

Analysis of etiology and treatment methods of epistaxis in adult patients visiting

Analiza przyczyn krwawień z nosa oraz metod ich zaopatrywania w izbie przyjęć Samodzielnego Publicznego Centralnego Szpitala Klinicznego (SPCSK) WUM

Wkład autorów:

A – Study Design
B – Data Collection
C – Statistical Analysis
D – Manuscript Preparation
E – Literature Search
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Michał Syniec^{2ABCDEF}, Justyna Prygiel^{2ABCDEF}, Anna Dubielska^{2ABCDEF}, Karol Taradaj^{2BCD},
Michał Deja^{2ABCDEF}, Jarosław Balcerzak^{1ADE}

¹Department of Otolaryngology, MUW Head: Prof. Kazimierz Niemczyk

² Students' Scientific Group by the Department of Otolaryngology, MUW

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ABSTRACT:

Introduction: Epistaxis is not only the most commonly seen type of bleeding in laryngological emergency department, but also a frequent reason of visiting this department. It may be a symptom of trivial disorder or serious systemic either chronic disease.

Aim of study: The primary objective of this study was to analyze the etiology and treatment methods of epistaxis in adult patients.

Material and methods: This was the retrospective study of 574 adult patients who visited the Emergency Department of Otolaryngology in Public Central Teaching Hospital between 1st January and 30th December 2014 because of epistaxis. There were 274 females and 300 males with the mean age of 64,6 years (woman), and 60,3 years (men).

Results: 228 patients (39,7%) were chronically treated for hypertension. Blood pressure measurement was performed in 335 patients (58,4%) and elevation over 160 mmHg systolic, or over 95mmHg diastolic took place in 132 cases (22,99%). Other significant factor observed in the study was anticoagulant and antithrombotic drug usage. In 134 cases (22,3%) patients were treated with medicine from this group (the most frequently- acetylsalicylic acid). Other accompanying disorders were: heart failure, atrial fibrillation, diabetes mellitus, other cardio-/cerebro-vascular diseases, COPD, respiratory track infection. The most common intervention in case of epistaxis was nasal packing (Rapid Rhino – 248 patients, Spongostan sponge – 129 patients). Captoprilum was administered in 79 cases (13,8%) to normalize elevated blood pressure. 90 patients (15,6%) required an additional internal medicine consultation.

Conclusion: The impaired control of hypertension and treatment with oral anticoagulant (acenocumarol) or antithrombotic drugs (acetylsalicylic acid) were the most common reasons of epistaxis in examined group of patients. The most frequent symptomatic management were packing with Spongostan sponge and Rapid Rhino balloon tampon. Typical anterior nasal tamponade with gauze was much less frequent. The treatment according to the etiology was added if needed.

KEYWORDS:

epistaxis, anticoagulants, hypertension, epidemiology

STRESZCZENIE:

Wstęp: Krwawienie z nosa należy do najczęściej spotykanych w praktyce laryngologicznej rodzajów krwawienia, jak również do najczęstszych przyczyn wizyt pacjentów na ostrym dyżurze laryngologicznym. Krwawienie takie może być zarówno objawem niegroźnych schorzeń, jak i poważnych ogólnoustrojowych chorób.

Cel: Celem pracy była analiza sposobu postępowania z pacjentami zgłaszającymi się na ostry dyżur laryngologiczny w SPCSK WUM z powodu krwawienia z nosa.

Materiał i metody: Badanie miało charakter retrospektywny. Badaną grupę stanowiło 574 pacjentów, 274 kobiety i 300 mężczyzn, którzy zgłosili się na ostry dyżur laryngologiczny w SP CSK WUM z powodu krwawienia z nosa pomiędzy 1 stycznia a 30 grudnia 2014 r. Średnia wieku pacjentów wynosiła 64,6 lat dla kobiet i 60,3 lat dla mężczyzn. Z analizy wyłączono przypadki, w których przyczyną krwawienia był uraz.

Wyniki: 228 zgłaszających się z krwawieniem pacjentów (39,7%) było leczonych przewlekłe z powodu nadciśnienia tętniczego. Pomiar ciśnienia tętniczego został wykonany u 335 z nich (58,4%). W 132 przypadkach (22,99%) ciśnienie było podwyższone: skurczowe powyżej 160 mmHg i/ lub rozkurczowe powyżej 95 mmHg. Innym znaczącym czynnikiem było stosowanie leków przeciwplateletowych i przeciwkrzepliwych. 134 pacjentów (22,3%) przyjmowało leki z tej grupy (najczęściej kwas acetylosalicylowy). Kolejnymi czynnikami ryzyka wystąpienia krwawień podawanymi w wywiadzie były: niewydolność serca, migotanie przedsionków, cukrzyca, POChP, infekcje dróg oddechowych i inne choroby układu krwionośnego. Najczęstszym stosowanym leczeniem była tamponada przednia (Rapid Rhino – 248 pacjentów, Spongostan – 129 pacjentów). W 79 przypadkach (13,8%) zastosowano Captopril kaptopril w celu obniżenia ciśnienia krwi. 90 pacjentów (15,6%) wymagało dodatkowej konsultacji internistycznej.

Wnioski: W badanej grupie najczęstszymi przyczynami krwawienia z nosa były źle kontrolowane ciśnienie tętnicze i leczenie doustnymi antykoagulantami lub lekami przeciwplateletowymi. Najczęstszym zastosowanym leczeniem objawowym była tamponada przednia typu Rapid Rhino i Spongostan. W razie konieczności stosowano leczenie przyczynowe.

SŁOWA KLUCZOWE: krwawienie z nosa, środki przeciwzakrzepowe, nadciśnienie tętnicze, epidemiologia

Arterial hypertension was the most common chronic condition and was seen in 228 patients (39.7%). Heart failure was reported by 31 patients (5.4%), atrial fibrillation by 37 patients (6.4%), diabetes mellitus by 25 patients (4.3%), and coronary artery disease by 23 patients (4.0%). Other conditions were rarer, although their association with epistaxis was more obvious. These were thrombocytopenia (regardless of etiology) – 6 patients, Wegener’s granulomatosis – 2 patients, and Rendu-Osler-Weber disease – 1 patient. In 14 cases, a recent (less than 3 weeks earlier) surgical procedure of the nose (septoplasty, conchoplasty, etc.) had been performed. A significant group of patients (7 cases) was comprised by patients receiving radiotherapy or chemotherapy due to cancer, of whom one person was treated for laryngeal cancer.

The most commonly used medications were anticoagulants and antiplatelet agents (134 patients – 22.3%).

Data are presented in Table 1.

Blood coagulation tests were performed in 93 patients (16.2%), of whom 37 patients had a record. Eleven patients had a supratherapeutic INR (international normalized ratio) value (above 3).

Because of the high prevalence of arterial hypertension in patients with epistaxis, blood pressure was measured in 335 patients (58.4%). Values equal to or above 160 (systolic blood pressure) and/or 95 (diastolic blood pressure) were considered abnormal. According to such criteria, an elevated blood pressure value was seen in 132 patients (22.99%), of whom 99 patients had an earlier diagnosis of arterial hypertension.

RECURRENT BLEEDING

Of the whole study population (574 patients), 95 patients had a recurrent bleeding.

Recurrence of epistaxis was analyzed with respect to the presence or otherwise of a chronic condition. To this end, a statistical analysis was carried out with the use of Statistica 12 software (StatSoft) – the Pearson’s χ^2 test was employed. The χ^2 equaled 5,572595 and the degrees of freedom (df) equaled 1, which showed a slight difference in the frequency of recurrent epistaxis between patients with chronic conditions and patients with no such medical history. This difference was statistically significant ($p = 0.01824 < p = 0.05$). The ϕ parameter for binominal tables was used in order to

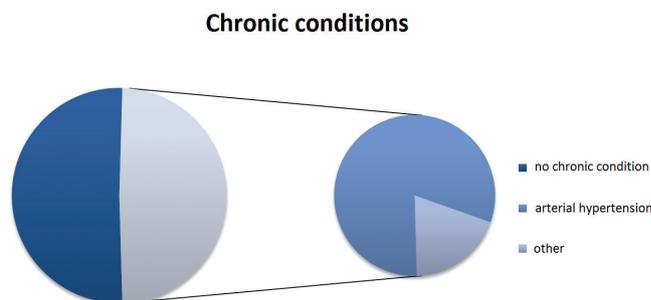


Fig. 1. Chronic conditions. Larger diagram – proportion of epistaxis in patients with a chronic condition. Smaller diagram – proportion of hypertensive patients among patients with chronic conditions.
no chronic condition
arterial hypertension
other

Tab. 1. Number and percentage of patients taking anticoagulants and antiplatelet agents

MEDICATION	PATIENT NUMBER	PERCENTAGE
ASA (acetylsalicylic acid)	41	30.6
Clopidogrel	8	5.9
Acenocoumarol	41	30.6
Heparin	4	0.7
Rivaroxaban	4	5.19
Anticoagulant*	22	16,4
Polytherapy**	11	8.2
Total	134	

* Specific drug not recorded in patient file

** Patient used at least two anticoagulants and/or antiplatelet agents

determine the direction of the observed difference. The R equal to -0.098531 reflected a weak negative correlation between the presence of a chronic condition and a tendency to recurrent epistaxis – this relationship was statistically significant. The above-mentioned correlation is shown on a scatter plot (Fig. 3)

METHODS OF TREATMENT:

Epistaxis was self-limiting in 27 patients and did not require any intervention on admission, however, medical help was necessary in the majority of patients. Nasal tamponade was applied in 445 patients.

Chemical coagulation of the mucosa was successfully performed with the use of 30% AgNO_3 in 11 patients in whom epistaxis was caused by an ulceration in the caudal part of the nasal septum.

Because of abnormally elevated blood pressure, 79 patients received sublingual captopril at a dose of 12.5 to 37.5 mg. Abnormal blood pressure values or the presence of chronic conditions prompted a consultation with internal medicine physician. Only 9 epistaxis patients (1.57%) required inpatient management. Sixteen patients were referred to an ENT outpatient clinic.

In-patients

We analyzed medical files of 9 in-patients. One case was excluded in whom the cause of epistaxis was determined to be the result of past tonsillectomy.

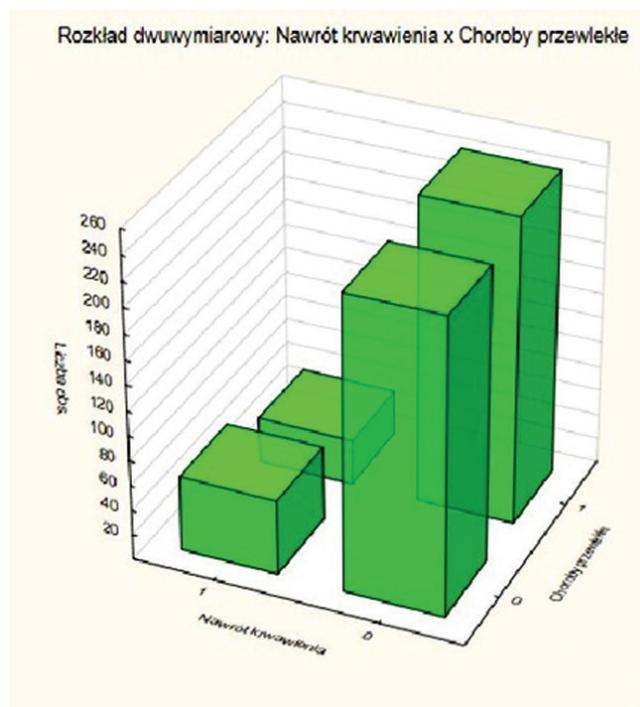


Fig. 2. Comparison of the number of patients with recurrent bleeding with respect to the presence or otherwise of a chronic condition. [rozkład dwuwymiarowy] – two-dimensional distribution [nawrót choroby] – recurrence of bleeding [choroby przewlekłe] – chronic conditions

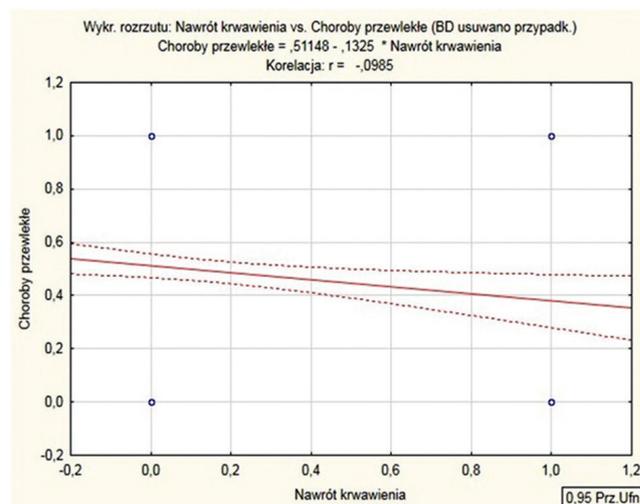


Fig. 3. Correlation between recurrent epistaxis and the presence of chronic conditions [wykr rozrzutu] – scatter plot [nawrot krwawienia] – recurrent epistaxis [choroby przewlekłe] – chronic condition [BD usuwano przypadek] – ??? [korelacja] – correlation [prz. Ufn.] – confidence interval

The mean time of hospitalization was 6.125 days. Inpatient management was instituted in patients with recurrent epistaxis who were treated unsuccessfully in the emergency department. The majority of patients had an additional risk factor for epistaxis such as Rendu-Osler-Weber disease (2 hospitalizations of one patients), a history of ethmoidectomy (3 patients with the mean time of 7 days since the operation), and a loss of consciousness in a patient with arterial hypertension. One case did not have obvious risk factors.

Rapid Rhino was used in 5 patients and gauze tamponade with concomitant antibiotics in 2 patients. In the patients with Osler-Rendu-Weber disease, the bleeding lesion was removed by endoscopy. Bilateral coagulation of the sphenopalatine arteries was performed in the patient who had a history of ethmoidectomy. None of these patients had abnormal blood test results.

DISCUSSION

Arterial hypertension is widely accepted as one of the most significant risk factor of epistaxis (Tab. 3)

This explains why almost 60% of patients had their blood pressure measured in the emergency department. Even in the case when blood pressure values are below 160/95 mm Hg, arterial hypertension is still the most frequent comorbidity in epistaxis patients. A number of retrospective^{3,12} as well as prospective^{4,5} studies have confirmed this observation. In one study, elevated blood pressure values were seen in 30% of patients, and 79% had a diagnosis of arterial hypertension⁴. Another study reported elevated blood pressure in 23.6% of patients⁴, whereas 36% of patients admitted to hospital with epistaxis were hypertensive⁵. Other authors report that epistaxis patients have higher systolic and diastolic blood pressure values in comparison with a control group³.

On the other hand, there are reports that did not find any difference in epistaxis between people with arterial hypertension or otherwise⁶. This was confirmed by a prospective trial that compared patients admitted to an emergency department because of epistaxis and patients admitted for other reasons.

Our results lend support to a conclusion that among epistaxis patients presenting to the emergency department arterial hypertension is a frequent comorbidity. However, it does not mean that a similar relationship exists in the general population.

The association between arterial hypertension, heart failure, diabetes mellitus, and atherosclerosis in nasal arteries is a well-documented clinical phenomenon, which explains recur-

Tab. II. Anterior nasal tamponade measures.

ANTERIOR TAMPONADE	445	100%
Spongostan®	129	28.9%
Rhino-rapid®	248	55.7%
Meroceel®	15	3.3%
Not specified	39	8.7%
≥2	14	3.1%

Tab. III. Percentage prevalence of the causes of epistaxis

CAUSE OF EPISTAXIS	PERCENTAGE PREVALENCE (%)
Trauma	50.79
Arterial hypertension	22.36
Abnormal complete blood count	3.51
Upper respiratory tract infection	1.59
Liver disease	1.27
Renal disease	1.27
History of surgical procedures of the nose	1.27
Congestive heart failure	0.95
Diabetes mellitus	0.95
Angiofibroma of the nasopharynx	0.95

rence of hemorrhagic symptoms in such patients⁸. We determined that in such patients the frequency of recurrent hemorrhage is comparable to the population frequency. Perhaps this results from a good control of these diseases by specialists.

Another risk factor studied hereby was the use of antiplatelet agents and anticoagulants. Unfortunately, the INR was not recorded in every patient file. In 70% of patients INR was normal. We want to mention that in some studies the risk of warfarin-associated bleeding was independent of the INR value^{8,9}. On the other hand, 75% of patients on anticoagulant therapy complicated by epistaxis had elevated INR values¹⁰. Acetylsalicylic acid is the most commonly used medication in patients with epistaxis, perhaps because of the numerous indications for its use.

CONCLUSIONS

The main reasons for epistaxis in the studied group were arterial hypertension and A chronic use of antiplatelet agents or anticoagulants. The most common treatment was the use of anterior nasal packing with the Rinorapid or Spongostan. Furthermore, causative treatment was used (captopril). Inpatient management was only rarely required.

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Corresponding author: Jarosław Balcerzak, Department of Otolaryngology, MUW, Warsaw, Poland; e-mail: jaroslaw.balcerzak@wum.edu.pl

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