

DANIEL VLCEK
AMIR RAZAVI
JOHANNES J. KUTTEN-
BERGER

Clinic for Oral and Maxillofacial
Surgery, Cantonal Hospital
Lucerne, Switzerland

CORRESPONDENCE

Dr. med. dent. Daniel Vlcek
Praxis Arcadens
Winterthurerstrasse 11
8180 Bülach
Tel +41 78 825 58 53
Fax +41 44 860 45 46
E-mail: danielvlcek@gmx.ch

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Wound management and the use of mouth rinse in mandibular third molar surgery

A survey among Swiss dentists

KEYWORDS

mandibular third molar,
wound management,
alveolar osteitis,
antiseptic mouth rinse,
survey

SUMMARY

The aim of this survey was to assess the knowledge and practice of Swiss dentists regarding wound management and the use of mouth rinse in surgical removal of mandibular third molars (MTM).

A postal survey was conducted among all 3,288 dentists who are members of the Swiss Dental Society (SSO) representing the majority of dentists in Switzerland. The questionnaire consisted of 13 questions with mostly multiple-choice answers. Demographic profile, surgical experience, the use of antibiotics, and wound management, i.e. wound closure and the use of mouth rinse were assessed. The response rate was 55%. Semi-closed (59.1%), closed (19%) and open wound management (11.7%) were applied most often. Semi-closed wound management was preferred in the German-speaking region (67%) and

closed wound management was preferred in the French-speaking region (55%).

For semi-closed wound healing, drains impregnated with terra-cortril (42%) and iodoform-Vaseline (40%) were used. For closed wound management, most dentists reported leaving the wound to heal with the blood clot only (60.5%). Most dentists (74.5%) prescribed chlorhexidine 0.2% (CHX) mouth rinse when performing MTM surgery and a combination of immediate preoperative and postoperative use was preferred. Semi-closed wound management with drain and CHX mouth rinse is frequently used in Switzerland in the perioperative management in MTM surgery. It is a well-documented procedure leading to favourable outcomes without using any systemic antibiotics. However, wound management techniques differ between the three linguistic regions.

Introduction

Mandibular third molar (MTM) extraction is a procedure frequently performed by specialists or general dental practitioners in the dental practice. Alveolar osteitis (AO) (also known as dry socket or alveolitis sicca) or wound infection are the most frequent postoperative complications with incidences ranging from 2.59–32.5% (KREKMANOV & HALLANDER 1980, PAJAROLA & SAILER 1994, PAJAROLA ET AL. 1994, ARRIGONI & LAMBRECHT 2004, VOEGELIN ET AL. 2008). Risk factors for postoperative complications were assessed in earlier studies, and patient age as well as sex, use of oral contraceptives, smoking habits, oral hygiene, difficulty of surgery, tooth anatomy and position, therapeutic or prophylactic indication for extraction, wound management and surgical experience have been reported (AL-KHATEEB ET AL. 1991, PAJAROLA ET AL. 1994, ALEXANDER 2000, ARRIGONI & LAMBRECHT 2004, VOEGELIN ET AL. 2008, FREUDSPERGER ET AL. 2012).

Various techniques for wound management and the use of antimicrobial mouth rinse are described in the literature. Studies have shown that semi-closed, closed or open wound management techniques are commonly used (PAJAROLA & SAILER 1994, ARRIGONI & LAMBRECHT 2004, DANDA ET AL. 2010, HASHEMI ET AL. 2011). With any of these techniques, either resorbable or non-resorbable intra-alveolar dressings may be used and these can either be medicated or non-medicated. Non-resorbable dressings are normally left in the wound for the first few postoperative days before removal during a follow-up appointment (VOEGELIN ET AL. 2008, TORRES-LAGARES ET AL. 2010). Terra-cortril paste on cotton gauze is an antibiotic dressing frequently applied by Swiss dentists. Non-antibiotic dressings, i.e. mixtures of iodoform and Vaseline are also used, and non-medicated dressings such as cones of collagen are inserted into the socket for blood clot stabilization (RUTLEDGE & MARCOOT 1984, ARRIGONI & LAMBRECHT 2004).

In MTM surgery, mouth rinse is recommended to reduce postoperative complications and studies examined various antimicrobial ingredients, concentrations and the correct mode of use, i.e. either pre- or post-surgical (CASO ET AL. 2005). Chlorhexidine-digluconate is recommended to reduce inflammatory complications (HERMESCH ET AL. 1998, CASO ET AL. 2005, SRIDHAR ET AL. 2011).

So far no consensus has been reached concerning the most suitable kind of wound closure after MTM surgery.

In the first part of this study, which was published earlier, we reported on the prophylactic use of systemic antibiotics in MTM surgery (VLCEK ET AL. 2014). The aim of the second part is to assess the results of the survey sent to all members of the Swiss Dental Association (SSO), including board-certified oral and maxillofacial surgeons, regarding the various techniques of wound closure and the use of mouth rinse after extraction of MTM.

Materials and Methods

Study design and participants

A questionnaire-based survey was sent to all members of the SSO. All dentists registered on the mailing list in January 2012 received a two-page questionnaire to be completed anonymously, together with an introductory letter and a return envelope. The questionnaire and letter were written either in German, French, or Italian and sent to the dentists according to the language preference registered at the dental society. Three months were allowed for the return of the questionnaire. No reminder was sent.

Questionnaire

A clinical case of a 17-year-old healthy female scheduled for prophylactic surgical extraction of a vertically, partly bony impacted left MTM was presented to the dentists. The participants were requested to fill in the questionnaire according to their personal treatment plan. The questionnaire was divided into five sections, each with multiple questions (Fig. 1). Most questions were in a multiple-choice format and where necessary written comments were allowed. The five sections were as follows: 1) Personal data including university where the dentist had been trained and location of his or her practice. 2) Surgical experience, i.e., the number of prophylactic MTM surgical extractions per month. 3) Use of prophylactic systemic antibiotics and length of treatment. 4) Wound closure and use of drains or alveolar dressing. 5) Use of mouth rinse. Dentists who did not perform any extractions were not considered in the analysis of the results of questions three to five. Clinical photographs of wound closure were added to the questionnaire to facilitate understanding. The survey was returned to us by post.

Statistical analysis

All the completed questionnaires were statistically analysed. A logistic regression model was fitted to assess the influence of covariates on the use of antibiotics at a significance level of 0.05. The analysis was performed using the free statistical computing environment R, Version 2.15.1. (www.r-project.org).

Results

The results of sections 1–3 of the questionnaire and the demographic data on the participating dentists have already been published (VLCEK ET AL. 2014). Here we present the analysis of the results of sections 4 and 5 of the questionnaire regarding wound closure and the use of mouth rinse.

Of the 3,288 members of the SSO identified on the mailing list, 2,526 were German-, 619 French-, and 143 Italian-speaking dentists. We identified all 125 certified oral surgeons on the list of SSO members. A total of 1,795 questionnaires were completed and returned, representing 55% of all SSO-registered dentists in Switzerland. Only dentists who performed extractions of lower wisdom teeth in their practices were included in the analysis.

Wound closure

A total of 1,556 questionnaires regarding wound closure were included in the analysis. Wound management was most often semi-closed (reported by 59.1% of dentists), followed by closed (19%) and open wound management (11.7%). Dentists who used several wound closure techniques were considered “all-rounders” and accounted for 10.2% of respondents.

Answers regarding the type of drain used in semi-closed or open wound management are shown in Figures 2 and 3. Terra-cortril and iodoform-Vaseline drains were used by the majority of dentists. An intra-alveolar dressing used less frequently with these wound closure techniques was aureomycin-Vaseline drains: this was reported by 39 dentists. Four dentists used tetracycline-impregnated drains. A Chlumsky drain (alcohol-based solution of camphor and phenol applied on cotton gauze) was used by 3 dentists, and 2 practitioners used Alvogyl® (ready-to-use paste consisting of iodine, eugenol and butamben) (Dr. Wild & Co. AG, Muttentz). One colleague used CO₂-laser and one used softlaser.

1 – Personal profile

Date of birth:

Year of issue of dental qualification:

University:

Basel Berne Geneva Zurich

other university (country):

Location of practice (Canton):

Are you a board-certified Oral Surgeon (SSO)?

Yes No

2 – Surgical experience (single answer only)

Number of surgical prophylactic extractions of impacted or partially erupted mandibular third molars

per month

1-5 teeth 6-20 teeth >20 teeth

3 – Antibiotics (multiple answers possible)

No antibiotics (if appropriate proceed to section 4)

Preoperatively

24 h preoperatively 1 h preoperatively other

Postoperatively

1-3 days 3-7 days >7 days

Dosage

Morning-noon-evening Morning-evening other

Active principle (product name)

Amoxicillin (i.e. Clamoxyl®):

500 mg 750 mg 1000 mg

Amoxicillin with clavulanic acid

(i.e. Augmentin®, Co-Amoxicillin®, Aziclav®):

625 mg 750 mg 1000 mg

Clindamycin (i.e. Dalacin C® 300 mg)

Metronidazole (i.e. Flagyl®): 250 mg 500 mg

Other: Dose:

4 – Wound closure (single answer only)

Open healing (sutureless)

with iodoform-Vaseline drain

with terra-cortril drain

other drain

without drain, blood clot only

Semi-closed (few sutures, Fig. 1a)

with iodoform-Vaseline drain

with terra-cortril drain

other drain

without drain, blood clot only

Primary wound closure (multiple sutures, Fig. 1b)

resorbable socket dressing, non-medicated (i.e. collagen)

medicated socket dressing (i.e. antibiotics, chlorhexidine)

blood clot only

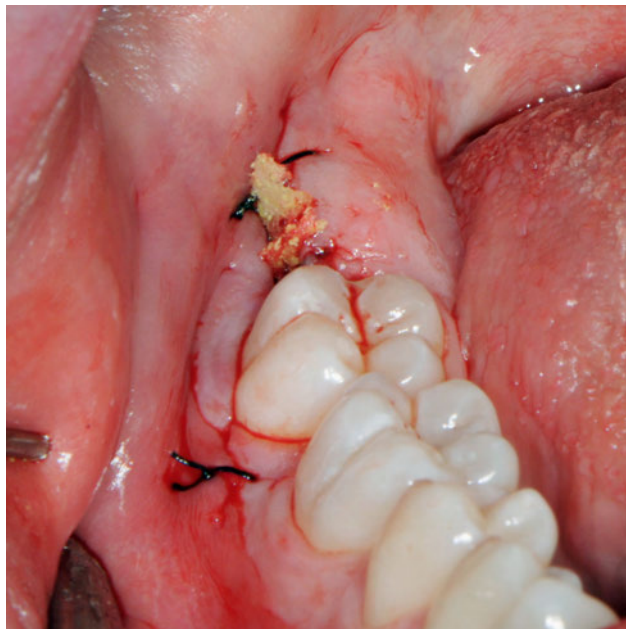


Fig. 1a: semi-closed wound closure



Fig. 1b: primary wound closure

5 – Mouth rinse (multiple answers possible)

No mouth rinse

Chlorhexidine: 0.05% 0.1% 0.2% other concentration:%

Other:

preoperatively (hours to days) immediately preoperatively postoperatively (multiple days)

Fig. 1 Questionnaire

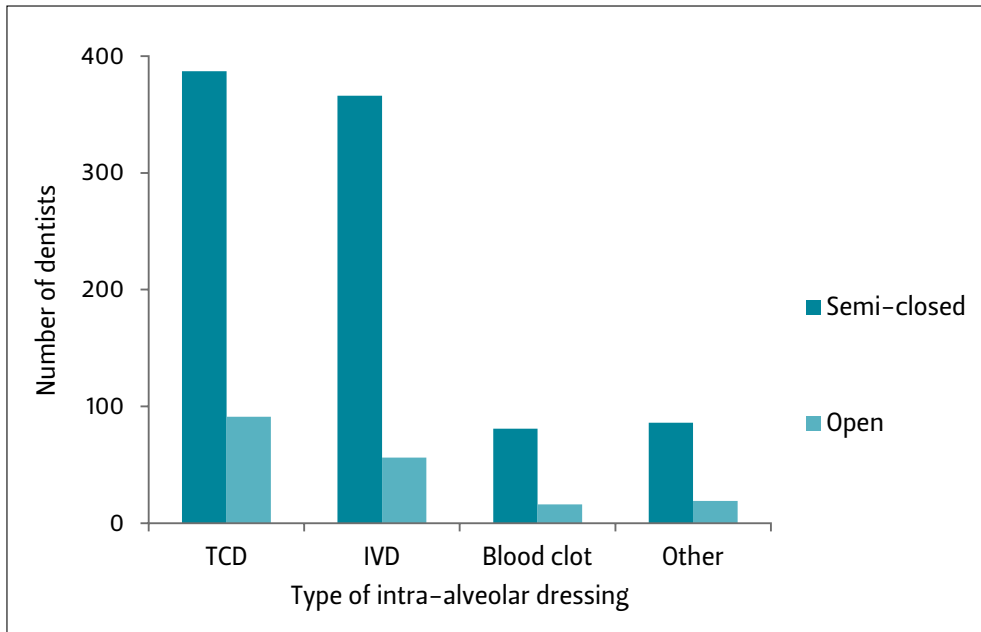


Fig. 2 Number of dentists using various types of intra-alveolar dressings in half-closed and open wound management. TCD: terra-cortril drain; IVD: iodoform-Vaseline drain

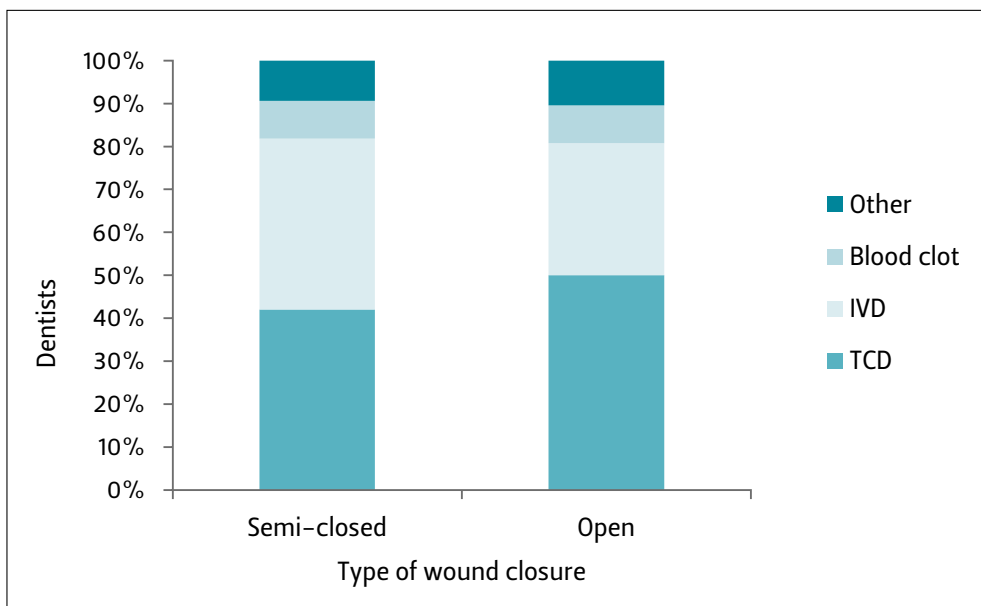


Fig. 3 Percentage of dentists using various types of intra-alveolar dressings in half-closed and open wound management. TCD: terra-cortril drain; IVD: iodoform-Vaseline drain

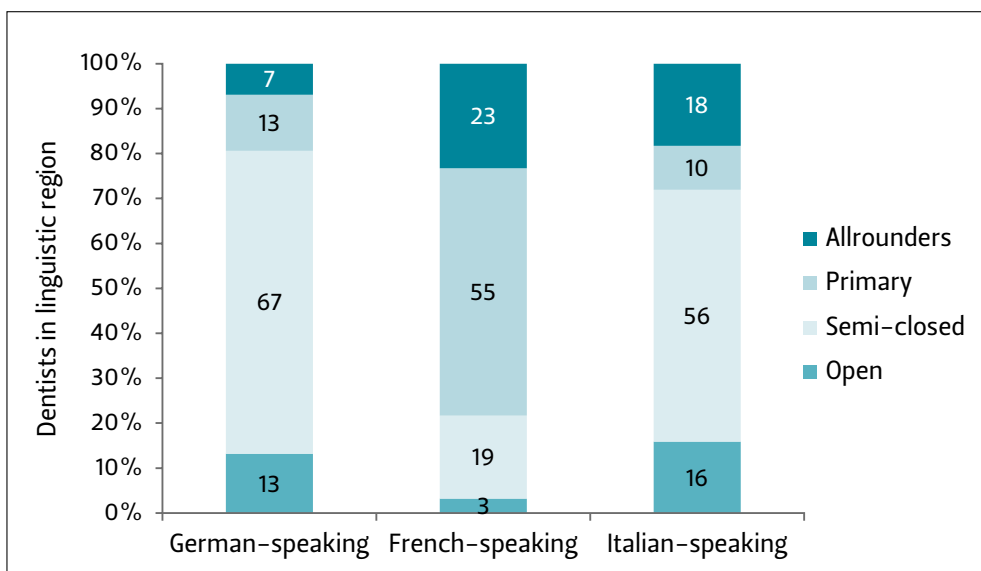


Fig. 4 German-, French-, and Italian-speaking dentists, and the percentage of various wound management techniques. Allrounders: dentists who use all three techniques

When performing closed wound management, most dentists left extraction sites to heal with a blood clot only (60.5%). Resorbable dressings were used by 31.8% and medicated dressings by 7.7% of dentists.

Dentists who usually prescribe antibiotics when performing MTM surgery mainly preferred to close the wound (38.9%) ($p < 0.005$). Fewer reported semi-closed (33.3%) and open wound healing (6.1%), or use of various wound closures (all-rounders) (21.1%).

Wound closing techniques differed between the three linguistic regions in Switzerland. In particular, in the French-speaking region closed wound management was preferred (55%) to other techniques. For details see Figure 4.

Mouth rinse

Responses to 1,551 questionnaires were included in the analysis. Most dentists used chlorhexidine mouth rinse (74.5%) when performing MTM surgery whereas 23% did not use any mouth rinse.

Most participants prescribed a concentration of 0.2% chlorhexidine (58.2%) whereas 34.2% used 0.1% chlorhexidine. Concentrations lower than 0.1% were used by 4.9% of dentists.

Questions regarding the mode of use showed that a combination of immediate preoperative and postoperative use was most often prescribed (43.4%). Figure 5 illustrates all modes of use of mouth rinse reported in this survey.

Mouth rinses other than chlorhexidine were used by 2.5% of dentists. Fourteen practitioners used Tebodont® (tea tree oil) mouth rinse (Dr. Wild & Co. AG, Muttenz), seven used Bucco-Tantum® (benzydamine) (Bayer AG, Zurich), three Meridol® (amine fluoride and stannous fluoride) (GABA Schweiz AG), three Listerine® (thymol, menthol, eucalyptol and methylsalicylate) (Johnson & Johnson AG, Zug) and two Octenidol® (octenidin) (Schülke & Mayr AG, Zurich) and hydrogen peroxide (H₂O₂) respectively. Iodine solution, Kamillosan® (camomile extract, peppermint oil) (MEDA Pharma GmbH, Wangen-Brüttisellen) and saline were each used by one study participant.

The use of mouth rinse significantly correlated with Italian language ($p = 0.04$), dentists with diplomas issued from

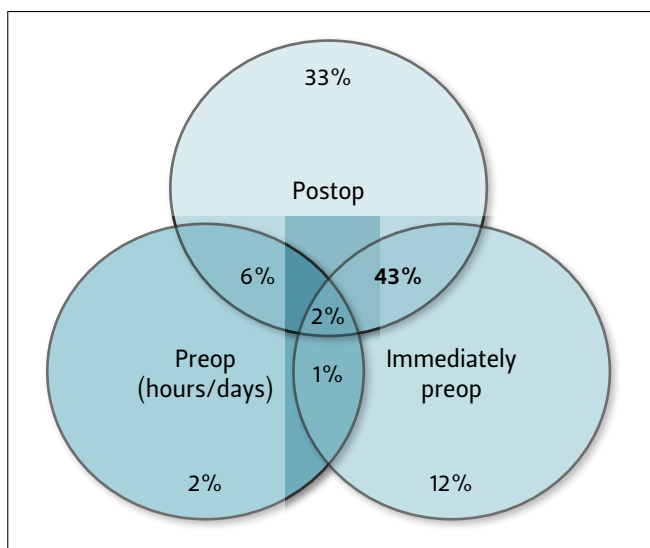


Fig. 5 Modes of use of mouth rinse and percentage of dentists prescribing each mode. Preop: preoperative; postop: postoperative

2001–2006 ($p = 0.002$) graduation from the universities of Basel ($p = 0.002$) and Berne ($p < 0.001$), and foreign dentists ($p = 0.04$).

Discussion

Wound closure

Appropriate wound management may significantly influence postoperative infection rates following MTM surgery. In our survey semi-closed wound management was used most often (59.1%). Closed wound management was chosen by 19% of dentists and open wound healing was the least frequent (11.7%).

Various studies have investigated the influence of wound closure on postoperative complication rates and variables such as pain and postoperative oedema (DE BRABANDER & CATTANEO 1988, PAJAROLA & SAILER 1994, DANDA ET AL. 2010, HASHEMI ET AL. 2011). In a prospective study, use of a iodoform-Vaseline drain and open wound healing was associated with a lower incidence of postoperative complications than a semi-closed technique (6% vs 1%). The authors stated that open wound healing was advantageous especially if patients had poor oral hygiene. A randomized clinical trial comparing semi-closed with closed wound management showed significantly less swelling and pain associated with the former. The incidence of AO (3.2% vs 4.3%) in the two groups was similar and no drain was used (DANDA ET AL. 2010). It is important to note however that subjects in this study were prescribed prophylactic antibiotics, thus results must be interpreted with caution and comparison with other studies where no antibiotics were administered cannot be conclusive. Recent studies of semi-closed wound management without antibiotics show equal postoperative infection rates (STRIETZEL & REICHART 2002, ARRIGONI & LAMBRECHT 2004, VOEGELIN ET AL. 2008). Interestingly, wound closure techniques varied between the three linguistic regions of Switzerland. Fifty-five per cent of French-speaking dentists used closed wound management, whereas this technique was used by only 13% of German- and 10% of Italian-speaking dentists. One reason for this could be different training received by dentists in the French-speaking area, i.e. at the University of Geneva where closed wound management is taught. Another reason might be the more frequent use of antibiotics in the French-speaking region as reported in the previous survey (VLCEK ET AL. 2014). With the concomitant use of antibiotics, a low incidence of AO can be expected with closed wound management techniques (LOPEZ-CEDRUN ET AL. 2011). Another advantage of closed wound management over semi-closed and open wound management is the decrease in healing time by 8 and 16 days respectively (SAILER & PAJAROLA 1996).

Half-closed wound management was the most commonly used technique in the German-speaking region (67%). This is in line with current teaching at universities in this area (Zurich, Berne and Basel). It can be hypothesized that dentists keep up to date with techniques used at universities, MTM treatment rationales, and with publications that report on the benefits of half-closed wound management in MTM surgery (PAJAROLA & SAILER 1994, ARRIGONI & LAMBRECHT 2004, VOEGELIN ET AL. 2008).

Dressings

Antibiotic dressings

In our survey, most dentists (42.1%) used a terra-cortril drain with semi-closed wound closure.

Various dressings are used in open or semi-closed wound healing. Studies using iodine and Vaseline (petroleum jelly)

impregnated drains found low incidences of AO or postoperative infections (PAJAROLA & SAILER 1994, ARRIGONI & LAMBRECHT 2004, VOEGELIN ET AL. 2008). One study compared eugenol-Vaseline drains and closed wound healing and reported a lower incidence of AO in the drain group (BLOOMER 2000).

Terra-cortril is used as a paste containing tetracycline and cortisone and is applied similarly to iodoform on cotton gauze, which is left in place during the first postoperative days before removal by the dentist. The product is available ready to use in Switzerland. Each gram of the ointment consists of 32.6 mg oxytetracycline hydrochloride, 1.4 mg polymyxin b sulfate and 10 mg hydrocortisone acetate. Polymyxin b sulfate is an antibiotic of the polymyxin group.

Studies on the administration of local antibiotics to the extraction socket, however, have shown inconsistent results. One review concluded that the use of antibiotics placed in fresh extraction sockets was not recommended owing to a lack of consistency of the results of the studies included (ALEXANDER 2000). Studies of the use of tetracycline compound in the extraction socket did not show a statistically significant reduction of AO (SANCHIS ET AL. 2004, AKOTA ET AL. 1998). Other studies reported a decrease of AO with the insertion of antibiotic dressings (RUTLEDGE & MARCOOT 1984, SORENSEN & PREISCH 1987, FRIDRICH & OLSON 1989). In an animal experiment, tetracycline was found to reduce clinical signs of AO. The authors, however, warned of the increasing number of resistant bacterial strains that were isolated from sockets treated with tetracycline rinses (BOSCO ET AL. 2008). Another rare complication associated with tetracycline dressings may be neuritis of the inferior alveolar nerve (ZUNIGA & LEIST 1995).

Cortisone

Cortisone, which is used in terra-cortril dressings, has anti-inflammatory properties. In one study the combination of tetracycline and hydrocortisone was found to lead to a decrease of AO (FRIDRICH & OLSON 1989). However, the use of cortisone as a topical agent in extraction sockets was not recommended because of insufficient supporting evidence (BLUM 2002).

Iodoform-Vaseline

Of the dentists who responded to our survey, 39.8% reported using iodoform-Vaseline drains (IVD) with semi-closed wound closure. Iodoform paste consists of petroleum jelly and 30% iodine. The intra-alveolar use of IVD has shown good results after MTM surgery (PAJAROLA & SAILER 1994, ARRIGONI & LAMBRECHT 2004, VOEGELIN ET AL. 2008). Iodine is an effective antiseptic. Its germicidal spectrum includes all forms of vegetative pathogens, bacteria, viruses, fungi and protozoans and it exhibits low toxicity compared to its germicidal strength (CARDOSO ET AL. 2010).

Three dentists in our survey reported using Alvogyl®, which is an iodine-containing dressing. However, the use of Alvogyl® in fresh extraction sockets is not recommended, because animal studies have shown a retardation of wound healing and marked inflammation (SUMMERS & MATZ 1976).

The use of petroleum-based carriers has raised concerns, since there have been reports of histologically confirmed foreign body reactions caused by petroleum-based intra-alveolar dressings that were left in situ for a prolonged period (ALEMAN NAVAS & MARTINEZ MENDOZA 2010). However, this does not represent a standard case where dressings are removed after the first few postoperative days. Another study described local allergic reactions associated with the use of iodoform wound-dressings

in 1% of patients undergoing ear, nose and throat surgery (COULSON ET AL. 2012).

A further potential complication is myospherulosis (lipoid granuloma). This is described as a reactive and iatrogenic process of petroleum based dressings that penetrate into tissue. Histological examination reveals fatty vacuoles surrounded by macrophages (COULIER ET AL. 2012).

Despite these rare complications, in most clinical studies using intra-alveolar dressings, no allergic reactions were reported (PAJAROLA & SAILER 1994, ARRIGONI & LAMBRECHT 2004, VOEGELIN ET AL. 2008). Nevertheless, when using non-resorbable materials it is important to check the patient after one week for drain removal and assessment of wound healing. Leaving the gauze in might induce late complications such as pain, infection and foreign body reaction (ALEMAN NAVAS & MARTINEZ MENDOZA 2010).

Mouth rinse

In our survey 74.5% of dentists always prescribed chlorhexidine mouth rinse whereas 23% of dentists did not prescribe any mouth rinse. Rinsing with chlorhexidine is known to decrease the oral microbial count as a result of its antibacterial properties (LARSEN 1991). Increased numbers of preoperative and postoperative oral microorganisms are reported to be associated with an increased incidence of AO (MACGREGOR & HART 1970).

In addition, chlorhexidine has a long-lasting antimicrobial activity of up to 24 hours (VEKSLER ET AL. 1990). The preparation is effective through cationic molecular binding to extra-microbial complexes and negatively charged microbial cell walls, leading to cell lysis following changes of the osmotic equilibrium (GREENSTEIN ET AL. 1986).

However, it is important that recommendations on concentration, duration and timing of application are respected. A meta-analysis found that the effect is best when patients start using chlorhexidine preoperatively and continue to use it for one week postoperatively at a concentration of 0.12%. However, no significant reduction of AO was reported following a single preoperative use of chlorhexidine (LARSEN 1991, CASO ET AL. 2005, HEDSTRÖM & SJÖGREN 2007).

Several chlorhexidine-containing products are commercially available. Mouth rinse is widely used in concentrations of 0.1%, 0.12% and 0.2%. Our survey found that chlorhexidine mouth rinse was most often used in a combination of immediate preoperative and postoperative application (43.4%). A concentration of 0.2% was preferred (58.2%).

Chlorhexidine may have side effects such as tooth discoloration, slight alteration of gustatory sensation and, if used for prolonged periods, it can lead to gingival desquamation or delayed wound healing (GAGARI & KABANI 1995). Therefore chlorhexidine should be used for a limited period only.

In our survey, 2.5% of dentists prescribed other mouth rinses such as Listerine®, benzydamine (Bucco-Tantum®), tea tree oil, PVP (Polyvinyl pyrrolidone), hydrogen peroxide and octenidine (Octenidol®). Some studies have indicated a benefit from rinsing with Listerine® in terms of a reduction of plaque and gingivitis but it has not been used in the perioperative management of oral surgery (GORDON ET AL. 1985). Hydrogen peroxide is an effective antiseptic agent due to the release of oxygen molecules and may be used intra-orally (GUSBERTI ET AL. 1988). However, there are no studies reporting its use in MTM surgery, most probably because of the possible risk of emphysema. Therefore, unless patients are allergic to chlorhexidine, we do not recom-

mend other rinsing solutions due to the proven efficacy of chlorhexidine in MTM surgery.

Conclusion

Various techniques are used for wound closure by dentists in Switzerland. German-speaking dentists most often use drains and half-closed wound closure techniques after MTM extractions, whereas closed wound management is most often performed with the concomitant prescription of systemic antibiotics in the French-speaking region.

The use of chlorhexidine mouth rinse and its positive effect on wound healing is known to most Swiss dentists.

Acknowledgements

We would like to thank all members of the Swiss Dental Society SSO for participating in this survey.

Résumé

Introduction

L'extraction chirurgicale des dents de sagesse est l'intervention la plus fréquente dans le cabinet dentaire dans le domaine de la chirurgie orale. L'alvéolite est la complication postopératoire la plus fréquente. Les facteurs à risque sont, entre autres, la position de la dent incluse et la difficulté de l'extraction, l'expertise du chirurgien, l'âge du patient, le fait qu'il soit fumeur, l'hygiène buccale, le sexe et la contraception orale.

Plusieurs manières de fermeture de la plaie et rinçages pour la désinfection de la cavité orale sont discutées dans la littérature, comme la cicatrisation semi-ouverte, ouverte ou fermée. Les matériaux d'obturation de l'alvéole sont résorbables, comme des cônes de collagène ou non résorbables, comme le drain de coton.

Les produits à base de chlorhexidine sont conseillés pour la désinfection de la cavité orale avant et après l'extraction des dents de sagesse. Il existe une variété de produits sur le marché avec des concentrations différentes. Pour obtenir les meilleurs résultats, le mode et la durée d'emploi sont importants.

Matériel et Méthodes

La présente enquête, auprès de dentistes suisses, membres SSO, tenait à recueillir des données sur les soins postopératoires et la prescription d'antibiotiques suivant l'extraction prophylactique de troisièmes molaires mandibulaires.

Un questionnaire en allemand, en français et en italien a été envoyé par courrier à tous les 3288 membres de la SSO. Le questionnaire était composé de 13 questions à choix multiples concernant un cas clinique. Ci-joint une radiographie panoramique montrant une troisième molaire mandibulaire incluse d'une jeune patiente de 17 ans. Les dentistes devaient répondre à des questions concernant l'expérience chirurgicale, la prescription et le dosage d'antibiotiques. En plus, des questions concernant la fermeture de la plaie et l'usage de solutions de rinçage furent posées. Finalement, les dentistes donnèrent des informations personnelles comme âge, date du diplôme et l'université.

Le taux de réponse correspondait à 1795 (55%).

Résultats

Le premier article déjà publié était dédié aux antibiotiques. Dans ce deuxième article, les réponses concernant la fermeture de la plaie et les bains de bouche désinfectants sont représentées.

La plaie semi-fermée (59,1%) et fermée ou primaire (19%) ainsi que ouverte (11,7%) sont le plus souvent pratiquées. La plaie semi-fermée est utilisée plus souvent en Suisse allemande (67%), tandis qu'en Suisse romande la plaie fermée est favorisée (55%).

Les antibiotiques furent ordonnés lors de fermeture primaire de la plaie (38,9%) ($p < 0,005$) suivi par la plaie semi-fermée (33,3%) et ouverte (6,1%).

Pour la plaie semi-fermée, la gaze imbibée de terra-cortril (42%) et de vaseline-iodoforme (40%) est utilisée le plus souvent. Pour la plaie fermée, les dentistes favorisent la cicatrisation sans additifs (60,5%). Plus rarement, la gaze imbibée d'auroreomycine est utilisée (39 dentistes). Encore moins souvent, la gaze imbibée de tétracycline (4) et Chlumski (3) ainsi que le produit Alvogyl® (2) sont utilisés comme obturation de l'alvéole. Un dentiste utilise le laser CO₂ et un autre dentiste le laser soft.

La plupart des dentistes donnent des bains de bouche avec de la chlorhexidine (74,5%). La concentration est le plus souvent de 0,2% CHX (58,2%) suivi par 0,1% (34,2%). Les concentrations inférieures à 0,1% sont seulement prescrites par 4,9% des dentistes.

Le concept de rinçage pré- et postopératoire est favorisé (43,4%).

Très rarement d'autres solutions de rinçage sont utilisées (2,5%). Tebodont® est la réponse de 14 dentistes, Bucco-Tantum® de 7 dentistes, Meridol® et Listerine® de 3 dentistes. Deux dentistes choisissent l'Octenidol® ou l'H₂O₂. Un dentiste prescrit du Kamillosan® ou de la solution saline.

Discussion

En conclusion, pour l'extraction de dents de sagesse, la plaie semi-fermée avec drain et le bain de bouche chlorhexidine sont favorisés par la plupart des dentistes suisses. Cela représente une méthode scientifiquement bien établie avec peu de complications sans l'utilisation d'antibiotiques systémiques.

Cependant, la fermeture de plaie varie fortement selon les régions linguistiques en Suisse.

Zusammenfassung

Einleitung

Weisheitszahnextraktionen zählen zu den häufigsten oralchirurgischen Eingriffen in der zahnärztlichen Praxis. Die häufigste postoperative Komplikation ist die Alveolitis. Zu den Risikofaktoren gehören unter anderem Art der Zahnverlagerung und Schweregrad der Extraktion, Erfahrung des Operateurs, Patientenalter, Rauchen, intraoraler Hygienestatus, Geschlecht und orale Kontrazeptiva.

Es werden aktuell mehrere Arten des Wundverschlusses und verschiedene Mundspülungen in der Literatur diskutiert, nämlich das halboffene oder offene sowie das geschlossene Wundmanagement. Dabei können diverse medikamentöse Drains oder intraalveoläre Einlagen eingebracht werden. Die eingelegten Materialien sind entweder resorbierbar, wie z.B. Kollagenkegel, oder es handelt sich dabei um nicht resorbierbare Drains, welche im postoperativen Verlauf entfernt werden müssen.

Eine Chlorhexidin-Mundspülung wird zum perioperativen Wundmanagement bei Weisheitszahnextraktion empfohlen. Es werden zahlreiche Präparate mit verschiedenen Konzentrationen angeboten. Weiter sind der Zeitpunkt und die Häufigkeit der Anwendung wichtig.

Material und Methoden

Im Rahmen einer Befragung wurden alle Schweizer Zahnärzte der SSO betreffend den Gebrauch von Antibiotika und das Wundmanagement bei der prophylaktischen Entfernung der Weisheitszähne im Unterkiefer angeschrieben. Ein Fragebogen in Deutsch, Französisch oder Italienisch wurde im April 2012 per Post an insgesamt 3288 Zahnärzte versendet. Er beinhaltete 13 Fragen zu einem Patientenfall. Es handelte sich um einen unteren, retinierten Weisheitszahn einer 17-jährigen, gesunden Patientin. Multiple-Choice-Fragen betreffend die Operationserfahrung bei Weisheitszahnentfernungen und die Abgabe von Antibiotika, insbesondere betreffend den Wirkstoff, die Dosis sowie die Dosierung, sollten beantwortet werden. Auch wurde nach dem Wundmanagement gefragt, wie z.B. halboffen oder offen und der Anwendung von Mundspülungen.

Resultate

Im ersten, bereits publizierten Teil dieser Studie wurden die Antworten zum Thema Antibiotikaabgabe bei Weisheitszahnextraktionen ausgewertet. Im zweiten Teil dieser Studie werden nun die Antworten betreffend den Wundverschluss und die Mundspülungen ausgewertet.

Wir konnten die Antworten von 1795 Zahnärzten auswerten, was einer hohen Rücklaufquote von 55% entspricht.

Halboffenes (59,1%) und geschlossenes (19%) sowie offenes (11,7%) Wundmanagement werden am häufigsten angewendet. Der halboffene Wundverschluss wird vor allem in der deutschsprachigen Schweiz (67%) angewendet, wohingegen das geschlossene Wundmanagement in der französischsprachigen Schweiz (55%) vorgezogen wird.

Zahnärzte, welche Antibiotika verordnen, führen eher ein geschlossenes Wundmanagement durch (38,9%) ($p < 0.005$), gefolgt von halboffenem (33,3%) und offenem (6,1%) Wundmanagement.

Beim halboffenen Wundverschluss werden am häufigsten Drainagen mit Terra-Cortril (42%) und Vaseline-Iodoform (40%) eingelegt (Fig. 2 und 3). Beim primären Wundverschluss wird die Heilung ohne Einlage und nur mit dem Blutkoagulum bevorzugt (60,5%).

Weniger häufig werden Aureomycin-Vaseline-Drains (39 Zahnärzte) eingesetzt. Noch seltener werden Tetracyclin-Drains (4) und Chlumsky-Drains (3) sowie Alvogyl® in die Alveolen eingelegt (2). Jeweils ein Zahnarzt benützt den CO₂-Laser oder Softlaser.

Die meisten Zahnärzte verschreiben eine Chlorhexidin-Mundspülung (74,5%) nach Weisheitszahnextraktion. Die Mehrheit der Studienteilnehmer verordnet 0,2% Chlorhexidin (58,2%), gefolgt von 0,1% (34,2%). Tiefere Konzentrationen als 0,1% werden nur von 4,9% verordnet.

Eine Kombination von unmittelbar präoperativem und postoperativem Spülen findet sich am häufigsten unter den Antworten (43,4%).

Selten (2,5%) werden andere Mundspülungen verordnet. Tebodont® wird von 14 Teilnehmern abgegeben. Weitere 7 Teilnehmer geben Bucco-Tantum® ab, 3 Meridol®, 3 Listerine® und 2 Octenidol® bzw. H₂O₂. Weiter verordnet jeweils 1 Teilnehmer Kamillosan® oder NaCl-Spülungen.

Diskussion

Zusammenfassend wird das halboffene Wundmanagement mit Draineinlage sowie Abgabe von Chlorhexidin-Mundspülung für das perioperative Management nach Weisheitszahnentfernung in der Schweiz am häufigsten durchgeführt. Dies stellt ein wissenschaftlich gut dokumentiertes Vorgehen dar mit niedrigen Komplikationsraten, auch ohne den Einsatz von systemischen Antibiotika.

Das angewendete Wundmanagement variiert jedoch stark in den drei Sprachregionen der Schweiz.

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