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A novel method for epistaxis management: Randomized clinical trial comparing nose clip with manual compression

Epistaxis is a common complaint in patients presenting to Emergency Department with the annual prevalence of about 11% [1,2]. Sixty percent of population experience epistaxis at least once during life [3,4]. Annually, 14.9 out of 10,000 persons need medical care for epistaxis and among these, 1.6 are admitted [5]. Eighty to 90% of epistaxis is originated from anterior nasal cavity [6], Direct compression of the cartilaginous part of the nose for 10–15 min is a simple and effective way to control epistaxis with success rate up to 65% [7], however; it is often missed in epistaxis management and the needed time is not considered by the patient [8].

The application of direct pressure with a correct method and enough time can easily obviate the need for further aggressive and expensive interventions and it may prevent their adverse events [9].

It is supposed that patients do not apply manual compression constantly for enough time, therefore nose clips may have better success rate because they are not in need of patients' cooperation.

This study is a randomized clinical trial conducted in Shahid Rahnemoon Hospital Emergency Department from January 2016 to July 2016. The study was approved by Ethics Committee of Shahid Sadoughi University of Medical Sciences.

Patients triaged with chief complaint of epistaxis were visited by the physicians in charge of the study and eligible patients were selected. All the assistants involved in the study were trained to glean the required data.

Patients older than 16 years presented to the Emergency Department with active epistaxis of anterior origin were included in the study.

Patients were excluded from the study if there were traumatic or post-surgery epistaxis, bleeding disorders or anticoagulant use, intervention for controlling epistaxis in recent six months, posterior epistaxis, hemodynamic instability, upper respiratory tract infection, association with a significant complaint (e.g. chest pain), and septal deviation.

After written informed consent, patients eligible for the study was randomized into intervention group (nose clips) and control group (manual compression After allocation, demographic information of the patients was recorded in a prepared form. Severity of epistaxis was defined as, no bleeding (1), spotting (2), oozing (3) and severe blood flow (4).

After clearing the clots by blowing the nose, patients were asked to sit on a chair and have sniffing position. In intervention group, nose clip by the nurse, and in control group manual compression by the patient were applied to the cartilaginous part of the nose for 15 min. Then the compression was relieved and bleeding severity was assessed and recorded.

If bleeding did not stop, the next step was cauterization of bleeding site, if visible, or anterior nasal tampon. If these measures were not successful, the next step was ENT consultation. Finally, patients satisfaction from the treatment was measured via Likert scale (strongly satisfied, satisfied, no idea, dissatisfied, strongly dissatisfied).

Length of stay in the emergency department was measured from the admission and disposition time and recorded.

Twenty-six of 92 patients were excluded from the study and the remaining 66 were randomly allocated to two groups of 33 patients.

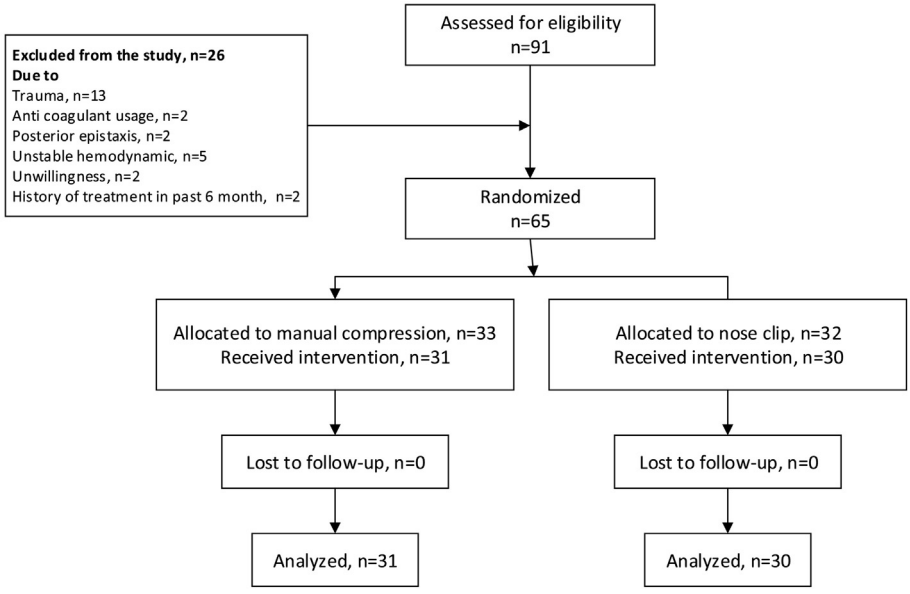

Fig. 1. Flow diagram.

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Table 1
Baseline characteristics of enrolled patients

Variables	Nose clip	Manual
Patients N	30	31
Age mean (range)	41 (19–77)	44 (17–68)
Male:Female	14:16	16:15
Epistaxis severity before intervention N (%)		
Spotting	7 (23)	6 (19)
Oozing	8 (26)	9 (29)
Stream	15 (50)	16 (51)

Finally, 30 patients in group A (nose clip) and 31 patients in group B (manual compression) were treated and analyzed (Fig. 1). Age, sex, and epistaxis severity before intervention were the same in both groups (Table 1).

Both interventions seemed successful in controlling epistaxis (p value: 0.000) and epistaxis was controlled to full stop (50.8) or spotting (19.7) in 70.5% of patients. Nose clip was better in controlling epistaxis especially in severe epistaxis (p value: 0.008). ENT consultations were ordered more in manual compression group, but it was not statistically significant (p value: 0.8). Emergency Department stays in nose clip group was less than manual compression (p value: 0.000). Satisfaction was higher in nose clip group (p value: 0.000).

As the study interventions were nose clip and manual compression, blinding of the patients was impossible. Nose clip used in this study applies constant bilateral compression to the cartilaginous part of the nose. It had better success rate than manual compression to fully stop the bleeding (66.7% versus 35.5%). Only 1 patient (3.3%) had severe blood flow after applying nose clip much less than control (11 patients [35.5%]). It is supposed that this difference in controlling epistaxis is due to dependency of manual compression to patient's cooperation.

In control group, further invasive and more time consuming treatment methods increased the length of stay in the Emergency Department.

It seems that owing to better controlling of epistaxis, shorter length of stay, and less ENT consultation and intervention, patient's satisfaction from treatment was significantly higher in nose clip group.

This study revealed that applying nose clips is a simple, but effective way in controlling epistaxis leading to time saving and reducing more invasive treatments.

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