

Relationship between epistaxis and hypertension: A cause and effect or coincidence?



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Introduction: Epistaxis is the most common otorhinolaryngological emergency. Whether there is an association or cause and effect relationship between epistaxis and hypertension is a subject of longstanding controversy.

Objective: The aim of our study is to evaluate the relationship between epistaxis and hypertension.

Materials and methods: This study was conducted at Olaya Medical Center (Riyadh) during the period between May 2013 and June 2014. A total of 80 patients were divided into two groups: Group A consisted of 40 patients who presented with epistaxis, and Group B consisted of 40 patients who served as a control group. Twenty-four-hour ambulatory blood pressure monitoring (ABPM) was performed for all patients. Patients were followed up for a period of three months.

Results: Readings of blood pressure (BP) were similar between the two groups regarding BP at presentation, ABPM, and BP at three months. There was a higher number of attacks in patients with history of hypertension. There was highly significant positive correlation between number of attacks of epistaxis and BP readings. Systolic BP at presentation was higher in patients who needed more complex interventions such as pack, balloon or cauterization than those managed by first aid.

Conclusion: We found no definite association between epistaxis and hypertension. Epistaxis was not initiated by high BP but was more difficult to control in hypertensive patients.

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Keywords: Hypertension, Epistaxis, Ambulatory monitoring

Introduction

The term 'epistaxis' is Latin, derived from the Greek, epistazein (epi – above, over; stazein – to drip) [1]. Epistaxis is a common symptom of diverse conditions which may present as mild recurrent bleeds or severe life threatening rhinological emergency and may pose a challenge to

even a skilled otolaryngologist [2]. Globally, the true incidence remains unknown, but it is estimated that 60% of the population will have at least one episode of epistaxis in their lifetime, and 6% of them will seek medical attention. A slight male preponderance with 55% male and 45% female has been reported. Epistaxis is rare in neonates but common among children and

Disclosure: Authors have nothing to disclose with regard to commercial support.

Received 1 July 2014; revised 16 August 2014; accepted 5 September 2014.
Available online 16 September 2014

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Peer review under responsibility of King Saud University.
URL: www.ksu.edu.sa
<http://dx.doi.org/10.1016/j.jsha.2014.09.002>



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young adults, and peaks in the sixth decade giving a bi-modal age presentation [3].

Hypertension is increasing in prevalence in Saudi Arabia, affecting more than one fourth of the adult Saudi population [4]. It is still doubtful whether a connection exists between epistaxis and hypertension [6]. The prevalence rates of hypertension among patients with epistaxis range from 17 to 67% [6]. Whether there is an association or cause and effect relationship between epistaxis and hypertension is a subject of longstanding controversy [7].

Twenty-four-hour ambulatory BP monitoring (ABPM) is more valuable for predicting prognosis than other measures, as it more accurately assesses the risk of cardiovascular disease than measurements of BP made during clinic or office visits, and also ABPM is closely related to damage of target organs [8]. Twenty-four-hour ABPM enables the continuous observance of changes in BP during activities of daily life, measuring automatically at specific time intervals, and therefore allowing for more accurate BP measurements [9]. Serious spontaneous epistaxis may also be the presenting sign of underlying true hypertension in 43% of patients with no history of hypertension. However, hypertension per se does not appear to be a significant causal factor and/or factor of severity in serious spontaneous epistaxis [10].

Blood vessels in the nose run superficially through the easily-damaged mucosa and are therefore relatively unprotected [11]. The arterial hypertension would determine structural alterations of the nasal vessels similar to those verified in the cerebral circulation and retinal examination [12]. The etiologic role of hypertension in epistaxis is not certain. It is possible that hypertension causes arteriolosclerotic nasal vascular changes that predispose hypertensives to increased susceptibility to epistaxis [7]. Fundus examination of hypertensive epistaxics has demonstrated high prevalence of hypertensive retinal arteriolosclerosis in patients with epistaxis, which is an index of arteriolosclerotic changes in other parts of the body [13]. Similarly, an association between duration of hypertension and left ventricular hypertrophy and nasal artery enlargement determined by rhinoscopy has been described among hypertensives with history of epistaxis, indicating that long lasting hypertension might contribute to epistaxis [14].

The aim of our study is to evaluate the relationship between epistaxis and hypertension, its recurrence and control.

Abbreviations

ABPM	ambulatory blood pressure monitoring
BMI	body mass index
BP	blood pressure
d	diastolic
dBP	diastolic blood pressure
DM	diabetes mellitus
ENT	ear, nose and throat
HTN	hypertension
s	systolic
sBP	systolic blood pressure

Patients and methods

This is a prospective observational study conducted in Olaya Medical Center (Riyadh) during the period from May 2013 to June 2014. The study protocol was approved by the center's ethics committee.

Patients older than 18 years presented to ear, nose and throat (ENT) clinic were enrolled in the study after a written consent to participate in the study. A total of 80 patients were divided into two groups. Group A consisted of 40 patients who presented with idiopathic epistaxis. Group B consisted of 40 patients who served as a control group. These had presented with other reasons such as ear pain, headache, and dizziness. Patients with history of trauma to nose, local pathology, systemic diseases, bleeding disorders, patients on aspirin, clopidogrel or anticoagulants, and children were excluded from the study. None of the patients was lost to follow-up.

Rhinoscopy

Anterior rhinoscopy was done using a nasal speculum, light source, and a head mirror with simple inspection. For posterior rhinoscopy, a tongue depressor was placed on the center of the base of the tongue with one hand, and the base of the tongue was pressed downward. A small warmed mirror was then introduced into the space between the soft palate and posterior pharyngeal wall to inspect the choana, the posterior ends of the turbinates, the posterior margin of the septum, and the nasopharynx, together with its roof and the ostia of the Eustachian tubes. Nasal sinoscopy was done using 1.7 mm rigid endoscope (30°), light source, camera, and monitor to evaluate all cases, and to detect site, severity and management method of epistaxis. Most patients underwent anterior rhinoscopy and sinoscopy, whereas posterior rhinoscopy was used only in a limited number of patients.

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