CHANGING PATTERN OF EPISTAXIS DURING THE PAST 45 YEARS

A STATISTICAL INVESTIGATION OF 4,473 CASES AND A CRITICAL REVIEW OF THE LAST 1,000 CASES*

BY

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Though epistaxis is a rather time-worn matter for discourse it is of considerable importance, and I hope to show its changing pattern under present-day conditions. It is impossible here to cover adequately all the ground pertaining to epistaxis, and my remarks are limited to some of the more salient features which have emerged from my analysis of a series of cases.

Present Series

I have taken for a critical review 1,000 cases of epistaxis referred to my department at the Royal Infirmary, Edinburgh, during the past five years. In order to obtain a more comprehensive record the department's complete figures

FIG. 1.—Number of out-patients with epistaxis.

FIG. 2.—Number of epistaxis cases admitted to hospital.

Causes of Increase

What can we deduce from these figures? The two main possibilities are either that epistaxis is on the increase or that

*Read in the Section of Oto-rhino-laryngology at the Annual Meeting of the British Medical Association, Newcastle upon Tyne, 1957.

cases are now being referred to hospital which in the past were treated at home. That the incidence of epistaxis is becoming more common is confirmed by the steadily increasing number of cases attending hospital; but it must be considered carefully whether this is a real or a false conclusion, and, if real, then what factors are at work which would produce it? Is the rate at which we now live a possible cause? No one will deny that worries and uncertainties have increased and are still increasing, despite higher standards of living for the masses, or because of their growing responsibilities and the relative fall in the standards of life for other sections of the community. Another factor may be the greater expectation of life and the fact that age is outrunning the normal wear and tear of the body tissues; the ages of those admitted to hospital would certainly lend some support to this. The increase of cardiovascular conditions may also contribute to the growing incidence of epistaxis. Cigarette smoking does not have much effect in this respect, but the ever-increasing habit of blowing smoke down the nose makes for a dry and congested nasal mucosa and therefore creates a condition in which nose bleeding is more likely to occur. The local application of decongestive nasal medicaments which are so popular and fashionable may in the course of time and with frequent abuse have a decidedly injurious effect on the nasal mucosa, causing chronic congestion and having a paralysing effect on the ciliary action with consequent proneness to bleeding.

The other possibility, that more cases are being referred to hospital, is the more likely one. The greatest increase in the hospital incidence occurred after the inception of the National Health Service. Frankly, epistaxis can be a considerable nuisance to the practitioner, and often is time-consuming. He never knows when he will be called out to deal with a case, and an enforced sudden absence just when he has embarked on a particularly long consulting session might result in a condition approaching chaos. Some hold that these cases are more efficiently dealt with in hospital, and that, in any event, they would probably have to attend there in the immediate future for cauterization of the bleeding area, so why waste time? Others deal with the epistaxis and then leave a letter addressed to the hospital with instructions to the patient that if the bleeding continues he is to report to hospital with the letter. This seems a more satisfactory line of treatment. The patient's point of view might be summed up by a portion of a letter written to the *Edinburgh Evening News* (April 11, 1957, p. 8): "Since the present Health Scheme came into force, I have noticed a distinct falling off in the interest shown to the patient by the average G.P., who now seems to consider his surgery a clearing station for the hospitals, etc." Taken all in all, there appears to be a tendency nowadays and under the present conditions in practice to refer to hospital more cases of epistaxis, and only the minority of cases are dealt with in the home. So long as practitioners are paid according to numbers of patients and not for their medical skill and art there is little incentive for the latter, and this attitude of *laissez-faire* must be accepted.

Social Strata and Locality

The social status of those attending hospital has altered little throughout the years. In the present series the patients were made up of 30.8% manual workers, 22.3% black-coated workers, 21.3% housewives, 11.9% retired persons, and 13.7% children. It may be assumed that manual and heavy industrial workers would be more prone to epistaxis because of the physical effort entailed in their labours, and they form the largest group. Housewives, however, are high on the list, and they ought to be considered in the group of manual workers. An additional factor in this latter group may be the almost permanent anxiety state from constantly rising living expenses and that very doubtful blessing "hire purchase." In regard to children, epistaxis in the past has often been associated with the presence of tonsils and adenoids, and the figures shown would seem to support this, as 39% of this group had been operated upon for tonsils and adenoids, while 61% still had their tonsils and adenoids intact.

Another factor that emerged was the locality from which these patients were drawn: 68.8% lived within the boundaries of Edinburgh, while 31.2% were sent from rural areas. One would expect a larger percentage to be admitted from a more densely populated area, but, on the other hand, remembering the great increase of patients in recent years it is tempting to think that hospitals are used because of their proximity. Maybe the country practitioner has more time to deal with his cases and delays sending them immediately to hospital; but this is dangerous ground, and it is safer not to pursue such theories.

Aetiology

The cause of the epistaxis was definitely ascertained in 383 cases. When a case is admitted to hospital without a previous medical history it is sometimes difficult to discover the true cause for the bleeding. In 219 cases the patients suffered from hypertension—this is probably an underestimate, for it is impossible to assess the usual blood pressure of a patient who has suffered a severe blood loss. The blood pressure of all patients admitted to the ward is, of course, taken as a routine, along with an estimate of their haemoglobin and in many cases a complete blood-cell examination. Trauma of the nose accounted for only 19 cases, which is somewhat surprising, while in 116 cases there were other local nasal causes. These latter cases were associated mainly with atrophic rhinitis, acute coryza, sinusitis, perforation of nasal septum, nasal polypi, and tonsils and adenoids. Among 25 cases which occurred during a systemic disease, cardiac and blood conditions formed the bulk. Four cases arose during normal pregnancy, and in this connexion should be mentioned the work of Karpow (1929), who established through animal experiments that the inferior turbinate contained a substance which had a specific action on the nerve-muscle system of the uterus. Such an action may possibly be reversible—for example, rhinorrhoea as a symptom in premenstrual tension states—and might explain the occurrence of epistaxis in those cases.

Age Incidence.—The greatest number occurred in age group 11–20 years (25.6%), while the next highest was between the ages of 61 and 70 (15.9%).

Sex Ratio.—The male sex predominated, but not to such a marked extent as one would think. The figures were 57.2% males and 42.8% females.

Previous History.—Of the cases under review 38.9% were seen during their first attack and 61.1% had had previous bleedings. Only two cases gave a family history of epistaxis.

Site of Bleeding.—In 82.5% the haemorrhage was located on the anterior part of the septum from the usual site known as Little's area. In 17.5% the bleeding occurred either from the anterior or middle turbinates or from an area farther back in the nose.

Degree of Bleeding

The severity of the bleeding may be judged from the number of patients who required admission to hospital: of the 1,000 cases, 19.2% were admitted to the wards (roughly 1 in 5). The total number of admissions in the last 45 years was 521, and 319 of them were admitted during the period of the National Health Service (practically 60%). It has always been the practice to admit severe cases of epistaxis, and the marked rise in the admission rate in recent years is one argument in favour of the possibility that epistaxis is becoming more common. Another important factor is the age of the patients admitted. It was ascertained that most of the males were aged 50–70 years and most of the females 60–80 years. They constituted 60.7% and 56% respectively of the 319 cases admitted since the inauguration of the N.H.S. Many of the older patients lived alone; some were looked after by an equally old or infirm partner, and others by intolerant and disinterested relatives who were either incapable or unwilling to undertake responsibility.

On the other hand, one would suppose that more of the admitted cases would be treated at home because of the convenience of domiciliary treatment and its freedom from per-

sonal expense to the patient. In the past, when the patient had to pay for such services, a specialist was often called on to help arrest a nose-bleed in the home, but the number of such calls has gradually dwindled so that specialists are now rarely called out. It is fortunate that we live in the antibiotic era, as these admissions would have put a very severe burden on the bed accommodation were it not for the balancing factor of a proportionate decrease, thanks to modern methods of treatment, in the admission of cases of acute infections.

Treatment

It is of interest to assess the effectiveness and the rationale of the methods of treating epistaxis used in the past. One of the earliest that I have come across was the one devised by William Buchan (1769). He started in life by studying divinity at Edinburgh University, but gave up this calling for the more lucrative one of medicine. He described his treatment of epistaxis in the following words: "If the genitals be immersed for some time in cold water, it will generally stop a bleeding of the nose," and went on to say, "*I have seldom known this fail.*" I have no experience of this form of treatment, but have no doubt that it proved efficacious. What was the rationale for this success? It certainly had a scientific basis, and we are indebted to Spiesman (1933) for an explanation. He found that when a circumscribed cold stimulus was applied to the skin it caused a lowering of the temperature of the nasal mucous membrane with a consequent vasoconstriction, and that would certainly help to explain the good results obtained by Buchan.

In my young days it was the custom to place a large cold metal key (generally the front-door key, which in those days was of considerable size) on the nape of the neck in order to deal with a nose-bleed. It was a household remedy and enjoyed a measure of success. The cold metal was presumably placed over the cervical sympathetic ganglion in the neck, thereby inducing, by its thermal stimulation of the pressor fibres, a vasoconstrictive action on the nasal vessels. There were other methods, too numerous to mention here; but these pioneers did undoubtedly get their results, although from the scientific point of view they reaped but did not sow.

Modern treatments of epistaxis are many and diverse. Let us first consider the case which is actively bleeding. My early impressions of such cases (and many of us must have encountered similar circumstances) were of the patient slumped in his bed with a blood-stained bath towel draped round his neck and shoulders, or with his head dependent over the side coughing and spluttering blood into some homely receptacle. The room was probably packed with anxious members of his family ably assisted by neighbourly neighbours, all doing their best to help and give advice, and the scene would not be complete if one omitted the old crone sitting in her corner oftly repeating that she "smelt death." Copious and frequent libations from a bottle of brandy or some other spirit were pressed on the patient to keep his strength up, along with exhortations to fight the good fight, and at times the set-up might resemble Dante's inferno.

The first act in treatment is to clear the room of relatives and all helpers, open the window, sit the patient up, and instruct him to blow his nose vigorously in order to expel all the blood clots. If convenient a very hot or ice-cold saline douche, given by means of a Higginson syringe, is more satisfactory for the expulsion of the clots, and this will often stop the bleeding. He is then instructed to inhale through his nose and to exhale through the mouth. If sufficient time is allowed for this the bleeding often stops spontaneously, possibly from the vasoconstrictive action of the cold air, but should the bleeding continue unabated some form of pressure on the bleeding-point must be exerted. It is useful first to spray the nose with a 5% solution of cocaine, as this makes it so much easier both for the patient and for the operator. A useful gadget for this is a Rose-Cooper inflatable rubber bag, or, if such is not available, an ordinary finger-stall attached firmly at its open end

to the beak of a rubber catheter so that it is airtight. After introduction into the nose the lubricated bag is inflated and the inlet tube clamped. In most cases this effectively deals with the haemorrhage. Selvedged ribbon gauze, 1 in. (2.5 cm.) wide, is often employed for packing purposes, and some 3 to 4 ft. (900 to 1,200 cm.) can be contained in each nasal cavity. It should be soaked in a haemostatic such as hydrogen peroxide and then firmly wrung out, as an excess of H_2O_2 can be very messy. Posterior packing is rarely necessary, and if employed a penicillin cover should always be given.

If the bleeding is not severe but is more of an ooze a suitable pack is provided by oxidized cellulose. This, besides having haemostatic properties, swells with moisture so that, apart from its initial pressure on the bleeding area, it develops even more pressure shortly after being placed in the nose. Also, in cases of this type fibrin foam soaked in liquid thrombin (500 units of thrombin in 5 ml. of diluent isotonic saline) has proved of great value. Of course there are other medicated materials of which good use can be made, but they are too numerous to mention here.

In general, cauterization gives disappointing results in an active epistaxis, although if one single bleeding-point is seen this treatment often gives decisive results. It is used more often for those cases which constantly recur, and which are a nuisance to the patient, than for actual blood loss.

Thermal cauterization is extremely satisfactory provided a dull red heat is used. The bleeding area is first ringed by the cautery point and then the actual vessels are coagulated under light pressure of the cautery. If the pressure is too firm bleeding may ensue and too much of the vessel-bed tissue be destroyed, with the possibility of destruction of the coating of the septal cartilage and a consequent perforation.

Instead of heat cauterization the vessels may be sealed off by the application of some form of caustic. A fused bead of chromic acid gives excellent results provided care is taken to pack off the surrounding tissues with cotton-wool so that the flow of mucus cannot carry the chromic acid to other parts of the nose. I have seen cases where the chromic acid was carried into the pharynx. Crystals of trichloroacetic acid are extremely brittle and liable to fragmentation, so that this substance should never be employed as a cauterizing agent. A stick of silver nitrate is handy and convenient for chemical cauterization, and can be used without any previous preparation.

Thirty cases were treated by deep x-ray therapy, and this method has proved its worth in very severe cases of epistaxis that were difficult to control with ordinary methods and likely to endanger life (Stewart and Sammon, 1954). The bleeding was generally controlled completely within 48 hours of starting treatment. The dosage was a minimum central dose of 2,000 r in one week, comprising five daily treatments to each directly opposed field of 6 by 6 cm., which included the central nasal cavity. In only 13 cases was blood transfusion considered necessary to compensate extreme loss of blood.

It has been stated elsewhere that ligation of the external carotid artery has had to be undertaken in order to control bleeding and to save life; but in no case in the present series was such a heroic form of treatment carried out, and one can only think that in such circumstances an operator had been stampeded into doing what must be considered an unnecessary and uncalled-for procedure.

Finally, it is imperative that the patient who is weak through loss of blood, and consequently more than ever nervous of himself, should be given a sedative; the one recommended for this is morphine by injection, which not only has its usual action but also appears to exert some influence on the cessation of the bleeding. It is no good using amounts which have only an exciting effect; it is important to give good measure, and I recommend $\frac{1}{2}$ -gr. (30-mg.) doses for an adult, which may be repeated.

In an analysis of the treatment carried out in the present series of 1,000 cases 78.2% were dealt with by some form

of cauterization, 18.8% required to have the nose packed, and 3% were treated by deep x-ray local irradiation.

No deaths directly due to epistaxis *per se* are recorded in this series of 1,000 cases.

Summary

A thousand cases of epistaxis seen during the last five years at the E.N.T. department of the Royal Infirmary, Edinburgh, are critically reviewed, and the 4,473 cases of epistaxis treated in the department over the last 45 years are analysed statistically.

Almost half the number of cases have occurred since the inception of the National Health Service.

Two possibilities arise: that epistaxis is on the increase, and that more cases are now being referred to hospital.

Domiciliary treatment is not being fully utilized so as to lighten the burden of hospital bed accommodation.

Treatment, both present and in the past, is commented upon. Most cases (78.2%) were relieved by some form of cauterization.

No deaths due to epistaxis occurred in the series reviewed.

I am indebted to Dr. J. H. Campbell for the immense amount of time and trouble he has taken in the preparation of the material for this paper

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COLLEGE OF GENERAL PRACTITIONERS

The fifth annual general meeting of the College of General Practitioners was held at B.M.A. House on November 16. Some 200 members and associates attended. Earlier in the day Dr. D. M. HUGHES, of St. Clears, Carmarthen, had delivered the College's fourth James Mackenzie lecture.

ANNUAL MEETING

With the president of the College, Dr. I. D. GRANT, in the chair, Dr. F. M. ROSE, chairman of council, presented the annual report. He described the year's expansion. More than 700 new members and associates had been enrolled, bringing the total membership to over 4,500. Three new overseas faculties had been founded—in Victoria (Melbourne), in Tasmania (Hobart), and in New Zealand (Wellington). There were now 35 faculties in all, 13 of them overseas. A New Zealand council had been formed to co-ordinate the work of the faculties there, as did the Australian council so successfully with the five faculties in that country. The New South Wales faculty had made a special contribution to undergraduate education by arranging for students to visit general-practitioner hospitals, for week-end student-attachment to doctors' practices, for students to visit patients' homes with district nurses, and for residential vacation-training of students at 17 general-practitioner country hospitals, all the vacancies for which had been booked a year in advance. With 610 members and associates in Australia the time was approaching for the foundation of an autonomous Australian College of General Practitioners. As its parent, the College in Britain would wish it well. The College's Scottish council had submitted evidence to the committee of the Scottish Health Services Council inquiring into the provision of maternity services in Scotland, and it had been invited by the Scottish council of the B.M.A. to nominate a member to that body.

The College owed much to the boards of its faculties, many of which were publishing their own faculty journals. The obstetric survey of the South-west England faculty—