ORIGINAL ARTICLE

Predictive factors for severe epistaxis in a tertiary center of Tunisia

Facteurs prédictifs de gravité de l'épistaxis en Tunisie

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Abstract

Introduction: Epistaxis is a prevalent clinical condition that can be associated with significant morbidity and places a considerable burden on the healthcare system.
Aim: To ascertain the prevalence of epistaxis in our center and to identify the predictive factors of severity.
Methods: This is a retrospective cross-sectional analytical study of patients who presented to and/or were admitted for epistaxis at our department of Ear, Nose and Throat (ENT) during the period from January 2015 to December 2022.
Results: A total of 720 patients were included out of a total of 100,378 consultations, resulting in a prevalence of 0.7%. The mean age of the patients was 51.6 years (±18,73 Standard Deviation (SD)) and the sex ratio H/F was 1.43. The majority (87.9%) of cases were benign and treated on an outpatient basis, while 12.1% of patients presented with severe epistaxis and required hospitalization. The median duration of hospitalization was 5 days. The outcome was favourable in 99.4% of cases. Nevertheless, two cases of death due to severe epistaxis complicated by hemorrhagic shock were observed. A multivariate analysis identified several independent factors associated with severe epistaxis. These included male gender, recurrent epistaxis, a history of hematological disorders, the use of anticoagulant therapy, and an increased International Normalized Ratio (INR) level.
Conclusion: These results have made a significant contribution to our understanding of the severity factors associated with epistaxis, enabling a more targeted and personalized approach to prevention and treatment.

Key words: Epistaxis – Bleeding – Severity criteria - Risk Factors – Management.

Résumé

Introduction: L'épistaxis est une affection clinique répandue qui peut être associée à une morbidité importante et représente un fardeau considérable pour le système de santé.
Objectif: Connaître la prévalence de l'épistaxis dans notre centre et identifier les facteurs prédictifs de gravité.
Méthodes: Il s'agit d'une étude analytique transversale rétrospective de patients qui se sont présentés et/ou ont été admis pour épistaxis dans notre service d'oto-rhino-laryngologie (ORL) au cours de la période de janvier 2015 à décembre 2022.
Résultats: Au total, 720 patients ont été inclus sur un total de 100 378 consultations, soit une prévalence de 0,7 %. L'âge moyen des patients était de 51,6 ans (±18,73 écart-type) et le sex-ratio H/F était de 1,43. La majorité (87,9 %) des cas étaient bénins et traités en ambulatoire, tandis que 12,1 % des patients présentaient une épistaxis sévère et nécessitaient une hospitalisation. La durée médiane d'hospitalisation était de 5 jours. L'évolution a été favorable dans 99,4% des cas. Néanmoins, deux cas de décès par épistaxis sévère compliquée d'un choc hémorragique ont été observés. Une analyse multivariée a identifié plusieurs facteurs indépendants associés à une épistaxis sévère. Ceux-ci comprenaient le sexe masculin, des épistaxis récurrentes, des antécédents de troubles hématologiques, l'utilisation d'un traitement anticoagulant et une augmentation du taux international normalisé (INR).
Conclusion: Ces résultats ont apporté une contribution significative à notre compréhension des facteurs de gravité associés à l'épistaxis, permettant une approche plus ciblée et personnalisée de la prévention et du traitement.

Mots clés: Épistaxis – Saignement – Critères de gravité – Facteurs de risque – Prise en charge.

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Introduction

Epistaxis is defined as the bleeding from the nasal cavity. The incidence of epistaxis is difficult to assess, but it is estimated that approximately 60% of the population will experience epistaxis at some point in their lifetime, with 6% requiring medical attention [1]. The overall incidence of epistaxis is estimated to range from 10% to 15% [2].
Epistaxis may be a chronic problem or symptom of a generalized disorder. Epistaxis classified according to the site of origin and flow. Anterior nosebleeds are far more prevalent than posterior, accounting for 80% of cases. However, posterior nosebleeds are generally considered to require medical attention, as blood loss is often usually through the throat [3].
It is estimated that the cause of epistaxis is identified in only 15% of cases. In the absence of an identifiable cause, the condition is referred to idiopathic or essential epistaxis [4]. Despite being predominantly a benign condition, regardless of its etiology, epistaxis can be severe and become a genuine medical or surgical emergency due to the amount of blood lost, the number of repeated episodes, or the patient's medical vulnerability (such as coronary artery disease patients). The all-cause 30-day mortality rate of 3.4 per cent [5,6]. It constitutes the most frequent ENT emergency, accounting for 9.5 to 16% of cases [7]. However, the impact of various factors on the occurrence and severity of epistaxis remains unclear. Published data concerning the predictive factors for severe epistaxis are limited, therefore it is of interest to add our experience to the existing literature. The objective of this study was to investigate the prevalence and characteristics of epistaxis and to identify its predictive factors of severity.

Methods

Study Design and Settings

A cross-sectional analytical study was conducted. All patients presenting with epistaxis at our ENT Department from January 2015 to December 2022 were included, provided that they were aged 18 years or older they. Patients presenting with post-traumatic epistaxis (given that the majority of post-traumatic cases are managed in the emergency department) or with missing data in the consultation form or medical records were excluded.

Data Collection

The data was collected using a predefined data collection form for the study, based on outpatient medical records and medical files from our ENT Department.

Data Analysis

The data was processed and analyzed using IBM SPSS Statistics software, version 27.
Qualitative variables were described using frequencies and percentages. Quantitative variables were described using means and standard deviations if the distribution was normal; otherwise, medians with ranges were used for non-normal distributions. Subsequently, univariate and multivariate analyses were conducted to investigate the associations between severe epistaxis and its predictive factors. The Chi-square test was used to compare percentages when the validity conditions were met (expected cell frequencies ≥ 5). Otherwise, Fisher's exact test was used. A 5% significance level was employed, with the strength of association estimated through the calculation of the odds ratio (OR) and its 95% confidence interval.

Results

Frequency, seasonal and yearly distribution

A total of 720 cases of epistaxis were included over an 8-year period (2015-2022), during which 100,378 consultations were conducted in our ENT department, including 6,510 hospitalizations and 93,868 consultations. This gives a proportion of epistaxis of 0.7%.
The data revealed that the occurrence of epistaxis was more prevalent during the winter season accounting for 273 cases (37,7%). However, the lowest incidence was observed in the summer (n=128, 17,8%).

Population's Characteristics

In our study of 720 patients, 424 were male (58.9%) and 296 were female (41.1%), resulting in a male-to-female sex ratio of 1.43. The mean age of the cohort was 51.61 years, with a standard deviation of 18.73 years.
Among the patients, 252 (35%) were smokers, 98 (13.6%) consumed alcohol, and no patients reported drug use.
Regarding medical history of the cohort, a significant prevalence of cardiovascular diseases was observed, including hypertension (32.9%), diabetes (12.8%), and dyslipidemia (6.9%). Other noteworthy medical conditions included chronic kidney disease (n=19; 2,6%) and haematological pathologies (n=11; 1,5%).
A subgroup analysis revealed that the age groups most affected were those between 18 and 30 years of age and those between 60 and 70 years of age, both among males and females. Furthermore, 7 patients (1% of the total sample, or 5.19% of women of childbearing age) reported pregnancy in the third trimester.
A total of 151 patients were receiving antithrombotic therapy, representing 20.9% of the cases. Aspirin was the most commonly prescribed medication (n=78, 51,7%), followed by vitamin K antagonists (n=60, 40%).
Almost half of the patients (n=317; 56%) reported never experiencing an episode of epistaxis. ENT pathologies were identified (n=106;14.7%), with allergic rhinitis (n=69; 9.6%) followed by chronic rhinosinusitis (n=11; 1.5%), infectious nasosinusal pathologies (n=8 ; 1.1%), and nasosinusal tumours (n=5; 0.7%). The 5 cases were treated surgically via an external approach, followed by radiotherapy. Nasopharyngeal tumors included 7 cases (1%) which were treated and are currently in remission.

Clinical Study

Anterior nasal bleeding was observed 52.5% of cases, while antero-posterior bleeding and posterior bleeding were observed in 5.8% and 0.7% of cases, respectively. Bilateral epistaxis was noted in 40.8% of patients, and recurrent episodes occurring in 64.7% of cases.

Blood pressure (BP) measurements revealed that 401 patients (55,7 %) exhibited normal BP, while 312 patients (43.3%) had hypertension. Among patients with hypertension, 65 cases (9%) experienced elevated BP readings during episodes of epistaxis. Furthermore, 7 patients (1%) presented with arterial hypotension (systolic BP <90 mmHg), with two of these patients also exhibiting peripheral signs of shock, such as cold extremities, prolonged capillary refill time, and mottling.

Laboratory tests

Of 417 patients who underwent a complete blood count (CBC), anemia was found in 143 male patients (34.3%) and 82 female patients (19.7%). Additionally, one pregnant woman (0.2%) was found to have anemia. Of these, 10 (2.4%) had severe anemia (hemoglobin level ≤ 8 g/dL). Thrombocytopenia was noted in 52 cases (12.5%).

An analysis of coagulation profiles in 417 patients revealed that 48 patients (11.5%) had low prothrombin time (PT), with a value below 70%. Prolonged activated partial thromboplastin time (aPTT) was noted in 6 patients (1.4%), and elevated international normalized ratio (INR) was observed in 33 patients (7.9%), with 29 of these patients (7%) receiving treatment with vitamin K antagonists.

Therapeutic aspects

In our study, 633 patients presented with benign epistaxis (87.9%), while 87 patients were hospitalized for severe epistaxis (12.1%).

The initial treatment of benign epistaxis (n=633) involved irrigation and bi-digital compression. Bilateral anterior packing with petrolatum gauze was carried out in 168 patients (26.5%). Cauterization of the vascular lesion was performed in 50 patients (7.9%).

The treatment of severe epistaxis (n=87) primarily involved nasal packing in 85 patients (97.7%). Despite adequate anterior packing, 43 patients (49.42% of cases) experienced persistent or recurrent bleeding, leading to the implementation of posterior packing. Medical treatment included the prescription of tranexamic acid in 36 patients (41.4%) and ethamsylate in 55 patients (63.2%). In cases where initial interventions were unsuccessful, secondary interventions were pursued. Selective arteriography with nasal embolization of the internal maxillary artery was performed in 2 patients (2.3%): one with recurrent anteroposterior epistaxis unresponsive to previous attempts of posterior packing, and another with bilateral and profuse anteroposterior epistaxis. Both procedures resulted in successful bleeding control without neurological complications. Surgical ligations under general anesthesia were performed in four patients (4.6%) in whom anterior-posterior packing failed to stop bleeding. Immediate bleeding cessation was achieved by ligating the sphenopalatine artery at its exit from the sphenopalatine foramen. Blood transfusion was administered to 13 patients (15% of hospitalized patients). Four patients received platelet transfusion (4.6%), which was indicated for epistaxis with a PT below 40%.

The clinical course was favourable in 99.4% of cases (n=716). Nevertheless, two cases of recurrence were observed. Two deaths were recorded as a result of severe posterior and idiopathic epistaxis, which was attributed to hemorrhagic shock.

Predictive factors of severe epistaxis

Univariate study

Severe forms of epistaxis were more common in males, showing a statistically significant difference (p=0.006). Patients experiencing severe epistaxis were generally older than those with mild epistaxis, with mean ages of 55.37 ± 17.68 years versus 51.09 ± 18.82 years (p=0.046). The risk was particularly elevated among elderly individuals (age ≥ 65 years) (p=0.001). Posterior and anteroposterior locations were more frequently observed in severe cases ($p \leq 10^{-3}$), as was bilaterality ($p \leq 10^{-3}$). Recurrence was significantly higher in severe epistaxis cases ($p \leq 10^{-3}$).

Several comorbidities were associated with an increased risk of severe epistaxis. These include a history of hypertension, observed in 52.9% of severe cases compared to 30.2% of mild cases ($p \leq 10^{-3}$), and dyslipidemia, present in 14.9% versus 5.8% (p=0.002). Additionally, a history of haematopathy (4.6% vs. 1.1%; p=0.034), previous episodes of epistaxis (56.3% vs. 42.3%; p=0.014), and the use of antiplatelet therapy (p=0.023) were significant risk factors. The combination of dual antiplatelet therapy or anticoagulant plus antiplatelet therapy (p=0.016) further increased the risk. An elevated INR was notably more common in severe cases ($p \leq 10^{-3}$) (Table 1).

Multivariate analysis

Independent risk factors associated with severe epistaxis in multivariate analysis were male gender (p=0.003), recurrent nature ($p \leq 10^{-3}$), alcohol consumption (p=0.002), history of hematopathy (p=0.016), combination of dual antiplatelet therapy or anticoagulant + antiplatelet (p=0.006), and elevated INR ($p \leq 10^{-3}$) (Table 2).

Table 2. Predictive factors of epistaxis severity (multivariate analysis)

Vriables	Benign epistaxis (n=633)	Severe epistaxis (n=87)	OR [CI 95%]	P
Male gender	361 (57.0%)	63 (72.4%)	2.57[1.38–4.79]	**0.003**
Recurrent nature	387 (61.1%)	79 (90.8%)	7.97[3.37-18.86]	**≤10⁻³**
Alcohol consumption	91(14.4%)	7 (8.0%)	0.20[0.07 – 0.56]	**0.002**
History of hematopathy	7 (1.1%)	4 (4.6%)	6.45[1.42-29.26]	**0.016**
Combination of dual antiplatelet therapy or anticoagulant + antiplatelet	5 (0.8%)	4 (4.6%)	7.78[1.81-33.45]	**0.006**
Elevated INR	10 (3%)	23 (26.4%)	18.28[7.20-46.43]	**≤10⁻³**

Table 1. The characteristics of our study population with the severity of epistaxis

			Benign epistaxis n=633(%)	Severe epistaxis n=87(%)	p	OR	CI
Gender		Masculin	361 (57.0)	63 (72.4)	**0.006**	1.97	[1.20-3.24]
		Feminin	272 (43.0)	24 (27.6)			
Mean age (mean ± SD) (years)			51.09 ± 18.82	55.37 ± 17.68	**0.046**	1.02	[1.01-1.03]
Age groups	< 65 years		463 (73.1)	52 (59.8)	**0.010**	1.83	[1.15-2.91]
	≥ 65 years		170 (26.9)	35 (40.2)			
Residential area	Urban		418 (66.0)	51 (58.6)	0.174	-	-
	Rural		215 (34.0)	36 (41.4)			
Season	Warm seasons		256 (40.4)	37 (42.5)	0.728	-	-
	Cold seasons		377 (59.6)	50 (57.5)			
Life style habits	Tobacco		226 (35.7)	26 (29.9)	0.286	-	-
	Alcohol		91(14.4)	7 (8.0)	0.106	-	-
	Inhaled drugs		0(0)	0(0)	-	-	-
Epistaxis characteristics	Anterior Posterior Anterior and posterior		630 (99.5) 3 (0.5) 0 (0)	43 (49.4) 2 (2.3) 42 (48.3)	**≤10^{-3}**	30.21	[10.78-84.68]
	Unilateral Bilateral		399 (63.0) 234 (37.0)	27 (31.0) 60 (69.0)	**≤10^{-3}**	3,78	[2.34-6.13]
	Reccurent		387 (61.1)	79 (90.8)	**≤10^{-3}**	6.27	[2.98-13.21]
BP at admission	<140/90		517 (81.7)	69 (79.3)	0.595	-	-
	≥140/90		116 (18.3)	18 (20.7)			
Comorbidities	Hypertension		191 (30.2)	46 (52.9)	**≤10^{-3}**	2.59	[1.64-4.08]
	Diabetes		78 (12.3)	14 (16.1)	0.323	-	-
	Dyslipidemia		37 (5.8)	13 (14.9)	**0.002**	2.83	[1.43-5.56]
	Hematopathy		7 (1.1)	4 (4.6)	**0.034**	4.31	[1.23-15.03]
	Chronic kidney disease		17 (2.7)	2 (2.3)	1.000	-	-
	Pregnancy		6 (0.9)	1 (1.1)	0.596	-	-
	Other Cardiovascular pathologies		99 (15.6)	14 (16.1)	0.913	-	-
ENT history	Epistaxis		268 (42.3)	49 (56.3)	**0.014**	1.75	[1.11-2.76]
	Medical and Surgical pathologies		90 (85.8)	13 (14.9)	0.859	-	-
Medication history	Medication affecting blood clotting		127 (20.1)	24 (27.6)	0.106	-	-
	Combination*		5 (0.8)	4 (4.6)	**0.016**	6.05	[1.59-22.99]
	Anticoagulant		57 (9.0)	7 (8.0)	0.765	-	-
	Antiplatelet		70 (11.1)	17 (19.5)	**0.023**	1.95	[1.08-3.50]
Biological parameters	Anemia Thrombocyto-penia Low TP Prolonged aPTT Increased INR		175 (53%) 44 (13.3%) 36 (10.9%) 0 (0%) 10 (3%)	50 (57.5%) 8 (9.2%) 12 (13.8%) 6 (6.9%) 23 (26.4%)	0.460 0.299 0.453 **≤10^{-3}** **≤10^{-3}**	- - - - 11.5	- - - - [5.22-25.32]

Discussion

Epistaxis represents a highly prevalent indication for medical consultation. Although it is challenging to ascertain with precision, we estimate that 60% of the population has experienced at least one episode of epistaxis in their lifetime of these 6% required medical or surgical management and less than 0.2% necessitated hospitalization to control bleeding [8]. In 2020, Tunkel and al. estimated that epistaxis accounted for 0.5% of all emergency department visits [1]. Furthermore, a study conducted in Southern Europe by L.R. Reis and al. in Southern Europe, over a seven-year period found that out of a total of 71,624 patients presenting to the emergency department, 3.7% (2371 cases) were for epistaxis [9]. The data collected in our study are consistent with those previously published. In our series, over an 8-year period, we documented 720 cases out of 100,378 patients presenting to the ENT outpatient department, representing a prevalence of 0.7%. It is important to note that this figure is likely an underestimate, as several cases of epistaxis are not seen in ENT department but in medical or surgical emergency departments, especially cases of post-traumatic epistaxis, or in internal medicine and primary healthcare centers or simply at home.

We hospitalized 12.1% of patients presenting with epistaxis, aligning with data from Cayir and al. in 2020, where 10.2% of patients were hospitalized, with the vast majority (89.8%) being managed conservatively on an outpatient basis [10]. Although, epistaxis is often benign, its severity, recurrence, specific patient profile (e.g. anticoagulant use), bleeding origin, or planned therapeutic intervention (e.g. embolization, surgery), may warrant further investigation, requiring specific diagnostic work-up including basic blood tests in severe cases to assess the impact and potential need for transfusion

[11]. In our series, standard blood tests were performed in 57,9% of cases. Epistaxis management followed a standardized algorithm established by the French Society of Otorhinolaryngology (SFORL) in 2016[11,12]. Our study showed that the conservative approach was sufficient to manage most cases, with only 6 patients (0.8%) requiring invasive treatment, which is consistent with the literature [2,13-16]. In our study, embolization was performed in 2 patients (0.3%) with favourable outcomes. Selective embolization is a highly effective therapeutic option, with success rates ranging from 87% to 93% [1,17].

In the literature, severe epistaxis can affect individuals of all age groups. However, there is an increased incidence among the elderly population [18]. This finding has been corroborated by numerous authors [5,19,20]. In the series by Haci and al. [14], which involved patients who were hospitalized for severe epistaxis, the average age was 54 years. Walker and al. [21], in their large series of 21,770 cases of severe epistaxis requiring hospitalization, found a median age of 70 years, compared to 60.9 years in the study by Cayir and al. This can be attributed to a higher incidence of cardiovascular diseases and iatrogenic bleeding in the elderly population [10]. These results corroborate the findings of our series, indicating that patients with severe epistaxis were older than those with benign epistaxis, with a mean age of 55.37 ± 17.68 years versus 51.09 ± 18.82 years, respectively. Furthermore, patients aged 65 years and above were found to be at higher risk of developing severe epistaxis.

Cardiovascular diseases, particularly hypertension (HTN), are frequently considered to be the cause (or triggering factor) of severe epistaxis. However, the actual role remains a topic of ongoing debate. In our study, a significant association ($p \leq 10\text{-}3$, OR=2.59) was observed between a history of HTN and the severity of epistaxis. Supporting these findings, in their study conducted in Korea (2020), Byun and al. [22] which examined the association between HTN and the severity of epistaxis. The study demonstrated that patients with a history of HTN had more episodes of epistaxis requiring hospital visits than patients without HTN, with a higher severity of epistaxis. In a post-mortem study, it was observed that fibrous degenerative changes in the nasal vessels were observed in patients with a history of HTN [23].

Our study shows the presence of diabetes (12.8%) and dyslipidemia (6.9%) among the comorbidities in patients with epistaxis. A statistically significant difference was observed for dyslipidemia in relation to the severity of epistaxis, with a p-value of 0.002 (OR=2.830; 95%). These conditions also deserve particular attention as they may affect vascular health, compromise vascular integrity, and increase the risk of severe epistaxis. Abrich and al. [24] conducted a retrospective cohort study at the Marshfield Clinic of more than 50 potential risk factors for recurrent spontaneous epistaxis and showed that HTN and diabetes may increase the risk of severe epistaxis by inducing atherosclerotic changes in the nasal vessels. Elwany and al. [25] investigated the significance of hyperlipidemia and atherosclerotic risk factors in hypertensive patients with epistaxis and conducted that there was a strong positive correlation between LDL cholesterol levels and the number of epistaxis episodes.

Our study revealed that a history of haematological disorders also represents a predictor of severe forms of epistaxis, with an OR of 6.454 and a p-value of 0.016. Indeed, the interaction of a hemostatic disorder and a local cause of bleeding is a common occurrence with the potential to result in severe epistaxis. Supporting our results, the study by Hughes and al. [26] also found a significant correlation between severe epistaxis and a history of haemopathy. McIntosh [27] reported two cases of severe thrombocytopenia associated with heavy bleeding and altered haemodynamic status. In our series, a history of epistaxis was found in 56.3% of severe cases compared to 42.3% of benign cases, with a statistically significant difference. In accordance with our findings, Corte et al [28] demonstrated that a history of epistaxis was among the predictive factors for hospitalization due to severe epistaxis.

Our study revealed a significant correlation between the use of antiplatelet agents and the severity of epistaxis. Several authors [29–31] have reported that up to 60% of patients admitted for severe epistaxis were on antithrombotic treatment, which was associated with longer hospital stays and higher readmission rates. These findings are consistent with those of Marin and al. [32], who showed that 61% of patients were taking medications affecting coagulation at the time of epistaxis, with aspirin being the most commonly implicated. Acetylsalicylic acid is now clearly identified as a risk factor for severe epistaxis and also exposes patients to a higher risk of recurrence [33,34]. Furthermore, our study identified that the concurrent use of dual antiplatelet agents or an anticoagulant with antiplatelet agents is strongly associated with severe epistaxis (OR=10.257; p= 0.005). This observation is in agreement with the results of Smith and al. [35], who demonstrated that patients on such a combination of medications required longer hospital stays and were more likely to need more aggressive hemostatic measures.

The objective of this study was to investigate the characteristics of epistaxis and their correlation with severity. The results indicate that bleeding in the posterior and anteroposterior locations is significantly associated with severe cases of epistaxis, demonstrating a notable difference compared to benign epistaxis. Marin and al. [32], in their series on the profile of patients hospitalized for severe epistaxis over a period of 7 years, reported a higher frequency of posterior bleeding (73.9% of cases). Furthermore, due to their abundance, bilateral epistaxis is more severe than unilateral epistaxis. Regarding the recurrent nature of epistaxis, our results suggest a strong correlation between recurrences and severity. These findings are consistent with those of Reyre and al. [4], who identified recurrence as a factor of severity in epistaxis.

In our study, there were no cases of prolonged aPTT among patients presenting with benign epistaxis, and this difference was statistically significant. Furthermore, an elevated INR was observed more frequently in severe cases, with a statistically significant difference (OR=11.5). This association was found to be robust. This finding is consistent with the results of Smith and al. [35], who

demonstrated that among patients on warfarin, most exhibited elevated INR levels at the time of epistaxis, leading to a significantly increased risk of severe epistaxis. This correlation is directly related to the duration of INR instability.

Strengths and limitations:

To the best of our knowledge, this research represents the inaugural investigation into the prevalence and epidemiological profile of epistaxis in the region. This study represents a pioneering investigation into the predictive factors of epistaxis severity in our town. The study which encompasses 720 cases, is sufficiently large to ensure a good representation of the studied population, thereby enhancing the validity of the results. The study encompasses a period of 8 years, allowing for an in-depth analysis of trends and changes in the prevalence and severity of epistaxis over an extended period.

The data were collected from two sources: outpatients and patients admitted to the ENT department. This diversified approach distinguishes the study by comparing patients with benign and severe epistaxis, thereby facilitating a more comprehensive understanding of the factors associated with severity.

Throughout this work, we aimed to ensure a rigorous methodology and minimize the potential of bias. However, it is important to acknowledge some inherent limitations of our study, particularly its reliance on a retrospective observational approach.

Conclusion

Epistaxis represents the most common emergency in otorhinolaryngology. While often benign, severe cases due to abundant or recurrent bleeding can become life-threatening. It is of paramount importance to gain an understanding of the factors that predict the severity of epistaxis, as this will enable appropriate clinical management to be provided and severe outcomes to be prevented. This study has significantly contributed to the understanding of the factors associated with severe epistaxis, emphasizing the importance of early evaluation in order to determine appropriate treatment and prevent severe complications. This research will prove to be a valuable resource for healthcare professionals, providing guidance on the management of epistaxis and ultimately improving patient care.

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