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# Teeth Damage During General Anesthesia

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Dissertação conducente ao Grau de Mestre em Medicina Dentária (Ciclo Integrado)

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Trabalho realizado sob a Orientação de **Mestre Orquídea Santos**

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## Resumo

**Introdução:** Quando é necessário manuseio avançado da via aérea podem ocorrer lesões dentárias durante a anestesia. Para esta complicação contribuem os seguintes fatores, más condições dentárias e pressão excessiva durante a intubação. Os dentes mais comumente afetados são os incisivos centrais superiores.

**Objetivo:** O objetivo desta revisão é conhecer a incidência de lesões dentárias em adultos submetidos a anestésias que requerem manuseio da via aérea.

**Materiais e Métodos:** A busca foi realizada no MEDLINE (através do Pubmed), ClinicalTrials.gov, Scopus, LILACS (através do Portal Regional da Biblioteca Virtual em Saúde) e SciELO para toda a literatura disponível sobre o assunto até dezembro de 2022. Os critérios de inclusão envolveram artigos que estudaram pacientes com 18 anos de idade ou mais que foram submetidos a anestesia geral que requer manejo das vias aéreas com intubação traqueal ou inserção de máscara laríngea.

**Resultados:** De todos os artigos, 9 relatam a lesão dentária associada ao tipo de manejo das vias aéreas. Apenas 1 artigo não possui lesão dentária

**Discussão:** Este estudo aborda as lesões dentárias relacionadas à intubação traqueal durante a anestesia geral. Embora sejam utilizadas técnicas para preveni-las, essas lesões ainda são comuns. A laringoscopia, principalmente com apoio nos incisivos centrais superiores, pode causar danos aos dentes.

**Conclusão:** É importante que o anestesiológista esteja atento aos traumatismos dentários e que a intubação oro-traqueal ou a colocação da máscara laríngea seja realizada de forma sistemática e rigorosa, sempre considerando a dentição do paciente para escolher a melhor abordagem em cada situação específica.

**Palavras-chave:** ``Oral damage``; ``Dental injury``; ``Laryngoscopy``; ``Anesthesia``;  
``General anesthesia``

## Abstract

**Introduction:** Dental injuries during anesthesia, especially when advanced airway management is required, represent a significant problem. Factors such as poor dental condition and excessive pressure during intubation contribute to dental damage. The maxillary central incisors are commonly affected.

**Objective:** The objective of this review is to know the incidence of dental injuries in adults undergoing anesthesia that requires airway management.

**Materials and Methods:** The search was performed in MEDLINE (through Pubmed), ClinicalTrials.gov, Scopus, LILACS (through the Virtual Health Library Regional Portal) and SciELO for all available literature on the subject up to December 2022. Inclusion criteria involved articles that studied patients aged 18 years or older who underwent general anesthesia requiring airway management with tracheal intubation or insertion of a laryngeal mask airway.

**Results:** Of all the articles, 9 report dental injury associated with the type of airway management. Only 1 article does not have dental injury.

**Discussion:** This study addresses dental injuries related to tracheal intubation during general anesthesia. Although techniques are used to prevent them, these injuries are still common. Laryngoscopy, especially with support on the upper central incisors, can cause damage to the teeth.

**Conclusion:** It is important that the anesthesiologist is aware of dental trauma and that orotracheal intubation or the placement of the laryngeal mask airway is performed systematically and rigorously, always considering the patient's dentition to choose the best approach in each specific situation.

**Keywords:** ``Oral damage``; ``Dental injury``; ``Laryngoscopy``; ``Anesthesia``;

``General anesthesia``

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#### **ABREVIATIONS INDEX**

LMA- Laryngeal mask

SADs – Supraglottic airway devices

## 1. INTRODUCTION

Dental injury is commonly reported in association with anesthesia, particularly when advanced airway management is required.(1–3) Dental trauma or, as a matter of fact, any intra-oral trauma caused as a result of anaesthetic practice is a relevant issue which apart from playing a contributing role to the overall morbidity of a patient can also lead to litigation issues.(2) The overall incidence of dental injury is estimated to be between 0.06% and 12%, but these values can be underestimated. (1)

The incidence of dental damage during orotracheal intubation depends on several factors as poor dental conditions and significant pressure on the dental arch being the most important ones.(3) Also, when a satisfactory view of the glottis is difficult to obtain during laryngoscopy, the patient's maxillary anterior teeth are sometimes used as a fulcrum by the laryngoscope blade.(4) The majority of these occurrences are caused by the application of pressure from the hard metallic blade of the laryngoscope.(1,3,5) There are three major groups of causative factors: unfavorable patient anatomy, the experience and skill of the anesthesiologist who handles the airway, and the design of the laryngoscope blade.(4)

In cases of emergent airway management, the incidence of oral trauma increases to 7%.(4) The most common dental injuries in these cases include enamel fractures, loosened, subluxated teeth, tooth avulsion, crown or root fractures, luxation, and missing teeth. (1–5) The anterior sextant of the maxillary region, more specifically the central maxillary incisors, is the most affected. In fact, the left central incisor is reported to be the tooth with the highest risk of dental injury, due to the direct contact of the laryngoscope blade as well as its use as a fulcrum to position the laryngoscope.(5) However, there are few publications on registration strategies that support the implementation of effective preoperative measures to prevent damage, namely through the laryngoscopy procedures.(5)

Considering the magnitude of the problem and its physical, economic, and legal consequences, it is important to determine the risk factors, frequency, and outcomes of



dental injuries related to anesthesia.(1) Furthermore, raising awareness among anesthesiologists about the significance of this problem is crucial.(1) They should be educated about tooth anatomy, supporting structures, common dental pathologies, and the techniques used in dental rehabilitation to effectively address and prevent dental injuries related to anesthesia.(3,5)

## 2. OBJECTIVES AND HYPOTHESIS

The objective of this review is to know the frequency of dental injuries in adults who underwent anesthesia that required airway management and as a second aim to characterize the type of dental damage that is related to the type of device used to approach the airways.

## 3. MATERIALS AND METHODS

### 3.1. Type of study

The protocol of this systematic review was written following the PRISMA-P (Preferred Reporting. Items for Systematic Review and Meta-Analysis Protocols) guidance.

### 3.2. PICO:

<b>Patient, Population or Problem</b>	Adult patients undergoing general anesthesia and teeth damage
<b>Intervention or exposure</b>	To see how many times he got injured with the air way method
<b>Comparison</b>	Intubation vs Insertion supraglottic device

Outcome	Frequency of oral injury
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*Table 1-PICO*

### 3.3. Research strategy

Search was conducted on MEDLINE (through Pubmed), ClinicalTrials.gov, Scopus, LILACS (through Virtual Health Library Regional Portal), and SciELO for all available literature on the subject until December 2022.

The queries evaluated were: "Types of injuries in our oral health; Risk factors; Types of laryngoscope; Solutions to minimize the problem."

#### 3.3.1 Keywords

"Oral damage"; "Dental Injury"; "Laryngoscopy"; "Anesthesia"; General Anesthesia"

#### 3.3.2 Mesh Terms

[(Dental injury) AND (Laryngoscopy) AND (Anesthesia)] or [(Dental injury) AND (Laryngoscopy) AND (Anesthesia) AND (General Anesthesia)]

#### 3.3.3 Eligibility criteria

Inclusion Criteria: papers that studied dental damage of patients with 18 years of age or older that underwent general anesthesia requiring airway management with traqueal intubation or laryngeal mask insertion, until December 2022.

Exclusion criteria comprised pediatric patients, animal or phantoms studies, ongoing studies, lack of study measures, patients who underwent oral surgical procedures, case reports, review articles and papers that are not in Portuguese or English language.

### **3.3.4 Study selection and data collection**

Firstly, the articles were selected based on the title and abstract according to the eligibility criteria. Then, the complete articles were obtained and read in full by the two authors, and it was decided whether they met the requirements of the eligibility criteria. Uncertainty and disagreement were resolved by a third reviewer. The data extraction from the selected studies was independent and in duplicate to avoid errors and reduce biases.

From each eligible study we collected information about the study (year of publication, study time, country, type of study), on patient baseline demographics (age and sex distribution), cause for airway management (urgent or elective), airway management (tracheal intubation or supraglottic device), pre-operative dental assessment, frequency of dental damage and type of dental injuries.

### **3.4 Risk of bias in included studies**

The quality of studies included in this systematic review was scored by two researchers using the Newcastle Ottawa Scale (NOS) (with a score ranging from 0 to 9 points).<sup>(6)</sup> The NOS is a review tool for evaluating risk of bias in observational studies. The scale consists of four domains of risk of bias assessment; (i) selection bias; (ii) performance bias; (iii) detection bias and (iv) information bias. <sup>(7)</sup>

### 3.5 Synthesis of evidence

Because of the heterogeneity of the included studies no meta-analysis was conducted in the present review. Regarding oral injuries incidences we have used proportions and corresponding 95% confidence intervals (CIs) or the raw data that could be used to calculate the estimate.

## 4. RESULTS

### 4.1. Search strategy

A total of 747 records were identified from databases, 22 duplicates were removed. The remaining 725 articles were submitted to abstract screening and 680 were excluded. The last 45 reports were full text reviewed and after the application of the inclusion and exclusion criteria, 29 studies were selected for final analysis. Of these 29 selected studies, 15 were excluded for not addressing the topic, 2 for having oral surgical procedures and another 2 for addressing studies in pediatric, animal or phantoms, having in the end obtained only 9 articles. (Figure 1)

## 4.2. Flow Chart

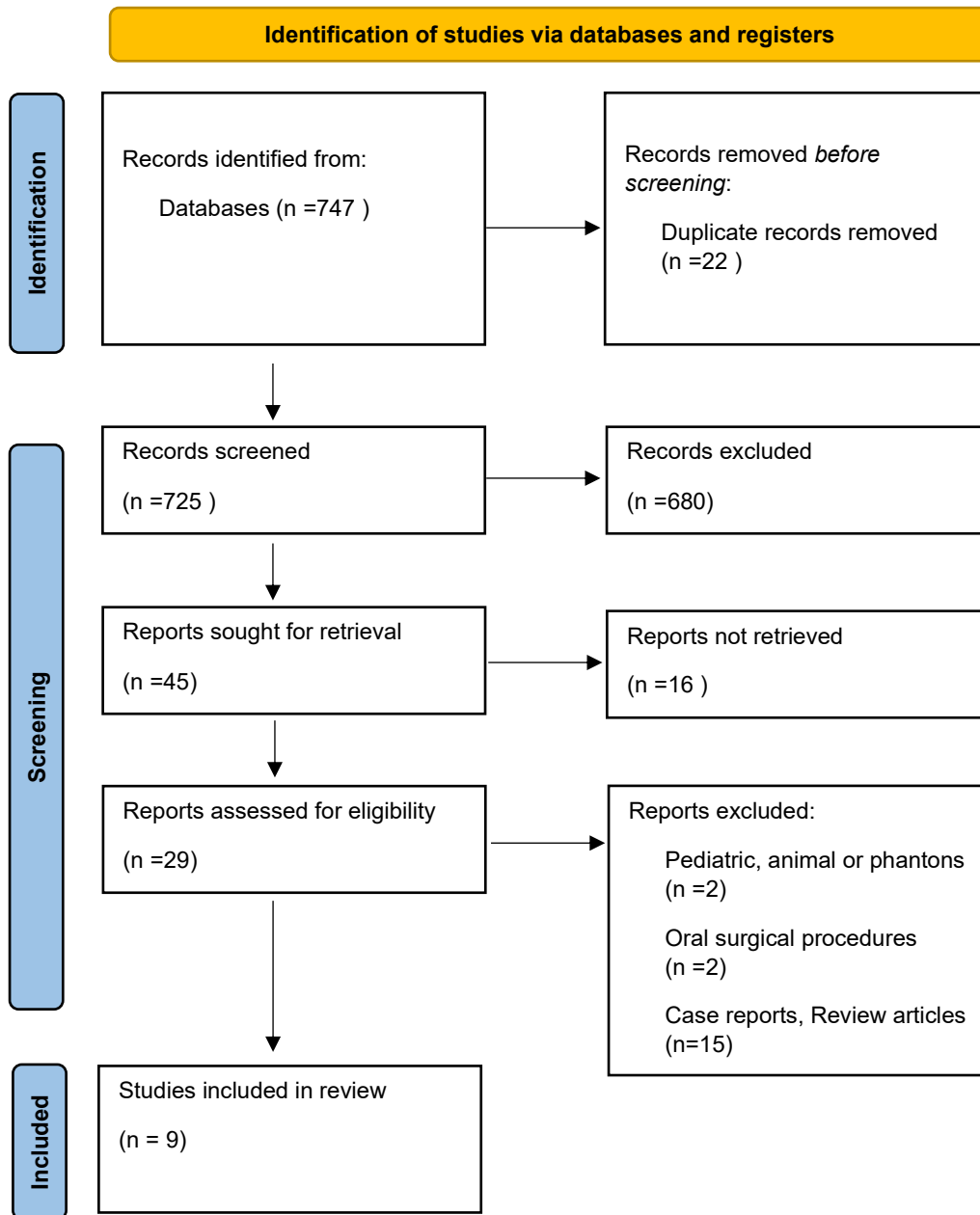


Figure 1 - Prisma Flow chart outlining the selection of studies for review

### 4.3. Table of Results

Author, Year of publication	Title	Aim of the study	Type of airway management	Total Quality score	Types of tooth injury	Most tooth affected	Conclusions
Newland MC <i>et al</i> , 2007 <sup>8</sup>	Dental injury associated with anesthesia: a report of 161,687 anesthetics given over 14 years	Determine the frequency, outcomes, and risk factors for dental injury related to anesthesia.	Mask only; Oral intubation; Nasal LMA; Tracheostomy	*****	Enamel fracture; Subluxation; Luxation; Avulsion; Crown Fracture; Crown and root fracture; Missing tooth/teeth; Other injury	Upper central incisors	Dental injury is one of the most common adverse events reported in association with anesthesia. Risk factors include preexisting poor dentition or reconstructive work and moderately difficult to difficult intubation.(8)
Warner ME <i>et al</i> , 1999 <sup>9</sup>	Perianesthetic dental injuries: frequency, outcomes, and risk factors	Determine the frequency, outcomes and risk factors for perianesthetic dental injuries	Laryngoscopy, tracheal intubation	*****	Crown fractures, Partial dislocations	Upper incisors	Based on these data from a large surgical population at a single training institution, approximately 1:4,500 patients who receive anesthesia services sustain a dental injury that requires repair or extraction. Patients most at risk for perianesthetic dental injury include those with preexisting poor dentition who have

							one or more risk factors for difficult laryngoscopy and tracheal intubation.(9)
<b>Martin Lizabeth D. et al/2011</b> <sup>10</sup>	3,423 Emergency Tracheal Intubations at a University Hospital Airway Outcomes and Complications	Evaluate the incidence of difficult intubation and complication rates and to determine predictors of complications in this setting	Aspiration, Esophageal intubation and Oropharyngeal	*****			During emergent nonoperative intubation, specific clinical situations are associated with an increased risk of airway complication and may provide a starting point for allocation of experienced first responders(10)
<b>Tan Y. et al</b> 2018 <sup>11</sup>	Dental injury in anaesthesia: a tertiary hospital's experience	Evaluate the incidence, risk factors, and local practices in the management of perioperative dental injuries in Singapore	3 types of Supraglottic airway devices (SADs): all videolaryngoscopy was done using the McGrath Mac laryngoscopy	*****	Avulsion and Crown Fractured	Upper and incisors right left	Videolaryngoscopy with the McGrath MAC is associated with an increased likelihood of dental injury. This could be either because videolaryngoscopes were used when increased risk of dental trauma was anticipated, or due to incorrect technique of laryngoscopy. Future studies should be done to establish the causality. The management of dental injuries could be improved with

							development of departmental guidelines(11)
<b>Mourão J. et al 2013</b> <sup>12</sup>	Dental injury after conventional direct laryngoscopy: a prospective observational study	Overcome some of the previous limitations and determine a more accurate incidence of dental damage and risk factors after conventional direct laryngoscopy for tracheal intubation	Laryngoscopy for tracheal intubation	*****	Enamel Fracture, Avulsed	Upper central incisor	Finally, given the high rate of reported injury with conventional laryngoscopy, it would be important to repeat our methodology using other intubation devices such as videolaryngoscopes, to assess if the rate of injury is different(12)
<b>Lee J. et al 2004</b> <sup>13</sup>	The Callander laryngoscope blade modification is associated with a decreased risk of dental contact	Determine whether preoperative examination could predict the risk of contacting the teeth with the laryngoscope and to evaluate the effectiveness of a modified Macintosh blade on reducing dental contact	Laryngoscopy	*****			Airway characteristics correlate with the risk of hitting the upper teeth during laryngoscopy. The modified Macintosh blade reduces the risk of contacting the teeth.(13)
<b>Watanabe S. et al 1994</b> <sup>14</sup>	Determination of the Distance Between the Laryngoscope Blade and the Upper Incisors During Direct Laryngoscopy: Comparisons of a Curved, an Angulated Straight,	Compare the heel-tooth distance when the optimum visibility of the glottis was obtained using the four different types of laryngoscope blade: a Miller, a Wisconsin with a higher heel than a Miller, a Macintosh, and a Belscope blade	Laryngoscopy	*****	Fracture and Subluxation	Central incisor	In conclusion, a low-heelled angulated straight blade, the Belscope blade, provides a significantly greater field of view between the posterior end of the blade and the upper teeth than other types of blades. It



	and Two Straight Blades						may therefore contribute to a reduced likelihood of upper dental injuries during laryngoscopy.(14)
<i>Kuo et al/2015</i> 15	Quality improvement program reduces perioperative dental injuries e A review of 64,718 anesthetic patients	Reduce the incidence of perioperative dental injury.	LMA	*****	Subluxation; Luxation; Avulsion; Crown Fracture; Damage to fixed partial denture, Missing tooth, Other injury	Upper central incisor	Dental injury incidence was significantly reduced and remained at low levels after implementation of the quality improvement program. We suggest the implementation of a standardized dental examination into the preoperative evaluation system adding pathologic teeth fixed or protected devices to minimize dental injury associated with anesthesia(15)

<p>Gaudio R.M. <i>et al</i>/2010<sup>16</sup></p>	<p>Traumatic dental injuries during anaesthesia: part I: clinical evaluation</p>	<p>Investigated the main characteristics of the dental injuries identified by the anaesthesiology incident reporting and constituting a body of malpractice claims.</p>	<p>Tracheal intubation</p>	<p>*****</p>	<p>Avulsions, Damage to crowns and bridgeworks, Luxation, Teeth fractures, Bulk</p>	<p>Upper central incisor</p>	<p>Even though the majority of anaesthesiologists were trained enough in the use of airway devices and aware of the potential damage while using excessive forces, some unexpected difficulties may have led to lesions. It is known that damage to teeth can occur even in the absence of negligence(16)</p>
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Table 2- Results

#### 4.4 Type of Study

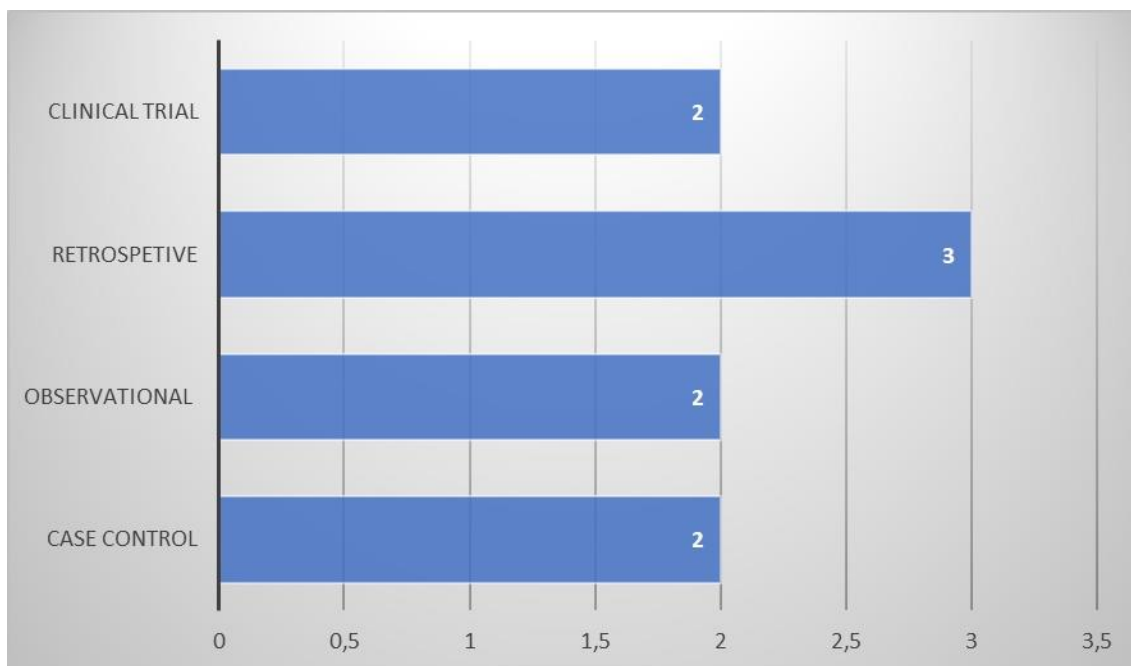


Figura 2- Type of studies

#### 4.5 Frequency of injuries

In all studies it is possible to verify that there are dental injuries during the intubation process. Studies were conducted in Europe, America and Asia.

In general, the frequency of dental injury was almost absent. One exception was a study in Europe that found a prevalence of 25% (95% CI: 21%, 29%). (12)

Therefore, Newland *et al* analyzed 78 dental injuries in 161,687 patients (0,048%; 95% CI: 0,04%, 0,06%) from adverse event database records from 1989 and 2003 in which 86% were discovered by the anesthetist and 14% by the patient.(8) Warner *et al* reported 132 dental injuries in 486791 (0,027%; 95% CI: 0,02%, 0,03%) anesthetic procedures reported by patients 7 days after procedure.(9) Martin *et al* analyzed 6 dental injuries in 3423 patients (0,175%; 95% CI: 0,04%, 0,32%) that made a complain between the years 2001 and 2009. (10) Tan *et al* analyzed 51 dental injuries in 55158 patients (0,092%; 95% CI: 0,07%, 0,12%) of an audit data base from 2011 and 2014 in which 44(86,3%) were discovered in the

operating theatre, 4(7,8%) were discovered in the post-anesthetic care unite and 1(2%) in the ward.(11) Mourão et al reported 134 dental injuries in 536 patients 25% (95% CI: 21%, 29%) that underwent laryngoscopy or in which all injuries were discovered by a health professional between 12 and 36 hours after the anesthesia procedure.(12) Lee *et al*/in their clinical trial did not report any injuries.(13) Watanabe *et al*/sustained 2 dental injuries during 382 laryngoscopies in 98 patients of 2,041% (95% CI: 0,008%, 4,8%). performed by the same senior anesthesiologist, which performs an average incidence of 1/191 of dental injuries VS laryngoscopy.(14) Kuo *et al*/analyzed 76 dental injuries 64718 patients of 0,117% (95% CI: 0,09%, 0,14%). of adverse events data base records from 2010 and 2011.(15) Gaudio *et al*/analyzed 83 dental injuries in 60,000 patients of 0,138%% (95% CI: 0,11%, 0,17%). that made a complain between the years of 2000 and 2008.(16)

#### 4.6. Types of tooth injury

The types of tooth injury were only reported by 6 articles (66,7%).

Newland *et al*, reported 8 types of injuries that affected 78 patients described from dental consultation: 25(32.1%) enamel fracture; 18(23.1%) loosening/subluxation; 3(3.8%) luxation; 7(9%) avulsion; 6(7.7%) Crown fracture; 1(1.3%) crown and root fracture; 8(10.3%) missing tooth/teeth; 17(21.8%) other minor complications. (8) Tan *et al*/only reported that in 3 patients out of 51 who suffered injuries there were 2 cases (66%) tooth avulsion and 1 case (34%) crown fracture diagnosis by the dentistry of the hospital.(11) Mourão *et al* reported 2 types of injuries that affected 86 patients: 82(15%) enamel fracture; 4(0,7%) avulsion by the WHO's classification modified. (12) Watanabe demonstrated 1 patient out of 2 affected patients had a subluxation and another had a crown fracture, then treated by the institutional dentistry.(14) Kuo *et al*/reported 7 types of injuries from 76 patients who suffered the injury, identified by anesthetist, patients or nurses: 8(20%) loosening/subluxation; 2(5%) dislocation; 14(35%) avulsion; 6(15%) coronary fracture; 1(2.5%) missing tooth/tooth; 4(10%) other minor complications; 5(12.5%) fixed partial denture damage.(15) Gaudio *et al*/report 5 types of injuries that 83 patients suffered: 1% enamel fracture; 3,8% dislocation; 50% Avulsion; 14% coronary fracture; 12% crown and root fracture.(16)

#### 4.7. Types of airways management and teeth damage

As seen in Table 1, different forms of airway management were performed, however not all of them affected the teeth. Newland *et al*/reports of the 78 dental injuries, 75 were due to Laryngoscopy; 2 due to facial Masks and 1 due LMA.(8) Warner *et al*/demonstrate that the 132 dental injuries were caused by laryngoscopy.(9) Martin *et al*/demonstrate that the 6 dental injuries were caused by Laryngoscopy.(10) Tan *et al*/reports that from the 51 dental injuries, 40 dental injuries were due to Laryngoscopy, 7 dental injuries were due to SADs, 3 to double lumen tube and 1 dental injury due to Mask. Of those with descriptive data, laryngoscopy was the most common cause of dental injury.(11) Mourão *et al*/demonstrate that the 134 dental injuries were due to Laryngoscopy.(12) Watanabe *et al*/demonstrate that the 2 dental injuries were due to Laryngoscopy.(14) Kuo *et al*/demonstrate that the 42,1% dental injuries were due to LMA and 28,9% was due to Laryngoscopy.(15) Gaudio *et al*/demonstrate that the 83 dental injuries were due to Laryngoscopy.(16)

#### 4.8. Teeth Affected

In general, it is possible to verify in almost all articles that the most affected teeth are the upper central incisors.

Newland *et al*/reports that upper left and right central incisor were the most affected. From the right lateral incisor to the right first premolar moderately affected. Left lateral incisor to left first premolar moderately affected.(8) Warner *et al*/reports that the most teeth affected were the upper central incisors.(9) Tan *et al*/reports that upper right and left incisors were the most affected, although there were also 3 injuries to the lower left central incisor, 1 injury to the right upper canine and right upper premolar, 1 injury to the lower right central incisor and right lower canine and 1 injury on the left lower canine and left premolar.(11) Mourão *et al*/reports 80 injuries to the upper right central incisor, 3 injuries to the upper right lateral incisor, 53 injuries to the upper left central incisor, 11 injuries to the upper left lateral incisor, 4 injuries to the lower left central incisor, 1 injury to the lower left

lateral incisor, 8 injuries to the lower right central incisor, 1 injury to the lower right lateral incisor and 1 injury to the lower right canine.(12) Watanabe *et al*/reports that the most teeth affected were the upper central incisors.(14) Kuo *et al*/reports that were 15 lesions in the left central incisor; 9 injuries to the right central incisor; 3 injuries to the right lateral incisor; 5 injuries to the left lateral incisor; 4 injuries to the lower left central incisor; 2 injuries to the lower left lateral incisor.(15) Gaudio *et al*/reports that in their study 90% the teeth affected were upper incisors. (16)

## 5. DISCUSSION

The outcome was difficulty to obtain because 3 studies were prospective, and 5 studies based on data collected from claims or audits or reports from professionals involved in the patient's treatment.

The incidence of dental damage during airway management depends on several factors a preexisting poor dentition with large decays or restorations, advanced periodontitis, presence of dental prosthesis, shedding deciduous teeth, jaw misalignment, anterior crowding are well-recognized risk factors and difficulty in laryngoscopy, in that cases anesthesiologists are apt to rotate the laryngoscope handle even further posteriorly.(16) This often causes direct contact with the upper teeth, which are then used as a fulcrum for the posterior heel or horizontal flange.(14–16)

In the results, it is possible to verify that Warner *et al*/and Mourão *et al*/are the ones with the highest number of lesions [25% (95% CI: 21%, 29%)], because were prospective studies.(9,12) These 2 studies have the highest number of lesions due to the fact that the analysis of the oral cavity is always perform after anesthesia 7 days and 12 to 36 hours, respectively.(9,12) While the other studies only analyzed the database of patients or anesthesiologists or nurses who reported, there is no certainty whether more injuries occurred or not.

Older studies report that the most frequent injury is enamel fracture, however in our revision it was possible to verify that avulsion is one of the biggest injuries that occurred in oral health. Kuo *et al*/report that in their study avulsion was the most frequent and suggest that this might be explained by the frequent use of direct laryngoscopy in patients with dental mobility. (15)

As reported by several previous studies, the results show that the most affected teeth are the upper central incisors, this is because routine laryngoscopy exerts great forces on

the maxillary teeth, and the prominent flange of the Macintosh blade may contribute.(11) Also most anesthesiologists use the maxillary incisors as a fulcrum, so when there is a bad visibility of supraglottic they are guided by the upper central incisors, causing on the majority of the times injuries.(12–14,16) However, it was possible to verify that the upper lateral incisors, especially the left lateral incisor, and the lower incisors demonstrate a high probability of presenting injury.(12,15) Mourão et al, in comparison with other studies, presented a greater variety of affected teeth, demonstrating that the upper and anterior teeth have a greater risk of presenting lesions, and it is possible to demonstrate that the right side of the oral cavity is the most affected (12).

Watanabe et al and Lee et al studied the distance between the laryngoscope blade and the teeth, verified in each study that a low-heeled blade can allow a better view of the supraglottic between the blade and the upper teeth and can reduce the incidence of dental injury. (13,14)

In the analyzed studies, the tracheal intubation with laryngoscopy was considered a leading cause of dental injuries, particularly when a glottis view was difficult to obtain. (15) In our study is possible to observe that laryngoscopy in most of the studies is the cause of dental injury, although it was possible to verify, in comparison with the analyzed studies, only 3 studies used LMA and in 2 of these 3 studies there was a higher number of injuries associated with LMA compared to laryngoscopy.

As a solution to minimize the dental injury it is suggested a complete oral examination should be done in order to decrease injuries by the anesthesiologist, various types of blades to be used as a rubber laryngoscope would have less impact on the teeth, and could be used as a way to train a trainee anesthesiologist; a *Belscope* blade, as it is more practical and reduces the possibility of direct contact with the upper teeth; a modified low-height flange on Macintosh blade would reduce the frequency of direct contact between the blade and the upper teeth by over 80% and a plastic guard should be used to protect the teeth. (8,12–14,16)



## 6. CONCLUSION

It is demonstrated that airway management stills an issue for dental trauma, however being one of the most frequent anesthetic complications.

Avulsion still continues to be one of the most frequent dental injury during general anesthesia associated with laryngoscopy.

The limitation of this study has to do with the heterogeneity of the methodology of included studies and, it was possible to observe that all studies had similar results regarding the most affected teeth and the type of airway management that caused it.

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