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Conservative management of epistaxis: Are we putting patients at risk of developing venous thromboembolic complications?*

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SUMMARY

A retrospective study of 1585 patients, admitted with epistaxis to a busy District General Hospital in the United Kingdom between 1990 and 2000, was undertaken in order to identify the relationship between hospital admission for epistaxis and the development of a venous thromboembolic event. Only one person (0.06%) developed pulmonary embolus (PE) within 6 weeks of hospital admission. No one developed a deep vein thrombosis (DVT). This compares with the incidence of DVT and fatal PE in the general population. In our study population, the incidence of both PE and DVT was found to be no greater than that seen within the community and certainly less than the incidence seen within a group of high risk hospitalised patients. We conclude that hospital admission for epistaxis does not place the patient at increased risk of thromboembolic disease.

Key words: epistaxis, deep vein thrombosis, pulmonary embolus

INTRODUCTION

Epistaxis is one of the most common otolaryngological emergencies requiring hospital admission [1]. It is typically managed conservatively usually with nasal packing, although subsequent intervention may be required for refractory cases. In our unit this increasingly involves endoscopic control of the epistaxis with or without septoplasty for access.

Bed rest and sedation remains an important aspect of the management of epistaxis irrespective of the treatment modalities. Often patients are advised to continue with bed rest for a few days after discharge. This is based on anecdotal evidence that bed rest combined with head elevation prevents tissue perfusion pressure thereby preventing reverse bleeding whilst clot organisation occurs. Immobilisation is well documented as being a significant risk factor in the development of thromboembolic complication especially in an elderly age group with co-existing cardio-pulmonary diseases [2]. In addition to bed rest for epistaxis, anticoagulant therapy is frequently withdrawn thereby increasing the risk of thromboembolic complications even further.

We are unaware of any previous quantification of the risk of thromboembolism in patients admitted to hospital with epistaxis. We present the result of such quantification in the form of a 10-year retrospective study.

METHODS

The hospital database was searched to determine the total number of patients admitted with epistaxis between Jan 1990 to Dec 2000. The database was also searched to determine the total number of patients admitted with DVT or PE. Case notes of patients whose names appeared in both groups (epistaxis and DVT/PE) were retrieved to identify those who were subsequently diagnosed with thromboembolic complications either during the primary admission for epistaxis or after discharge. In addition, sex, age, other risk factors for thromboembolic disease, number of days of primary admission, management of epistaxis employed and the interval between discharge and diagnosis for a DVT/PE were recorded. The authors accept that patients could have been admitted to another hospital with either DVT or PE, although for geographical reasons in our area this would be unlikely. Also, patients who developed a thromboembolic disease after 6 weeks of discharge were not considered to have developed thromboembolic disease from this admission.

RESULTS

In our search, 1585 patients were identified to have been admitted with epistaxis between 1990 and 2000. Only one patient, a 33-year-old male developed a pulmonary embolus within 6 weeks of admission. This occurred on the third day of

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Table 1. Details of our patients who developed DVT/PE after admission for epistaxis.

Age (Years)	Sex	Risk factor	No of days on admission	Treatment	Epistaxis-PE interval
72	F	Left lower lobectomy due to bronchiectasis	3	BIPP nasal packing	5 months
82	M	Atrial fibrillation, Left Ventricular thrombus	9 days first, 4 days second admission	Merocel nasal packing	6 months
74	F	Breast carcinoma with liver & lung metastasis, hypertension	4 days	Merocel nasal packing	8 months
70	M	LVF, COAD, Hypertension, Prostatic carcinoma	1	Silver nitrate cautery of Little's area	10 months
70	F	Nil	1	Silver nitrate cautery of Little's area	2 years
68	M	Nil	1	EUA nose	1 year
33	M	Nil	3	EUA nose & Diathermy	3 days

BIPP: Bismuth Iodoform Paraffin Paste
COAD: Chronic Obstructive Airway Disease
EUA: Evaluation Under Anaesthesia
LVF: Left Ventricular Failure

admission, 24 hours after having an examination of the nasal cavity under anaesthesia and diathermy of bleeding areas. This patient's epistaxis was secondary to nasal trauma. He had no other risk factors for his PE. Six other patients were identified as having developed either DVT and/or PE following admission for epistaxis; however, these all occurred 5 months to 2 years after discharge and were therefore considered unrelated (Table 1).

DISCUSSION

Pulmonary embolus, due to its sudden onset, unpredictable nature, and often fatal outcome, remains a major complication of surgical practice [3]. PE is estimated to occur in more than 500,000 patients each year with a 10 to 40% fatality rate [3]. Hospitalised patients are clearly at a higher risk of both DVT and PE due partly to a higher incidence of cardiovascular pathology than the general population and also as a result of illness-induced immobility. The incidence of thromboembolic events is similar in both sexes but it is lower in Asians compared to Caucasians and Africans [4]. Hughes reviewed 8648 patients in a four-month period in a district hospital in United Kingdom and found 102 were diagnosed as having thromboembolic diseases, 35 of which were nosocomial [5]. Although the incidence of thromboembolic diseases has been defined in specific surgical populations [2], little is known of its occurrence in patients admitted due to epistaxis.

The incidence of DVT/PE in our study population was compared with that in a general hospital population reported by Shabahang [2] and Hughes [5]. Based on our study, the chance of an epistaxis patients developing DVT/PE is about 0.06% whereas this risk for general surgical patients, non-surgical patients and general hospital population is 0.24%, 0.30% and 0.40% respectively (Table 2).

As previously mentioned, bed rest, which is an integral part of the management of patients with epistaxis is a defined risk factor for thromboembolic diseases. In addition to this, sedation

Table 2. Incidence of DVT/PE in admitted epistaxis patients, general surgical patients and non-surgical patients and general hospital patients.

	Epistaxis patients (Our study)	General Surgical patients (Shabahang et al)	Non-Surgical patients (Shabahang et al)	General Hospital Population (Hughes et al)
No PE/DVT	1584	24,939	35,890	8613
PE/DVT	1 (0.06%)	61 (0.24%)	110 (0.30%)	35 (0.40%)
Total	1585	25,000	36,000	8648

Table 3. Pulmonary Embolism Risk Factor Scoring System (Shabahang, 1994).
(0-4 = Low risk, 5-7 = intermediate risk, > 8 = High risk)

Risk factor		Score
1. History of DVT or PE	None	0
	Suspected	1
	Proven	2
	Multiple	0
2. Immobility	None	0
	1-3 days	1
	>3 days	2
3. Operative state	Local	0
	General / regional	
	<45 min	1
	>45 min	2
	Major (> 3 hours)	3
4. Age	<40 years	0
	40-70 years	1
	>70 years	2
5. Malignancy	None	0
	Adenocarcinoma	1
	Extensive regional tumour	2
	Metastatic	3
6. Cardiac status	NYHA* I	0
	NYHA II	1
	NYHA III	2
	NYHA IV	3
7. Obesity	<175% ideal body weight	0
	>175% ideal body weight	1
8. Limb trauma	None	0
	Soft tissue injury	1
	Fracture tibia/fibula	2
	Fracture femur	3
	Fracture hip/pelvis	4
9. Thrombotic state	None suspected	0
	Suspected	1
	Proven, treated	2
	Proven, untreated	3
10. Endocrine state	None	0
	Hormonal therapy	1
	Pregnant/postpartum	2

*NYHA: New York Heart Association

is often employed to decrease the discomfort of nasal packing. Unless adequate fluid intake (orally or parenterally) is undertaken, dehydration will be inevitable resulting in an increased haematocrit and tendency to thrombosis. Further more, in contrast to the initial anticoagulation proposed to surgical patients, patients already on anticoagulant for pre-existing hypercoagulation conditions have their medications reduced or omitted in an attempt to optimise haemostasis. These specific factors, combined with the fact that it is a generally elderly population that become hospitalised with epistaxis, would lead one to expect an increased risk of thromboembolic diseases in these patients.

The typical hospitalised epistaxis patient fulfils a number of risk factor for thromboembolic condition (Table 3) [2]. Hereditary risk factors include the factor V Leiden mutation, the G20210A prothrombin gene mutation and deficiencies of protein C, protein S and antithrobmin. Acquired risk factors include malignancy, hospitalisation, surgery, venous trauma, immobilization, estrogen therapy, pregnancy and the antiphospholipid antibodies [5]. Although similar retrospective studies in acute haemorrhagic stroke patients have shown higher prevalence and risk of DVT compared to thromboembolic stroke patients [6], our result showed that the incidence of thromboembolic diseases identified in our epistaxis population is much less than that seen in a general population of hospital patients and a high-risk group of surgical patients.

We acknowledge the limitations of our study: It is possible that the patients with complications of DVT/PE were admitted to other hospitals; however, considering the catchment area of our hospital and also the nature of National Health Service in the UK, this is less likely. We also made sure each individual's thromboembolic risk profile had been recorded by checking the hospital notes for any previous medical problem; it is quite possible that the patients might have had some undiagnosed risk factors at the time of the admission to our unit.

Based on the result of our study, we conclude that there is no increased thromboembolic risk for patients admitted with epistaxis.

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