Extranasal treatment of epistaxis

G. H. Drumheller, Everett, U.S.A.

WHAT can be done for the adult patient with a nosebleed other than pressure, packing, chemical or electrocautery, or ligation? This paper precludes an infectious, neoplastic, or abnormal bleeding factor as the etiology and is directed toward the severe, trouble-some, posterior nasal bleeder.

Anxiety and apprehension are conducive to an increase in heart rate and an elevation of blood pressure. The sight of blood and the irritation of the hypopharyngeal and laryngeal reflexes with the sensation of choking stimulates an increase in the Anxiety-Apprehension quotient due to the fear of imminent death. Interruption of this cycle which results in persistant bleeding must be accomplished as soon as possible.

On admission to the Emergency Room the patient is suctioned and placed on a bed or table with the head elevated 30 degrees. An anterior pack will convert a nosebleed into a throat bleed and the patients are usually more adept at handling the blood from one orifice. This tends to assure the patient that something is being done. The packing is moistened with epinephrin 1 : 1000 and pontocaine 2% which gives some shrinkage, anaesthesia, and vasoconstriction.
The blood pressure and pulse rate should be taken and recorded. The age and weight influence the amount of drugs which are used but on an average the posterior bleeder is an adult who is middle aged, or older, hypertensive, obese, and may be complicated with systemic disease such as diabetes, thyroid imbalance arteriosclerosis, or other metabolic imbalance.
For many years routine orders for adults were:

1. Morphine gr ¼ (15 mg) Stat
2. Morphine gr ¼ q3h prn for bleeding
3. Phenobarbital gr ss qid
4. Phenergan 25 mg bid
5. Ice collar
6. Elevate head of bed 30 degrees
7. CBC, urinalysis, SMA-12
8. Adrenosen Amp T bid
9. Vit. K, 75 mg., and Vit. C, 500 mg., IV, bid

Paper read at the 20th Annual Meeting of the American Rhinologic Society, Dallas, October 1974

10. Tuinal gr 111 HS
11. Cepacol mouthwash qid
12. Sparine 25 mg, q3h, prn for sneezing
13. Bathroom privileges
14. Monitor the pulse frequently
15. Record BP, tid
16. Low calorie and/or sodium diet
17. O_2 5L/min. p.r.n.

A large percentage of patients treated in this manner required postnasal plugs and extensive nasal packing. With the advent of the improved anti-hypertensive drugs we added to the orders:

17. Hydropres, 50 mg., Stat
18. Hydropres, 25 mg., bid

This addition drastically reduced the requirement for post-nasal plugs over 90%. The amount of hydropres given was individualized and utilized to give the patient a relative hypotension.

The anesthesia department was occasionally called to block the discomfort and consciousness of the insertion of the P-N plug and nasal packing. It was noted that the bleeding would frequently rapidly diminish on the use of Innovar.

Innovar is a combination of two drugs, Fentanyl 0.05 mg (Sublimaze) and Droperidol 2.5 mg (Inapsine). Together they may be used to induce neuroleptoanalgesia.

Droperidol 2.5 mg (Inapsine) is a major tranquilizer with potent neuroleptic activity. It is an antiemetic which is very desirable in these cases and it produces hypotension and decreased vascular resistance. It is particularly effective in decreasing the pulmonary arterial pressure when it is abnormally high.

Fentanyl 0.05 mg (Sublimaze) is a narcotic analgesic with the advantages of rapid onset and short duration. It is similar to morphine and has the same effect with 1/150 the dosage, except it does not cause emesis. 0.1 mg (2.0 cc) of Sublimaze is the equivalent of 10 mg of Morphine or 75 mg of Meperidine and histamine release rarely occurs.

For well over a year we have eliminated the narcotics from the routine epistaxis orders and have instead used Innovar.

An IV of 1000 cc of 5% glucose should be started and an IV push of 1 cc of Innovar given directly over 5 minutes. A second cc of Innovar IV push should be used in the next 5 minutes if the first dose does not adequately affect the patient. Then 5 cc of Innovar should be added to the 1000 cc of glucose and a slow drip used to maintain the effect of the Innovar. Thus the patient may have his tolerance and response to Innovar calibrated.

Vitamin C, 500 mg., and Vitamin K, 75 mg., are also slowly added to the 1000 cc of glucose. The blood pressure and pulse are closely observed and usually the post nasal bleeding will cease or be reduced to a bloody serous exudate. Nasal

packing is used as necessary. In 34 years as a practicing rhinologist, I have not been required to ligate a vessel except for malignancy.
The patient is hospitalized and the 30 degree elevation of the head maintained and an ice collar is placed on the neck. A low salt and low caloric diet are used when indicated and bathroom privileges are permitted carrying the IV and slowing the drip briefly.

Among the adverse effects of Innovar are cardiovascular collapse and having the IV fluids established reduces the hazards, and aids in initiating countermeasures. Since respiratory depression may occur, appropriate patient surveillance must be maintained and resusitative equipment needs to be available.
Neuromuscular apnea may be reversed with a narcotic antagonist such as Narcan. It must be remembered that Innovar potentiates other narcotics and a severe respiratory depression may result.
Narcan is Naloxone HC1 0.4 mg/cc and being a narcotic antagonist reverses most of the effects of Fentanyl with a 1 cc dose IV.
Utilizing 1 cc of Innovar to 100 cc of normal Saline or 5% glucose and water, with a slow drip, has been safe and we have not seen any of the adverse effects as of this writing. The slow drip of Innovar controls blood pressure, apprehension, anxiety, and bleeding with the ability to titrate and individualize dosage.
As the hypertension returns on withdrawal of the Innovar, in most cases it is mandatory that long term treatment and observation be instituted. About 20% of all North American adults have increased arterial blood pressure and the percentage is much higher in cases of posterior epistaxis. Pheochromocytoma, primarily aldosteronïsm, renal artery stenosis and other renal diseases are usually not present but must be considered.

Mild cases may become normotensive with weight loss, salt restriction and sedation. Drugs are utilized for pressure reduction in more severe cases and help to prevent long range complications.
Medical consultants recommend a diuretic initially unless there is a specific contraindication. Thiazide diuretics will usually lower the blood pressure in three or four days about 10-15 mm Hg mean pressure. Sulfonamide diuretics are similar pharmacologically. Reduced potassium stores may sensitize the heart to the effect of digitalis but other complications of long range thiazide therapy rarely occur in patients on a diet which is adequate in potassium.
The Aldosterone antagonist, *Spironolactone,* (Aldactone) is a potassium retaining diuretic and is an alternative to the thiazide diuretics. Increased serum potassium may be dangerous in those cases with impaired renal function.

Hydralazine and the non-diuretic thiazide *Diazoxide* (Hyperstat) reduces hypertension by selective precapillary vasodilation. They may cause tachycardia and increased cardiac output, which may be harmful in the presence of heart disease.

Propranolol (Inderal) acts on the sympathetic nervous system by blocking B-adrenergic receptors and produce slow relatively balanced reductions in elevated systolic and diastolic pressures. It also reduces plasma renin activity and is very

effective in patients with normal or high plasma renin levels. Pre-existing myocardial failure makes Inderal hazardous.

Reserpine and other rauwolfia alkaloids deplete tissue stores of catecholamines and serotonia including those in the central nervous system. It is contraindicated in cases with depression, causes nasal stuffiness and is usually less effective than a diuretic.

Guanthidine (Ismelin) inhibits release of norepinephrine by the sympathetic nervous system. Cardiac output is usually lowered and systolic pressure is reduced considerably more than diastolic pressure. Both recumbent and erect blood pressures must be considered in adjusting the dose due to postural hypotension. Ismelin is usually reserved for refractory hypertensive cases.

Methyldopa (Aldomet) is thought to lower pressure due to the action of a false transmitter, a-methylnorepinephrine, and also lowers plasma renin activity. Sedation and lethargy may be disabling but psychic depression is less frequent with Reserpine.

Several drugs may be required for the effective treatment of hypertension and combination drugs are available. *) Dosage should first be adjusted with separate drugs. The help of the medical consultant is indispensible in the long range management of extranasal treatment of epistaxis.

*) Hydropres (HydroDIURIL & reserpine)

George H. Drumheller, M. D.
1515 Pacific
Everett, WA, 98201
U.S.A.