Effectiveness of a nasal saline gel in the treatment of recurrent anterior epistaxis in anticoagulated patients

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Abstract

We believe that the use of cauterization in patients with anterior epistaxis in the absence of acute bleeding should be discouraged because it does not address the underlying cause and because it may even worsen the condition by extending the degree of mucosal disruption. This is especially true in patients who are receiving anticoagulation therapy. Therefore, we conducted a study to determine if the use of a nasal saline gel as monotherapy would be an effective alternative to invasive measures in treating recurrent epistaxis in anticoagulated patients. Our study group consisted of 74 patients—43 men and 31 women (mean age: 64.4 yr)—who had been seen in our department over an 18-month period and whose bleeding had originated in the anterior portion of the nasal vault. Most patients had been experiencing epistaxis for at least 6 months. Patients were given the saline nasal gel and taught to gently apply it to the mucosa of the anterior nasal vault with a cotton-tipped applicator at the first sign of recurrent bleeding. Patients were then followed up periodically over the next 3 months. Among the 74 patients, 69 (93.2%) had experienced a cessation of their epistaxis at 3 months. The results of our study suggest that this simple, painless technique has considerable value as a treatment option in this cohort of patients.

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Introduction

The vast majority of epistaxis cases occur at an anterior site of the nose. The predisposing factor in most of these cases is dehydration of the anterior nasal mucosa.[1] In clinical practice, anticoagulation significantly increases the prevalence of this condition and its recurrence. As more patients are being prescribed anticoagulation therapy for various cardiac and vascular conditions, the incidence of associated epistaxis is expected to rise.

Antiseptic creams have been studied as a sole therapeutic option for patients with anterior epistaxis.[2] We sought to extend these previous investigations to include the anticoagulated population and to study the role of a nasal saline gel as a means of avoiding invasive measures such as cauterization.[3] We believe that the use of cauterization in patients with anterior epistaxis in the absence of acute bleeding should be discouraged because it does not address the underlying cause and because it may even worsen the condition by extending the degree of mucosal disruption. The administration of anticoagulation in patients with disrupted mucosa further raises the risk of epistaxis. Therefore, any treatment strategy that avoids the use of cauterization and other invasive modalities may be beneficial for anticoagulated patients.

With that in mind, we conducted a study to determine if the use of a nasal saline gel as monotherapy would be effective in treating chronic epistaxis in anticoagulated patients.

Patients and methods

Our study group was drawn from among all anticoagulated patients with chronic epistaxis who had been treated by the senior author (D.M.) at the Department of Otolaryngology–Head and Neck Surgery at The Ohio State University Medical Center between July 1, 2006, and Dec. 31, 2007. In all, 74 patients—43 men and 31 women (mean age: 64.4 yr)—satisfied our inclusion and

exclusion criteria (table 1). Informed consent was obtained from all patients.

In addition to demographic data, information was collected on the duration of epistaxis, the most recent international normalized ratio (INR), and the reason for anticoagulation. Most patients had been experiencing epistaxis for at least 6 months, and the group's mean INR was 2.40. About half of the patients had been receiving anticoagulation therapy for a cardiac condition, and the rest for either peripheral vascular disease or pulmonary embolism (table 2). All patients underwent a detailed direct headlight and endoscopic examination with a 0° and 30° endoscope. Care was taken to identify any additional sites of bleeding other than the anterior nasal area.

Table 1. Study inclusion and exclusion criteria

Inclusion	Exclusion
• History of recurrent epistaxis	• Acute epistaxis at the time of presentation
• ≥1 episode of epistaxis during the preceding month	• Local treatment (cauterization, nasal packing) during the preceding month
• INR of 2.0 to 3.5	• Change in warfarin dose in the preceding month
• Anterior location of epistaxis	

All study patients were given a 0.5-oz (14.2-g) tube of saline nasal gel (Ayr Saline Nasal Gel; B.F. Ascher & Co.; Lenexa, Kans.), along with a list of pharmacies that stocked the gel. Patients then received instructions on how to put a generous portion of gel onto a cotton-tipped applicator and gently apply it to the mucosa of the anterior nasal vault. Patients were given a form to fill out on which they could detail any subsequent episodes of epistaxis over the next 3 months, and they were also given contact information in the event of persistent or severe bleeding.

Thereafter, all patients were either seen in person or contacted by telephone at 1 week, 1 month, and 3 months to determine the number of recurrent bleeding episodes.

Results

Among the 74 patients, 69 (93.2%) had experienced a cessation of their epistaxis at 3 months. The remaining 5 patients required cauterization in the office or operating room. Additional treatment was required for 3 of the 5 patients, including 1 man who underwent 5 additional cauterizations before his epistaxis ceased.

Discussion

The goal of this preliminary, uncontrolled study was to evaluate the efficacy of a nasal saline gel in preventing recurrent episodes in anticoagulated patients with chronic anterior epistaxis. As the population ages, the size of this cohort of patients will likely increase. The results of our study suggest that this simple, painless technique has considerable value as a treatment option.

As mentioned, the avoidance of cauterization in this population is advisable in the nonacute setting because any additional mucosal disruption will likely predispose to additional episodes of epistaxis if the underlying cause is not addressed. This was demonstrated in a previous study of antiseptic creams by Murthy et al.[3] Our findings mirror this previous work, which suggested that in the absence of nasal vestibulitis, the emollient properties of the antiseptic cream may reduce the local dehydration around the surface of the blood vessels and thereby reduce their predisposition to respiratory shearing trauma. Whether the use of a nasal saline gel offers any additional benefits over that of an antiseptic cream is probably not clinically significant at this time, although future studies might address this issue.

We were unable to reach any definitive conclusions about the effects of seasonal changes on epistaxis in our population because recurrences were seen evenly throughout the course of the year. Moreover, although we did not seek to study or record the effects of additional hydration procedures (e.g., home humidification and local saline lavage), we believe that these measures would likely have had an additive effect with regard to promoting hemostasis.

In conclusion, the nasal saline gel appeared to be an effective therapeutic agent in our cohort, allowing for a

Table 2. Study population characteristics (N = 74)

Variable	Value
Mean age, yr	64.4
Male/female, n (%)	43/31 (58.1/41.9)
Mean INR	2.40
Reason for anticoagulation, n (%)	
Cardiac condition	39 (52.7)
Peripheral vascular disease	27 (36.5)
Pulmonary embolism	8 (10.8)

decrease in the use of nasal cauterization. This treatment is a simple, painless, and cost-effective means of managing chronic anterior epistaxis in anticoagulated patients. Our patients were pleased with the comfort provided by the saline gel, which might have been attributable in part to the aloe vera that was used in its formulation. The nasal saline gel may serve as a single-agent management strategy for recurrent anterior epistaxis or in conjunction with nasal saline irrigation to hydrate the anterior nasal mucosa.

References

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