Received: 4 May 2024 | Revised: 24 July 2024 | Accepted: 4 September 2024

DOI: 10.1111/odi.15137

ORAL DISEASES Leading in Oral, Maxillofacial, Head & Neck Medicine WILEY

ORIGINAL ARTICLE

Emergency of oral haemorrhage: Retrospective study over 2 years

M. Pinana | I. Rodriguez-Perron | G. Lescaille | R. Toledo | M. Mondoloni | J. Rochefort

Department of Odontology, Groupe Hospitalier Pitié-Salpêtrière, Assistance Publique Hôpitaux de Paris, University of Paris, Paris, France

Correspondence
M. Pinana, Department of Odontology, Groupe Hospitalier Pitié-Salpêtrière, Assistance Publique Hôpitaux de Paris, University of Paris, Paris, France.
Email: margaux.pinana@aphp.fr

Abstract

Introduction: Oral haemorrhages (OH) represent a relatively rare reason for an emergency consultation, among dental pain, infectious processes and traumas. Various haemorrhagic risk factors are described, particularly those related to a general medical context or local factors. It is common to associate OH with haemorrhagic risk patients. Current studies mainly focus on patients considered at risk, but there is limited data on the characteristics of OH in patients without known haemorrhagic risk.

Method: We conducted a 2-year retrospective study in a dental emergency department to identify OH occurring in patients without known haemorrhagic risk and to study their characteristics.

Results: OH accounted for approximately 2% of the reasons for consultation among all consultations carried out for dental emergencies. Their frequency was similar in the population of patients without hemorrhagic risk and those with a confirmed risk. They mainly occurred in young patients, without medical history. They also led to the diagnosis of an underlying pathology in about 1% of cases.

Conclusion: This study underscores the importance of accurately documenting patients' medical history during preoperative consultations, as well as identifying associated risk factors. It also highlights that OH can be an early sign of a systemic disorder.

KEYWORDS
dental emergency, oral haemorrhage, oral surgery

1 | INTRODUCTION

Oral cavity haemorrhages are a relatively infrequent reason for emergency consultations, following dental pain, infectious processes and trauma (Hammel & Fischel, 2019). They account for between 0.2% and 10.6% of consultations according to studies (Bae et al., 2011; Huang et al., 2022; Rojanaworarit & Limsawan, 2017). These haemorrhages result from a lack of local haemostasis due to the instability of the blood clot and are favoured by local factors (proximity to vascular structures, local inflammation, invasiveness of the procedure or prolonged operative duration) or systemic factors such as congenital coagulation disorders (haemophilia and von Willebrand disease) or acquired conditions (antithrombotic therapy, renal or hepatic insufficiency, malignant hematologic disorders and drug-induced aplasia) (Garispe et al., 2024; Lockhart et al., 2003). Several authors have reported that oral hemorrhages can be one of the first manifestations of underlying systemic diseases, especially malignant hematologic disorders such as acute myeloid leukaemia, which can present with spontaneous bleeding and gingival swelling due to pancytopenia (Ratre et al., 2018) and oral persistent postoperative bleeding can also alert

about undiagnostic hemostasis trouble such as haemophilia or Von Willebrand disease (Fan et al., 2022a).

The incidence of postoperative haemorrhages (POH) is estimated to be between 8.6% and 32.1% in populations with a confirmed haemorrhagic risk, compared to 0.2%–3.3% in low-risk populations (Landart et al., 2022). Current epidemiological studies focus on the proportion of haemorrhages among other reasons for emergency consultations, but they often lack descriptions or specifics regarding their characteristics. Similarly, recommendations primarily target patients considered at haemorrhagic risk, yet there is limited data on the risk factors and characteristics of patients without known haemorrhage risk (Société Française de Chirurgie Orale, 2015).

It is easy to associate a patient at risk of bleeding with oral bleeding. However, in the odontological emergency department of the Pité-Selpêtrière hospital, which has a 24/7 emergency service, we noticed that a number of patients presenting to the emergency department with oral haemorrhage (OH) had no risk factors on medical examination. The objective of our study was to evaluate the proportion of patients without known haemorrhagic risk presenting in the emergency department for oral cavity haemorrhage (OH) and to analyse their characteristics, specifics and diagnostic value for underlying pathologies.

2 | MATERIALS AND METHODS

The study population included any patient who presented to the emergency department between January 1, 2021 and December 31, 2022 for an OH according to the ICD-10 coding (International Classification of Diseases, 10th revision) corresponding to the diagnosis of haemorrhage and documented in the emergency report:

1. R58: OHs.
2. T983: Sequelae of complications of surgical and medical care.
3. Y600: Cut, puncture, perforation or accidental haemorrhage during surgical intervention.
4. Y690: Accident and complication during a medical and surgical procedure.

Patients were then identified during medical history taking regarding the presence of haemorrhagic risk: primary haemostasis disorders, including thrombopathies (anti-platelet agents, renal failure and haemopathy) and peripheral or central thrombocytopenia (bone marrow aplasia, myelodysplasia and leukaemia), as well as coagulation disorders, either congenital (haemophilia and other coagulation factor deficiencies) or acquired (treatment with anti-coagulants and liver failure). All other medical histories were not considered as a haemorrhage risk.

Inclusion criteria were patients without a known medical history of haemorrhagic risk presenting for OH. Patients with confirmed haemorrhagic risk, cessation of bleeding at the time of emergency consultation, incomplete emergency reports and incorrect *ICD*-10 diagnosis were excluded. Note that diagnoses T983, Y600 and Y690 included other reasons for emergency department visits, which were also excluded after reviewing the emergency reports if they did not correspond to OH.

Data extraction was performed by selecting emergency reports during the study period based on the selected CIM-10 diagnoses. Emergency reports meeting inclusion criteria were selected and analysed for data including age, sex, time of arrival, medical history, treatments, characteristics of the OH and management. These data were manually collected, documenting all patient and haemorrhage characteristics, then anonymized in an Excel database.

Descriptive analyses (calculation of frequencies, means and medians) were performed using Excel software. Bivariate analysis was also conducted by comparing data in the population without known haemorrhagic risk to those in the population with confirmed haemorrhagic risk using statistical tests for the following characteristics:

1. Age (Student's *t*-test).
2. Sex (Chi-square test).
3. Spontaneous or induced nature of the OH (Chi-square test).

Our retrospective study was reported with the name "Hémorragies Orales (HO)" and the identification number "20240625170923".

The main objective was to evaluate the proportion of patients without identified haemorrhagic risk presenting in the emergency department for OH.

The secondary objectives were to define:

1. Characteristics of OHs (aetiology, location, history, time between onset of bleeding and emergency consultation).
2. Patient profile (age, sex, medical history, and alcohol-tobacco use).
3. Emergency management.
4. OHs lead to the discovery of an underlying general pathology.
5. OHs among other reasons for emergency department visits.

3 | RESULTS

The dental emergency department of the GHPS welcomed 105,284 patients during the study period, encompassing all reasons for consultation. These reasons were grouped into 7 categories: the three most frequent reasons were infectious processes, followed by pulpal pathologies and dental and maxillofacial traumas (Figure 1). OHs accounted for 2% of consultation reasons ($n = 1144$), ranking as the 5th most common reason. The total number of diagnosed OHs during the study period was 1144. Within this population, the number of cases occurring in patients without known haemorrhagic risk was 586, representing 51%, compared to 556 cases in a population with confirmed haemorrhagic risk, accounting for 49%. All analyzed data were summarized in Tables 1 and 2.

3.1 | Clinical and epidemiological data

On average, OHs occurred in men in 59% of cases ($n = 344$), compared to 41% in women ($n = 242$). In the population with confirmed

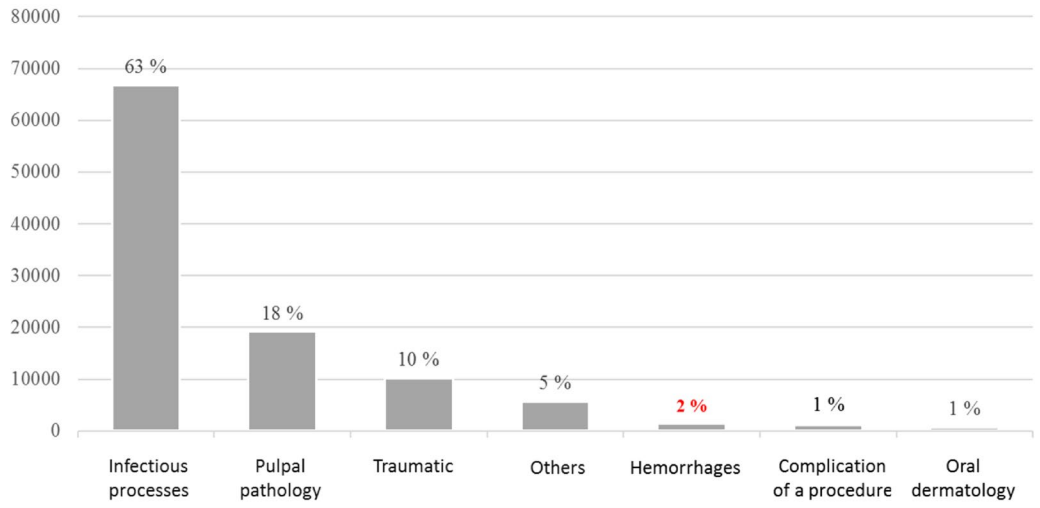

FIGURE 1 Reasons for consultation at the Dental Emergency Department of GHPS from January 1, 2021 to December 31, 2022.

TABLE 1 Clinical data discriminating between patients who have had oral cavity hemorrhage and those with or without known hemorrhagic risk.

DATA	HR +	HR −	*p*-value
Mean age	**71.8** years old	**36.5** years old	**<0.01**
Sex (male/female)	Female = 36% (*n* = 202)	Female = 41% (*n* = 242)	**>0.05**
	Male = 64% (*n* = 356)	Male = 59% (*n* = 344)	
Type of OH	Induced = 86% (*n* = 482)	Induced = 97% (*n* = 567)	**<0.01**
	Spontaneous = 14% (*n* = 76)	Spontaneous = 3% (*n* = 19)	

Note: *p*-value is p < 0.01 (bold).

Abbreviations: (+), positive; (−), negative; HR, haemorrhagic risk; OH, oral haemorrhage; yo, years old.

haemorrhagic risk, the proportion of women was 36% (*n* = 202) versus 64% of men (*n* = 536). There was no significant difference between men and women in the occurrence of OHs in groups with or without known haemorrhagic risk ($p > 0.05$). All medical histories associated or not with a haemorrhagic risk are listed in Table 3.

The mean age of occurrence of OH in patients without identified haemorrhagic risk was 36.5 years, with a minimum age of 4 years and a maximum age of 88 years. These results showed that more than half of the recorded OHs occurred before the age of 30 (*n* = 297). The average age of patients with confirmed haemorrhagic risk consulting for OH was approximately 71.8 years, representing a significant difference in mean age compared to the population without known haemorrhagic risk ($p < 0.01$).

During medical history taking, 19% of patients (*n* = 109) reported one or more medical histories not associated with confirmed haemorrhagic risk, with these patients having an average age of approximately 56 years. 81% (*n* = 477) of patients had no medical history, with an average age of approximately 32 years. Among patients with medical history, 29% had more than one pathology (*n* = 32). Hypertension was the most common medical history (*n* = 36, 6%), followed by diabetes (*n* = 28, 4.7%) and anxiety/depression disorders (*n* = 18, 3%). Eight patients also had both hypertension and diabetes (1.8%).

The study investigated tobacco and alcohol consumption in the studied population. However, these two factors were only reported in 2 cases of haemorrhages. Therefore, this data could not be analysed.

3.2 | Characteristics of haemorrhages

The location of OHs was classified into 3 categories: dental extraction sockets (59%, *n* = 343), gums or oral mucosa (23%, *n* = 165) and exuberant clot (13%, *n* = 78). Among localized oral mucosal haemorrhages, 2 cases of hematomas were included.

The nature of OHs was classified into 2 categories:

1. Provoked haemorrhages: POH or by a local factor (prosthesis, tartar), accounting for 97% of OHs (*n* = 567).
2. Spontaneous haemorrhages, accounting for 3% of OHs (*n* = 19).

In the population with confirmed haemorrhagic risk, 86% of provoked haemorrhages were found (*n* = 482) versus 14% of spontaneous haemorrhages (*n* = 76). There was a significant difference between the two groups ($p < 0.01$).

3.3 | Causes of POH

Simple extractions (45%) were the most common procedure leading to OHs, followed by multiple extractions (14%) and extraction

TABLE 2 Summary of descriptive data analysis in the population without known hemorrhagic risk.

DATA	Frequency (n/%) in the Population Without Known Hemorrhagic Risk			
Mean age	36,5 yo			
Sex	**Male** = 59 % (n=344)		**Female** = 41 % (n=242)	
Medical history	**yes** = 19 %		**NO** = 81 %	
The most common medical history	**HBP** = 6 % (n=28)	**Diabète** = 4,7 % (n=28)	**TAD** = 3 % (n=18)	
Location	**Site of extraction** = 59 % (n=343)	**Gum/mucosa** = 28 % (n=165)	**Exuberant blood clot** = 13 % (n=78)	
Type of OH	**Induced** = 97 % (n=567) Par : **- Simple tooth extraction** = 45 % (n=254) **- Multiple tooth extraction** = 14 % (n=80) **-4 Wisdom teeth** = 13 % (n=76)		**Spontaneous** = 3 % (n=19)	
Delay	**< 24 hours** = 52 % (n=305)	**< 48 hours** = 2,3 % (n=14)	**72 hours or + =** 5,4 % (n=32)	**NR** = 40 % (n=235)
Hours of consultation	**Day** = 21 % (n=125)	**Eveninig** = 43 % (n=250)	**Night** = 36 % (n=211)	
Treatment	**Compression** = 19 % (n=108)	**Local hemostasis protocol** = 80 % (n=471)	**Electrocoagulation** = < 1% (n=1)	**NR** = 1 % (n=6)
Pathology diagnostic	**1,2 % (n=7)** Included **n=4** after post operation haemorrhage Included **n=3** after spontaneous haemorrhage			

Abbreviations: (+), positive; (–), negative; HBP, High blood pressure; HR, haemorrhagic risk; OH, oral haemorrhage; yo, years old.

of all four wisdom teeth in one go (13%). Other procedures causing haemorrhages included implant placement and epithelial-conjunctival grafts (8%), scaling and periodontal surgeries (3%), second-stage implants, prosthesis placement and preimplant surgeries (2%). Among provoked haemorrhages, 9 cases were caused by a local factor. Spontaneous haemorrhages were all localized in the gums, and 3 cases of oral lesions were identified.

Moreover, non-compliance with postoperative instructions is one of the major aetiological factors favouring POH. The study analysed this parameter, but it was only reported in 25 cases of POH: 24 patients reported spitting and 1 reported smoking. This criterion was not reported in other cases of POH.

3.4 | Time of onset of haemorrhage

The majority of patients sought emergency care within 24 h of the onset of bleeding. This timeframe was unknown for 235 cases of haemorrhages. 79% of these OHs occurred between 7:00 p.m. and 7:00 a.m. ($n=461$). Some patients presented multiple times to the emergency department for the same haemorrhage, although it had resolved during previous visits. Thus:

1. 94.3% ($n=553$) of patients received for OH presented only once to the emergency department.
2. 4.5% ($n=26$) presented twice to the emergency department for the same haemorrhage.
3. 1.2% ($n=7$) of patients presented three times to the emergency department for the same haemorrhage. Among patients who came more than once to the emergency department ($n=33$), the most frequent reasons for consultation were as follows: simple extraction (27%), DDS and multiple extractions (27%) and spontaneous OH (12%).

3.5 | Management and follow-up

The management of haemorrhages was categorized into 3 protocols: simple compression of the site using compresses soaked in tranexamic acid; performing a haemostasis protocol with local anaesthesia (curettage, haemostatic sponges, sutures and compression with tranexamic acid) and use of electrocoagulation. The haemostasis protocol was predominantly performed (80%), and simple compression sufficed in 19% of cases. Only one case of haemorrhage required electrocoagulation.

TABLE 3 List of medical histories recognized or not as a haemorrhagic risk in the study.

Medical histories associated with haemorrhagic risk and identified in at least one patient who consulted for oral haemorrhage	Medical histories not associated with a haemorrhagic risk and identified in at least one patient who consulted for oral haemorrhage
• Treatment with anti-platelet agents • Treatment with anti-coagulants • Renal failure • Hemopathy • Bone marrow aplasia (chemotherapies) • Haemophilia • Von Willebrand Disease • Liver failure	• High blood pressure • Diabetes • Anxiety and depressive disorders • Thyroid disorders • Neurologic disorders • History of cancer • Treated cardiopathies (arrythmia) • Cholesterol • Osteoporosis • Pneumopathy • Sarcoidosis • Chronic inflammatory bowel disease • Ankylosing spondylitis

Almost all haemorrhages were resolved. One case could not be managed because the patient experienced vasovagal syncope during the consultation, and a 14-year-old patient was transferred to a paediatric emergency department for respiratory difficulties following a hematoma on the buccal floor. Following emergency department consultation, blood pressure measurement or blood tests could be performed in cases of asthenia, vasovagal syncope and some patients were referred to general emergency departments ($n = 10$).

Following emergency department consultation, 54% received a prescription, 40% received (verbally or in writing) a reminder of POH and 7% were referred to their general practitioner for blood tests to explore any underlying haemostatic disorder.

3.6 | Oral haemorrhages and discovery of underlying pathology

One of the objective was to study the frequency of discovering an underlying undiagnosed pathology following an OH. When patient follow-up was conducted within AP-HP services and medical records were accessible, data on the patient's health status could be analysed. Thus, among patients received in emergency care, the following diagnoses were made:

1. 2 cases of acute myeloid leukaemia in a 24-year-old patient (spontaneous haemorrhage) and a 64-year-old patient (POH).
2. 1 case of haemophilia in a 35-year-old man (POH).
3. 1 case of von Willebrand disease in a 14-year-old patient (POH).
4. 1 case of moderate factor XI deficiency in an 11-year-old patient (POH).
5. 1 case of B-cell lymphoma in an 82-year-old patient (spontaneous haemorrhage).
6. 1 case of decompensated HIV in a 43-year-old female patient (spontaneous haemorrhage).

These cases represented 1.2% of the study's patients. Spontaneous haemorrhages ($n = 19$) led to the diagnosis of 3 pathologies, representing approximately 15% of cases. As for POH, they led to the diagnosis of 4 pathologies, representing approximately 0.7% of POH cases. In the population under 30 years old ($n = 298$), approximately 1% of OH cases resulted in the discovery of an undiagnosed pathology.

4 | DISCUSSION

Oral haemorrhages represent a rare reason for consultation, yet their management in emergency settings requires thoroughness both in resolution and in diagnosing their aetiology. They account for approximately 2% of emergency dental consultations at GHPS, ranking as the 5th reason in our study after infectious processes, dental pain, dental and maxillofacial traumas and other reasons. The objective was to identify OHs occurring in a population of patients without known haemorrhagic risk. Results show that these haemorrhages accounted for more than half of the cases received in emergency care (51%). Data analysis allowed the profiling of these patients and characterization of these haemorrhages. They mainly occurred in a young population (average age: 36.5 years) unlike the known haemorrhagic risk population (71.8 years, $p < 0.01$), with a slightly higher prevalence among men (59%). A meta-analysis from 2023 also found a higher prevalence of men in emergency dental consultations (55.3%) (Musa et al., 2023). Further studies are needed to identify potential causes: behaviours, habits with specific risks for men. Age thus represents a factor to consider in cases of OHs: their frequency and severity increase with age, associated with other pathologies and comorbidity factors (Iwabuchi et al., 2014). Published epidemiological studies on dental emergencies evaluate the average age and sex of patients presenting in emergency settings but do not specifically focus on these data in cases of OHs. Therefore, our results cannot be compared to existing data (Huang et al., 2022).

Patients had no medical history at the time of emergency consultation in 81% of cases. Among those with a medical history (19%), hypertension was the most frequently found pathology (6%), followed by diabetes (4.7%) and anxiety disorders (3%), with an average age of 56 years. The association between isolated hypertension and the incidence of OHs is difficult to estimate, but a patient treated and controlled for hypertension alone is not considered at haemorrhagic risk (Daïmellah et al., 2010). However, if a patient presents with OH and has reported hypertension in their medical history, blood pressure should be measured during the emergency consultation and they should be referred to a specialist if their condition is unstable. The proportion of patients consulting for OH who also have hypertension raises questions about the potential risk this condition poses regarding OHs. Controlled and randomized studies should be implemented to investigate this issue. The incidence of

OHs in diabetic patients is difficult to estimate, but Cocero et al. demonstrated in a cohort of patients on anti-vitamin K that diabetes was the most frequently associated comorbidity factor with POH, accounting for 31% of cases. This could be explained by the delayed formation of blood clots due to impaired platelet function (Cocero et al., 2014). Anxiety and psychological disorders are associated factors identified in our study. Published studies have observed the influence of treatment with selective serotonin reuptake inhibitors and the risk of bleeding after dental procedures. They have been associated with haemorrhagic complications (prolonged bleeding time, bruising, nosebleeds and gingival bleeding) linked to decreased platelets (Napeñas et al., 2011). Tarazona-Álvarez et al. (2019) studied anxiety induced by the extraction of third molars and the exacerbation of bleeding by measuring hemodynamic constants. They concluded that women were more anxious than men ($p < 0.001$). However, they were unable to demonstrate significant results regarding hemodynamic changes during the procedure and the increased risk of haemorrhage. Anxiety related to dental care is also significantly associated with increased gingival bleeding, linked to patient neglect of oral hygiene (Bell et al., 2012). Anxiety and depressive disorders (ADD) are therefore not a confirmed haemorrhagic risk factor, but perioperative and postoperative management is essential: stress reduction and reassuring the patient. Alcohol and tobacco intoxication was a factor that was very rarely documented in our study. The role of tobacco in periodontal disease is widely studied in the literature. It has a vasoconstrictive effect and delays healing, but no study has analysed its role in the occurrence of OH (Newbrun, 1996; Apatzidou, 2022). Excessive alcohol consumption ultimately leads to damage to liver cells (fatty liver, hepatitis or cirrhosis) resulting in disturbances in liver metabolism, and thus, coagulation mechanisms. There are no studies on the frequency of OH occurrence based on alcohol consumption, but this is a parameter to consider during medical history taking. All of these different comorbidity factors and their associations are therefore essential to consider before any intervention. They must be identified, and local haemostasis measures can be used to limit the risk of OH occurrence.

Among the local etiologies of POH, they were mainly moderate to high-risk haemorrhagic procedures due to their invasiveness (multiple extractions and nearby vascular structures). On the other hand, we can assume that one of the other causes of these OHs was non-compliance with postoperative instructions (POI). This criterion was difficult to assess because it was only documented in 25 cases. It was difficult to determine if patients had received and understood the instructions after their intervention. The study showed that 40% of patients received (verbally or in writing) a reminder of these POIs, but this rate is probably higher in cases where the information was not transcribed. Prevention of haemorrhagic risk and delivery of POI may be more neglected in the general population compared to at-risk patients (preoperative hemostasis assessment and hemostasis protocol), who are more cautious due to their knowledge of their hemorrhagic risk. Similarly, the extraction of third molars, an invasive procedure due to the proximity of vascular structures, is mainly performed in young patients, which could explain the high frequency of POH in this population (Garispe et al., 2024).

Furthermore, OHs may be indicative of an underlying undiagnosed pathology or coagulation disorder. A small number of cases (1.2%, $n = 7$) led to the discovery of a pathology, with an average age of 27 years. The literature mainly reports case reports on the incidental discovery of pathology following an oral cavity haemorrhage: acute myeloid leukaemia, moderate haemophilia and von Willebrand disease (Bhambal et al., 2021; Fan et al., 2022b). It is difficult to estimate the prevalence of patients with a coagulation disorder or another pathology, but OHs can be the first warning sign for their diagnosis. While the proportion of affected patients remains low, some of these pathologies can have poor prognoses and require urgent management. Patients with severe deficiencies are generally diagnosed during childhood. The problem arises for those with mild to moderate deficiencies, where bleeding only occurs postoperatively or in the event of trauma (Janvier, 1998). The French Society of Anaesthesia and Intensive Care and the NICE (National Institute for Health and Care Excellence) do not recommend systematic exploration of haemostasis, due to the low prevalence of these disorders in the general population regardless of the patient's age. However, it is recommended to perform one in case of abnormal bleeding, to search for a coagulation disorder (thrombocytopenia and coagulation factor deficiencies) (Fan et al., 2022a; Molliex et al., 2012). Prevention of OHs begins with preoperative consultation to search for personal or family history of bleeding or suggestive clinical signs (gingival bleeding and petechiae). All data must be compared with the clinical examination: oral hygiene, the presence of infectious foci and invasiveness of the procedure. The implementation of a standardized medical questionnaire in oral surgery is also discussed. The HEMSTOP score (Hematoma, haemorrhage, Menorrhagia, Surgery, Tooth extraction, Obstetrics, Parents) seems most suitable with simple use, good sensitivity (0.89) and specificity (0.98), thus allowing identification of possible haemorrhagic risk in patients without known history (Bonhomme et al., 2016).

Finally, the study had certain limitations. The total number of OHs recorded was likely underestimated because they may have been associated with incorrect ICD-10 diagnosis coding, as were bleeding associated with trauma. The monocentric aspect of the study also leads to a selection bias of patients who may have a specific profile and represent a recruitment bias. Among the included emergency reports, some data influencing the risk of OH were missing compliance with POI, alcohol and tobacco intoxication and precise numbers of extracted teeth. It is also likely that some patients omitted to disclose their pathologies or treatments, or that the examiner forgot to ask the question. It is therefore possible that among the number of OHs found in the study population, there are included patients at haemorrhagic risk, which would modify the results. The study could not analyse the severity of the recorded haemorrhages (oozing, spurting or seepage bleeding). The risk of POH depends on the invasiveness of the procedure, the presence of an initial infectious focus, but also on the technique used, which is practitioner dependent. We could not collect data on the duration of the intervention, local conditions or the invasiveness of the gesture leading

to the POH because they were not systematically documented. Patient management may differ depending on the time of consultation. In the evening and at night, staff numbers are reduced. Fatigue and stress from the high patient flow can affect the management of OHs and their descriptions in the CRU. Similarly, the seniority and experience among different practitioners can influence patient management. Finally, one of the main limitations of the study was the follow-up of haemorrhages and the estimation of the frequency of diagnosis of underlying pathology. It is probably underestimated because patients were mainly referred back to their general practitioner for haemostasis exploration. It would have been preferable for postemergency follow-up to be established within the service itself to estimate this frequency more accurately.

5 | CONCLUSION

Oral haemorrhages represent a relatively uncommon reason for an emergency consultation, but their management and follow-up are important considerations. It is common to associate OHs with haemorrhagic risk patients; however, the scientific literature reports little to no data regarding their occurrence and characteristics in the population without known haemorrhagic risk. The objective of the study was to determine their proportion and establish a profile of these patients and haemorrhages. It showed that the frequency of OH in the population without known haemorrhagic risk was similar to that in the population with confirmed haemorrhagic risk. In this population with no haemorrhage risk factors identified, OH generally occurred in young patients without any other associated medical history. In rare cases, the recorded OH led to the diagnosis of an underlying pathology. The study allows for the characterization of these haemorrhages occurring in a population without haemorrhagic risk, which has never been done on such a large scale in the literature to date. Further studies are necessary to specify the profile and characteristics of these haemorrhages, particularly by establishing postemergency follow-up, thereby allowing for a more precise estimation of the frequency of diagnosis of pathology or a coagulation disorder following an OH.

AUTHOR CONTRIBUTIONS

M. Pinana: Conceptualization; investigation; formal analysis; writing – original draft. **I. Rodriguez-Perron:** Validation; supervision. **G. Lescaille:** Validation; supervision. **R. Toledo:** Validation. **M. Mondoloni:** Validation. **J. Rochefort:** Conceptualization; validation; project administration; supervision; writing – review and editing.

ACKNOWLEDGEMENTS

We would like to thank Professor Loredana RadoÏ for her contribution with the statistical analyses.

CONFLICT OF INTEREST STATEMENT

All authors have no conflict of interest to disclose.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

ORCID

M. Pinana https://orcid.org/0000-0001-7387-3134
G. Lescaille https://orcid.org/0000-0002-0590-635X
J. Rochefort https://orcid.org/0000-0001-5286-4562

REFERENCES

Apatzidou, D. A. (2022). The role of cigarette smoking in periodontal disease and treatment outcomes of dental implant therapy. *Periodontology 2000*, *90*(1), 45–61.

Bae, J. H., Kim, Y. K., & Choi, Y. H. (2011). Clinical characteristics of dental emergencies and prevalence of dental trauma at a university hospital emergency center in Korea. *Dental Traumatology*, *27*(5), 374–378.

Bell, R. A., Arcury, T. A., Anderson, A. M., Chen, H., Savoca, M. R., Gilbert, G. H., & Quandt, S. A. (2012). Dental anxiety and oral health outcomes among rural older adults. *Journal of Public Health Dentistry*, *72*(1), 53–59.

Bhambal, A. M., Shrivastava, H., Naik, S. P., Nair, P., & Saawarn, N. (2021). Oral manifestations of systemic leukemiafirst sign of presentation. *Journal of Indian Society of Periodontology*, *25*(4), 347–349.

Bonhomme, F., Boehlen, F., Clergue, F., & de Moerloose, P. (2016). Preoperative hemostatic assessment: A new and simple bleeding questionnaire. *Canadian journal of anaesthesia = Journal canadien d'anesthesie*, *63*(9), 1007–1015.

Cocero, N., Mozzati, M., Ambrogio, M., Bisi, M., Morello, M., & Bergamasco, L. (2014). Bleeding rate during oral surgery of oral anticoagulant therapy patients with associated systemic pathologic entities: A prospective study of more than 500 extractions. *Journal of Oral and Maxillofacial Surgery*, *72*(5), 858–867.

Daïmellah, F., Issad, M. S., Lehachi, S., Bennoui, Z., Khelil, S., Boukaïs, H., Zerrouki, W., Berkane, M., Hannoun, D., & Abrouk, S. (2010). Facteurs de risque hémorragique chez les patients sous antivitamine K en chirurgie buccale. *Médecine Buccale Chir Buccale*, *16*(4), 209–215.

Fan, G., Shen, Y., Cai, Y., Zhao, J. H., & Wu, Y. (2022a). Uncontrollable bleeding after tooth extraction from asymptomatic mild hemophilia patients: Two case reports. *BMC Oral Health*, *22*(1), 69.

Fan, G., Shen, Y., Cai, Y., Zhao, J. H., & Wu, Y. (2022b). Uncontrollable bleeding after tooth extraction from asymptomatic mild hemophilia patients: Two case reports. *BMC Oral Health*, *22*(1), 69.

Garispe, A., Sorensen, C., & Sorensen, J. R. (2024). *Dental emmergencies. 2022 Dec 7. In: StatPrearls*. StatPearls Publishing.

Hammel, J. M., & Fischel, J. (2019). Dental Emergencies. *Emergency Medicine Clinics of North America*, *37*(1), 81–93.

Huang, C. L., Yeh, I. J., Lin, Y. C., Chiu, C. F., & Du, J. K. (2022). Analysis of adult dental emergencies at a medical center in southern Taiwan. *Journal of dental sciences*, *17*(3), 1314–1320.

Iwabuchi, H., Imai, Y., Asanami, S., Shirakawa, M., Yamane, G. Y., Ogiuchi, H., Kurashina, K., Miyata, M., Nakao, H., & Imai, H. (2014). Evaluation of postextraction bleeding incidence to compare patients receiving and not receiving warfarin therapy: A cross-sectional, multicentre, observational study. *BMJ Open*, *4*(12), e005777.

Janvier, G. (1998). Évaluation préopératoire du risque hémorragique. *Annales Françaises d'Anesthèsie et de Rèanimation*, *17*(Suppl 1), 2s–5s.

Landart, C., Barbay, V., Chamouni, P., & Trost, O. (2022). Management of patients with inherited bleeding disorders in oral surgery: A 13-year experience. *Journal of stomatology, oral and maxillofacial surgery*, *123*(5), e405–e410.

Lockhart, P. B., Gibson, J., Pond, S. H., & Leitch, J. (2003). Dental management considerations for the patient with an acquired coagulopathy. Part 1: Coagulopathies from systemic disease. *British Dental Journal*, *195*(8), 439–445.

Molliex, S., Pierre, S., Bléry, C., Marret, E., & Beloeil, H. (2012). Examens préinterventionnels systématiques. *Annales Françaises d'Anesthèsie et de Rèanimation*, *31*(9), 752–763.

Musa, A. A. R., Sethi, S., Poirier, B. F., Oliver, K. J., & Jensen, E. D. (2023). Non-traumatic emergency department dental visits among patients 0-25 years of age: A systematic review and meta-analysis. *International Journal of Paediatric Dentistry*, *33*(5), 457–467.

Napeñas, J. J., Hong, C. H. L., Kempter, E., Brennan, M. T., Furney, S. L., & Lockhart, P. B. (2011). Selective serotonin reuptake inhibitors and oral bleeding complications after invasive dental treatment. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontics*, *112*(4), 463–467.

Newbrun, E. (1996). Indices to measure gingival bleeding. *Journal of Periodontology*, *67*(6), 555–561.

Ratre, M. S., Gulati, R., Khetarpal, S., & Parihar, A. (2018). Regular oral screening and vigilance: Can it be a potential lifesaver? *Journal of Indian Society of Periodontology*, *22*(2), 171–173.

Rojanaworarit, C., & Limsawan, S. (2017). Risk of hemorrhage attributed to underlying chronic diseases and uninterrupted aspirin therapy of patients undergoing minor oral surgical procedures: A retrospective cohort study. *Journal of preventive medicine and public health = Yebang Uihakhoe chi*, *50*(3), 165–176.

Société française de Chirurgie Orale. (2015). Gestion péri-opératoire des patients traités par antithrombotiques en chirurgie orale. Disponible sur: https://www.societechirorale.com/documents/Recommandations/recommandations_festion_p eri_operatoire_2015_court.pdf

Tarazona-Álvarez, P., Pellicer-Chover, H., Tarazona-Álvarez, B., Peñarrocha-Oltra, D., & Peñarrocha-Diago, M. (2019). Hemodynamic variations and anxiety during the surgical extraction of impacted lower third molars. *Journal of Clinical and Experimental Dentistry*, *11*(1), e27–e32.

How to cite this article: Pinana, M., Rodriguez-Perron, I., Lescaille, G., Toledo, R., Mondoloni, M., & Rochefort, J. (2025). Emergency of oral haemorrhage: Retrospective study over 2 years. *Oral Diseases*, *31*, 648–655. https://doi.org/10.1111/odi.15137