

Original Research Article

Epidemiological data and relevance of care provided in dental emergency service of a private hospital

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Abstract

Introduction and Objective: The aims of this study were to determine the etiology and prevalence of dental emergency visits in a private hospital in the period from July 2009 to July 2011 and the importance of this type of service in private hospitals. **Material and methods:** During the study period, we analyzed 795 charts from patients seeking emergency services. The emergencies were classified as trauma, odontalgia, prosthesis, periodontal diseases, and traumatic factors. **Results:** Women and men accounted for 61% and 39% of cases, respectively, and the most prevalent age group was individuals aged 20 to 49 years. The predominant types of dental emergencies observed were odontalgia (52.58%) and dental trauma (22.64%). Pulpitis was the most common pathology (67% of cases) and the most frequent type of trauma was enamel and dentin fracture (54% of cases). **Conclusion:** A high demand for dental emergency care exists in hospital settings. Most people seek emergency dental services for emergencies related to lack of prevention and dental traumas.

Introduction

Dental emergency services comprise the care of patients with oral problems such as dental trauma, which includes avulsion and coronary fractures with or without exposure of the pulp tissue, odontalgia, e.g., acute abscesses and other problems such as impairment of the upper airways, oral mucosa lacerations, infections, and bleeding [1, 8-14]. The most common procedures performed in this type of health service are related to dental caries and their sequels. Arbab-Chirani *et al.* [3] determined that the most common causes of hospital treatment are, in descending order, infectious diseases, dental trauma, and inflammatory processes. Thus, the main emergency interventions are related to the clinical specialty of endodontics, conservative dentistry, and multidisciplinary treatments in the case of dental trauma.

Dental trauma is still considered a public health problem worldwide because of its high prevalence and impact. The increase in violence, traffic accidents, and sports practice directly contribute to the high number of emergencies, especially in a hospital environment [2, 7-13].

Although dentistry has increasingly progressed in the prevention of oral diseases, dental problems are still a reality in certain sectors of the population in Brazil and worldwide. Factors such as lack of information, low income, and neglect of oral health are commonly encountered obstacles, causing a large part of the population to seek dental care only when pain is present and the patient requires immediate resolution to his/her problem [17].

Localized health problems such as inflammation of the pulp or infection of the periapical tissues can trigger diseases such as Ludwig's Angina if left untreated, consequently leading to hospital admission. Thus, it is essential to expand resources and to establish dental emergency units in hospital settings [15]. The access to emergency dental services in a hospital or in dental emergency specialized clinics reduces the use of medical services. In these cases, dental problems are treated with greater resolution because trained and qualified professionals perform the medical care practices [16].

Thus, the aim of this study was to evaluate emergency dental consultations at Vitória Hospital - Curitiba/PR from July 2009 and July 2011 to determine their prevalence and etiologies and the importance of this type of service within the hospital.

Methods

This study was approved by the ethics committee of Positivo University, Curitiba/Paraná, protocol number 154/2011.

For this study, we analyzed 795 records of emergency dental services of the Vitória Hospital - Curitiba/PR for patients who sought care between July 2009 and July 2011.

Patients are screened and referred to medical or dental specialties in the emergency department of the studied hospital. Pain or compromised teeth and/or lips are referred directly to the emergency dental service. Cases involving the face or limbs are referred to the medical emergencies service, even if the teeth are compromised. For this study, we investigated only the records of the emergency dental service.

The charts were analyzed by single professional and the following data were tabulated: gender, age, and type of emergency. The emergencies were classified according to the internal protocol of the hospital as follows: trauma, odontalgia, dental prosthesis, periodontal diseases, and traumatic factors.

Emergencies characterized as trauma were subdivided into avulsion, intrusion, extrusion, lateral luxation, subluxation, concussion, dental fractures, and undisclosed trauma. Dental fractures were subdivided into dental enamel fracture, enamel and dentin fractures, enamel dentin and pulp fractures, crown-root fracture, and restoration fracture. The classification of odontalgia encompassed pulpitis and abscesses of endodontic origin.

The classification of dental prosthesis involved cementing, relining or preparation of temporary crowns, dental bonding, or structures for removable dentures.

Periodontal diseases included pain of a periodontal origin such as gingivitis, periodontitis, excessive mobility or extensive destruction, furcation defect, sub-gingival caries, and pericoronitis.

The classification of traumatic factors included the presence of foreign bodies and orthodontic braces, for example, removal of sutures, metal, wood, plastic, toothpicks, and orthodontic wires. Moreover, emergency treatments of lesions such as ulcers, blisters, spots or plaques, burns, and cuts in the lips and/or mucous membranes were also considered.

After reviewing the medical records, we performed a descriptive statistical analysis based on real numbers and percentages. The data were tabulated and the frequencies were calculated using Excel 2007 (Microsoft®).

Results

Women sought emergency services more often than men did (61% and 39%, respectively). The majority of patients were aged between 20 and 49 years (figure 1).

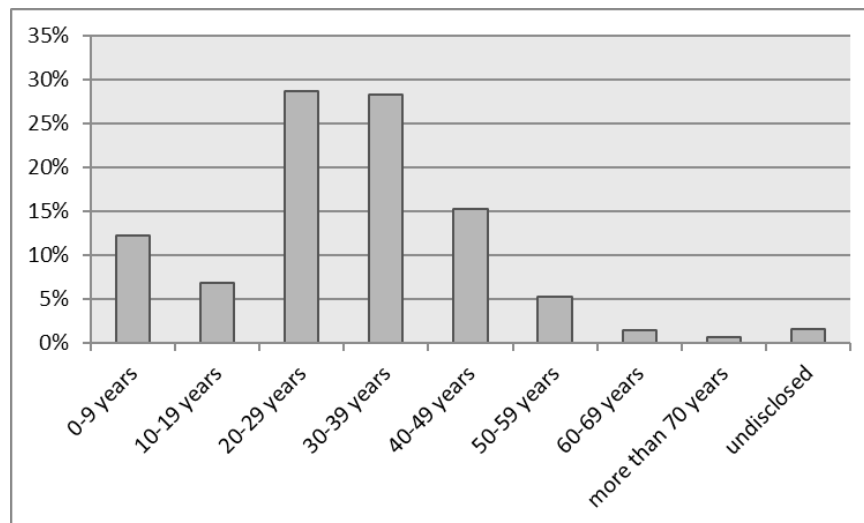


Figure 1 - Distribution of emergency care according to age group

The most frequently observed type of emergency was odontalgia (53% of visits), followed by dental trauma and periodontal diseases (23% and 14% of the cases, respectively) (table I). Regarding the emergencies classified as odontalgia, 67% were pulpitis and 33% were abscesses.

Table I - Distribution of types of emergencies treated at the hospital between July 2009 and July 2011

Type of emergency	N	%
Dental trauma	182	23%
Odontalgia	420	53%
Prosthesis	53	7%
Periodontal diseases	110	14%
Presence of foreign body or traumatic factor	30	4%
Total	795	100%

Prostheses and traumatic factors were also observed, but at a lower percentage of the cases (7% and 4%, respectively). Among the types of trauma, the most common was fracture of enamel and dentin (54% of cases); followed by fractures of only the enamel and undisclosed trauma (13% and 12%, respectively) (figure 2). The evaluation of the age group of the patients diagnosed with dental trauma revealed that 33% of cases were aged between 30 and 39 years, followed by the age groups 0-9 years (22%) and 20-29 years (21%) (figure 3). Regarding the association between the type of trauma and gender, the data showed that women represented 67% of cases with fracture of the enamel and dentin, while men represented only 33% of these cases (figure 4).

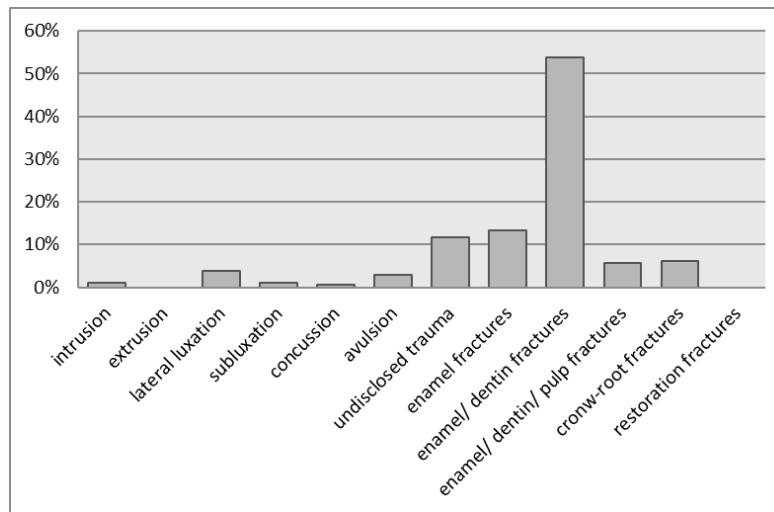


Figure 2 - Distribution of types of dental trauma

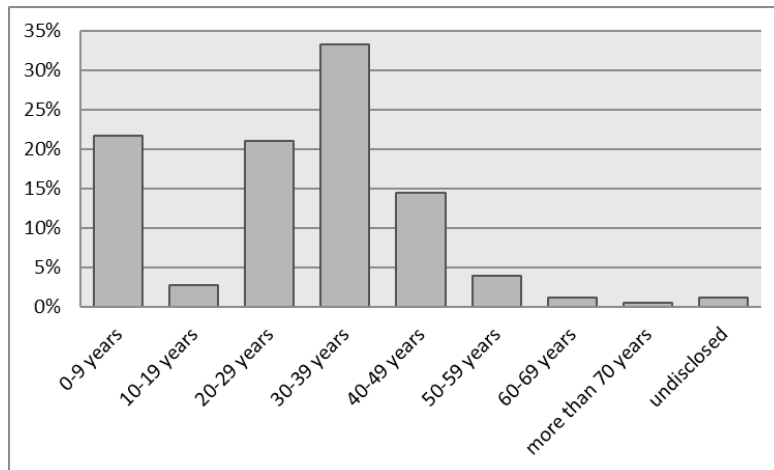


Figure 3 - Distribution of age groups in patients who experienced dental trauma

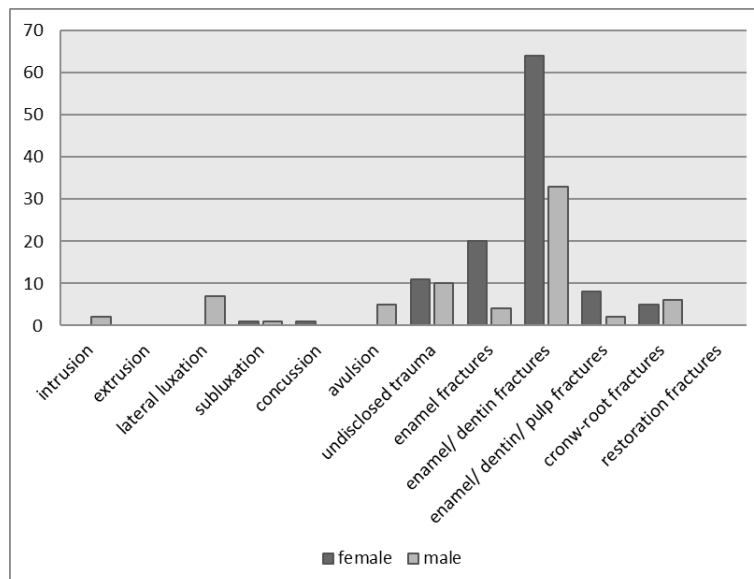


Figure 4 - Relationship between types of trauma and gender

Discussion

Projects and campaigns related to the prevention of oral diseases are currently being developed in Brazil and worldwide. Information and easy access to quality dental services are available. Although these services are free in some countries, part of the population still seeks care only when a problem is already present and/or at an advanced stage.

This reality was observed in the present study because the most prevalent type of emergency was odontalgia, which is related to primary oral problems such as dental caries and its consequences. A study by Arbab-Chirani *et al.* [3] showed that pain due to infectious processes such as caries was the predominant reason people sought emergency care.

In this study, the prevalence of pain-related emergencies caused by infectious processes was followed by dental trauma. Similarly, the study by Sakai *et al.* [17] showed that dental trauma was the second most common reason for seeking emergency dental care at the hospital level.

A study similar to ours assessed different types of dental emergencies in hospitals and noted that dental trauma was the most common reason for seeking dental emergency services, followed by dental infection, oral bleeding, temporomandibular disorders, prosthesis failure, and problems with dentures and orthodontic braces [5].

The prevalence of dental trauma may have been more significant than this study suggests because the professionals who provide emergency care lack knowledge regarding differential diagnoses of types of dental trauma. This was evidenced by the large number of records that did not provide detailed information and classified these cases as undisclosed trauma.

With respect to dental trauma, another fact that must be analyzed is the conduct and hospital protocol of the institution under evaluation. Trivedy *et al.* [20] stated that dentistry is a relatively new service in the hospital environment compared to medical care, thus making the relationship between doctors and dentists difficult. This fact was confirmed in the institution examined in this study because patients who had injuries or abrasions to areas of the body such as the skin, lips, or arms and legs were primarily directed to medical care and only received dental care subsequently. Since most cases of dental trauma also include some type of external injury, consultation is restricted to the medical sector only. Thus, teeth compromised by trauma may often go undiagnosed and the patient is not referred for appropriate treatment and preservation.

According to Quiñonez *et al.* [16], access to specific dental service reduces the use of hospital services for dental problems. Furthermore, physicians do not always have the specific knowledge to correctly diagnose and treat dentofacial emergencies [20].

Austin *et al.* [4, 6] reported that the high demand for emergency dental care in a hospital is due to the reduced schedules of dental offices. Moreover, informal information networks such as friends and family are an important source of information for seeking dental care in hospitals.

Patients often seek care in a hospital setting only for immediate resolution, and they do not continue the treatment or monitor the dental problem. This is confirmed by the large number of patients who seek care for a problem that was treated previously. Thus, some patients were seen and referred for further treatment, but returned with the same problem due to the large number of dressing changes required for endodontic cases of pulpitis and abscesses. However, only the first visit was considered for this study.

When evaluating the age of the patients who sought emergency care services, we noted a prevalence of young adults aged 20-29 years. In these cases, the most common types of emergency were caries and pulp infections. The prevalence of this age group with these types of emergencies is presumably due to the lack of basic knowledge of oral health in young adults. In contrast, when compared with studies in which dental trauma is the prevalent diagnosis, the mean age of the cases is lower than 18 years [7, 12-9].

In this study, an evaluation of the relationship between trauma and age revealed that the highest prevalence was in the 30-39-year age group (33%), followed by children aged 0-9 years (22%). The large number of children and adolescents who practice sports or some other type of school activity or the lack of coordination and dexterity at a younger age may explain the high prevalence among children. Violence and accidents were the main factors involved in the 30-39-year age group [13, 12-18].

Cases of dental trauma, which were classified as fracture of enamel and dentin, were prevalent in women with an average age of 30 years. This result differs from most studies that assess trauma, which report that this type of dental trauma is most frequent in male school-age children [13, 12-18].

Results similar to those observed in this study can be found in studies in which the cause of dental trauma is domestic violence [11-21]. Garbin *et al.* [10] and Stevenson *et al.* [19] reported that fracture is the most prevalent type of trauma in women 30-40 years of age (59% of cases), and physical aggression is the main cause. The latter study was conducted

over a period of 3 years and showed that women between 20 and 39 years of age comprised 90% of the victims of domestic violence and robbery. The main factors associated with this reality are female physical frailty and alcohol consumption by the women's partners. Although we did not find a correlation between the data of this study and domestic violence, it is estimated that 2.5 million women are victims of physical aggression worldwide [10, 21]. According to Gerber *et al.* [11] domestic and interpersonal violence, such as robberies, are still poorly studied topics. However, women are clearly the most common victims and dental trauma is associated with violence. The dentist is often the first to evaluate the victims, and thus has the obligation to recognize the signs and indications of violence. Women may omit the real cause of the trauma because the abuser is the woman's partner in most cases, hindering or preventing a record of the cause of trauma [21].

Conclusion

Based on the methodology used and the results obtained, we conclude that:

- Dental emergency consultations in hospital environments are extremely important and a demand exists for these services.
- The pain resulting from dental pulp problems and dental trauma were the most common reasons that people sought emergency dental care in a hospital setting.
- Awareness of the main causes and the prevalence of these types of emergencies are important for developing a policy of resolute hospital dental care, in which immediate relief of pain or discomfort and a correct referral provides an effective treatment.

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