OA, poslijeoperativne komplikacije, stomatološka skrb, dnevna bolnica

Zaključak: Komplikacije stomatološkog liječenja u općoj anesteziji poslije otpusta iz jednodnevne kirurgije su česte, no roditelji/skrbnici mogu ih u većini slučajeva liječiti konservativnim mjerama bez pristupa bolничkom sustavu. Osim toga, postotak pacijenata koji su na početku liječenja pojavili složnosti nije izuzetno veliki.

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