UNILATERAL ANTERIOR EPISTAXIS ELECTROCAUTERY VERSUS CHEMICAL CAUTERY

Adnan Saleem Umar, Zahid Mahmood Rahat*, Syed Shaukat Hussain*, Muhammad Zubair Khan*, Ghulam Fareed*

Combined Military Hospital Multan, *PNS Shifa Karachi

ABSTRACT

Objective: To evaluate and compare the two methods, electrocautery versus chemical cautery, for controlling unilateral anterior epistaxis and to identify the complications.

Design: Randomized control trial.

Place and Duration: This study was conducted in ENT Department PNS Shifa Hospital Karachi from August 2009 to June 2011.

Patients and Methods: Ninety two cases with unilateral anterior epistaxis were divided using random number trials into two groups i.e. group A and group B containing 46 cases each. In group A electrocautery and in group B chemical cautery with 50% silver nitrate was done and the results were compared.

Results: In this study 92 cases were divided randomly into two groups i.e. group A and group B containing 46 cases in each group. In group A 44 (95.6%) out of 46 cases were treated successfully with a single visit as an outpatient by electrocautery, the patients were called for follow up on the fifth day and then fortnightly for three months after the procedure, only 2 (4.3%) cases reported in first five days with mild recurrence of bleeding. In group B 42 (91.3%) cases out of 46 cases were treated successfully in a single visit and recurrence of bleeding occurred in 4 (8.7%) cases who required a second visit during the first five days .There were no major complications found in either group except few complaints of post cauterization pain and mucosal inflammation observed slightly more in group B patients.

Conclusion: Electrocautery and chemical cautery with 50% silver nitrate both are equally effective procedures to control anterior epistaxis if the bleeding point is visible and small. Both procedures are reliable and there are no major complications. Occasionally if the bleeding point in the anterior nasal septum is large then electrocautery may be a preferred option.

Keywords: Chemical cautery, Electrocautery, Epistaxis.

INTRODUCTION

Epistaxis or nose bleed is one of the most common occurrence in our daily practice and almost everyone has experienced nasal bleeding at least once in life. In most of the cases bleeding from the nose is usually mild but in few cases massive bleed can lead to death if not timely managed. Epistaxis can occur both from the anterior and posterior part of the nose but in various studies it has been observed that anterior epistaxis is more common[1]. Epistaxis has been reported to occur in about 60% of the population[2,3]. It has a bimodal distribution with incidence peaks at less than 10 years and more than 50 years. It appears to occur more in males as compared to females[4]. Anterior nasal bleeds usually occurs from the rich vascular anastomoses in the anterior part of the nasal septum called Kiesselbach plexus. Most causes of nasal bleeding can be readily identified by a detailed history and careful clinical examination. Local trauma, infection and systemic causes like hypertension and bleeding disorders should be considered in differential diagnosis[5]. Environmental factors such as humidity, dryness and allergens must also be considered. Often no cause of bleeding is found (idiopathic). Anterior epistaxis can usually be treated by application of direct pressure on septal area, vasoconstrictor nasal drops, chemical and electrocautery, anterior nasal packing for 2-3 days and nasal tampons.

Correspondence: Col Adnan Saleem Umar, Classified ENT Specialist, CMH Multan.
Email: @yahoo.com
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Modern electrocauterization is a process by which tissue is burnt using heat conduction from a metal probe heated by electric current. Many chemicals are also used to burn local tissue and are used in medicine frequently e.g silver nitrate, trichloroacetic acid etc. both electrocautery and chemical cautery are used to control bleeding from the nose[6]. This study is related to compare electrocautery and chemical cautery with 50% silver nitrate in controlling anterior epistaxis.

PATIENTS AND METHODS

This randomized controlled trial study was carried out in PNS Shifa Hospital Karachi from Aug 2009 to June 2011. A total of 92 cases of unilateral anterior epistaxis were randomly divided into two groups i.e. group A and group B using random number trial with 46 patients in each group respectively. All the cases included were above six years of age with unilateral anterior epistaxis without gender, racial and social discrimination. Patients having bleeding disorders, benign or malignant nasal growth, posterior nasal bleeding and bilateral nasal bleeding were excluded. On registering the patients, detailed history and careful clinical examination was done, the nose was packed initially with local lignocaine and the adrenaline pack for 5 min, electrocautery was done in group A patients and chemical cautery with 50% silver nitrate was done in group B patients. Local application of nasal antiseptic cream (polyfax) was advised in 4-5 days for both groups on cauterized point. Patients were followed up for three months, taking into consideration recurrence of bleeding and other complications like post cauterization pain, mucosal inflammation, septal perforation, hypersensitivity etc. Patients were advised to avoid nose picking and forceful blowing of the nose.

Results were analyzed using statistical software package SPSS 17. Descriptive statistics were used to describe the data, independent sample t-test was applied for the comparison of quantitative variables while chi-square test was used for the comparison of qualitative variables between the two groups. *p*-value <0.05 was considered as significant.

RESULTS

Ninety two cases were divided randomly into two groups i.e. group A and group B containing 46 cases in each group . In this study the average age of patients in group A was 28.67 years (SD=5.63) and in group B it was 30.21 years (SD=6.37) (*p*= 0.320). In group A there were 21

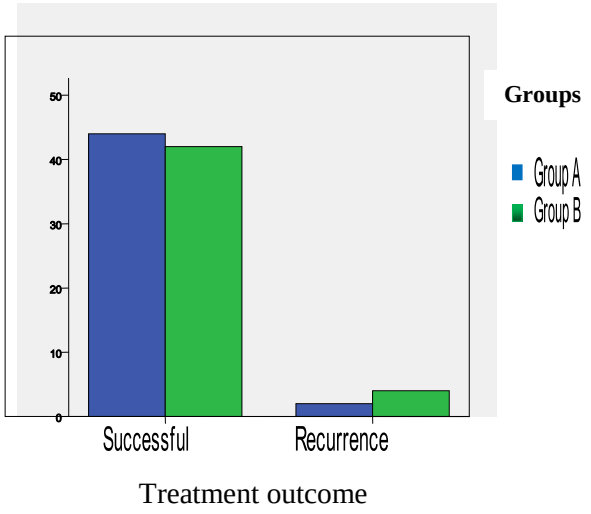

Figure-1: Comparison of treatment outcome between the electrocautery versus chemical cautery groups.

(46%) males while in group B there were 27 (59%) male (*p*= 0.403).

In group A 44 (95.6%) out of 46 cases were treated successfully with a single visit as an outpatient by electrocautery and then application of nasal antiseptic cream (polyfax), In group B 42 (91.3%) cases out of 46 cases were treated successfully with a single visit. The patients were called for follow up on the fifth day and then fortnightly for three months after the procedure. In group A however 2 (4.3%) cases reported in first five days with mild recurrence of bleeding but in group B recurrence of bleeding occurred in 4 (8.7%) cases who required a second visit during the first five days (*p=0. 338) (*fig 1). There were no major complications found in either group except few complaints of post cauterization pain and mucosal inflammation.

There were 15 (32.6%) cases of post cauterization pain and 6 (13%) cases of mucosal inflammation in group B and 11 (23.9%) cases of post cauterization pain and 3(6.5%) cases of mucosal inflammation in group A (p=0.290) (Fig-2).

DISCUSSION

Epistaxis is defined as acute hemorrhage from the nostril, nasal cavity, or nasopharynx and often causes significant anxiety in patients. However, the vast majority of patients who present to the emergency department with epistaxis may be successfully treated by an emergency physician. It occurs in almost 60% of the population at some stage in life. Anterior epistaxis is more common according to many studies. Epistaxis is a common presentation in emergency departments and ENT OPDs, patients usually do not seek medical attention for minor bleeds but in severe cases it may even lead to death if not timely managed[7]. The aims of epistaxis treatment are control of hemorrhage, prevention of cardiovascular and airway compromise, and determination of cause and source of bleeding. Epistaxis can be classified into anterior and posterior depending upon the site of bleeding, distinguishing anterior epistaxis from the posterior is important because therapeutic approaches differ[8]. In this study we selected patients with unilateral anterior epistaxis divided randomly into two groups A and B treated with electrocautery and chemical cautery with 50% silver nitrate respectively. Electrocauterization is a process by which tissue is burnt using heat conduction from a metal probe heated by electric current. Different chemicals are also used to burn local tissue e.g silver nitrate, trichloroacetic acid etc. Both electrocautery and chemical cautery are used to control bleeding from the nose. The results were analyzed considering the initial successful control of bleeding, recurrence of bleeding, and any other side effects or complications

In this study we found that both the procedures are effective in controlling bleeding from the anterior part of the nose, especially when the bleeding point is clearly visible. These results are also supported in other studies[4]. Although in our study the statistical difference between two groups is not significant enough in terms of controlling anterior epistaxis, however it was observed that the chance of recurrence of bleeding in chemical cautery is still a little more as compared to electrocautery, as 95.6% of the patients in group A were cured successfully in a single visit and only 4.3% had recurrence of

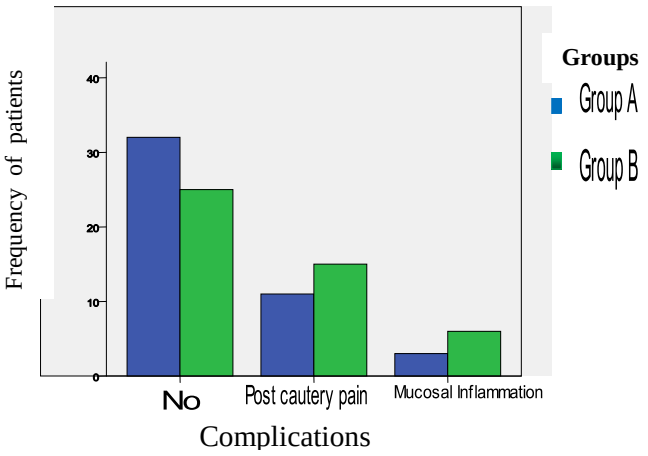

Figure-2: Comparison of complications between the electrocautery versus chemical cautery groups.

bleeding, whereas in group B 91.3% of the patients were cured, and 8.7% of the patients had recurrence of bleeding and had to come again for further treatment. We observed that the number of male patients was slightly more than the females.

It was found that in children chemical cautery with silver nitrate is more convenient as compared to electrocautery and effective also. Few patients of group B complained of slightly more post cautery pain and inflammation of the nasal mucosa as compared to group A patients, in one study it was observed that electrocautery may be preferred because in chemical cautery chemicals leak into surrounding tissue and cauterize outside the intended boundaries which may cause inflammation[9,10]. Other complications of silver nitrate application to septal cartilage

include hypersensitivity reactions[11], asymptomatic argyremia[12] and tattooing secondary to silver deposition within mucosa[13], however we did not find such complications. In this study we found that chemical cauterization is easy to perform as compared to electrocautery in which special equipment and better expertise is required, many other studies also support these observations[14]. In some studies it has been stated that to achieve hemostasis of a bleeding nasal septal vessel, only the mucosa requires cautery, nevertheless, the underlying perichondrium and septal cartilage are also affected by cauterization, which may result in septal perforation as in few studies it was found that nasal cautery was the causal factor in 7% of septal perforations especially in bilateral cauterization[15]. In this study on the other hand we did not find any complications like septal perforation in either group. In our study all cases of anterior epistaxis were unilateral but some studies support bilateral control of anterior epistaxis by cautery even in children without major complications like septal perforation etc[16].

CONCLUSION

Electrocautery and chemical cautery with 50% silver nitrate both are equally effective procedures to control anterior epistaxis if the bleeding point is visible and small. Both procedures are reliable, effective and there are no significant complications. Occasionally if the bleeding point in the anterior nasal septum is large then electrocautery may be a preferred option.

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