Streamlined Office Otolaryngology

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Introduction

This manual is designed for the primary care physician who has not had recent additional training in Otolaryngology. Medical students and others may find it helpful.

The questions primary care physicians ask otolaryngologists have changed over the years. Managed care practice has returned responsibility to the Primary Care physician for solving problems that previously migrated to the specialists office. The speed of that return often uncovers deficiencies in Primary Care specialty training experience. This work hopes to help fill the gap in otolaryngologic training.

The first and main part of the manual is an outline of clinical management strategies for Primary Care Otolaryngology. This is first place to look for help. Management of these problems fits well in the context of the primary care practice. Indeed, in most cases, the primary care physician is the manager of choice for these conditions because of the superior doctor-patient rapport. Marginal notations are provided to indicate:

* a difficult problem made simple.

** a particularly cost effective way to approach a situation.

*** an indication of where a specialist might be especially helpful.

The topics were selected by ranking problems by frequency referred to a general otolaryngology practice. The practice is located in a sophisticated medical community in a small city with typical American demographics. They echo the pattern reported in the pioneering work of Fry which showed at least one third of the new problems presenting in a primary care setting are otolarygologic.

This manual is neither all inclusive, nor does it represent or propose a standard of care for any community. The treatment regimens are in current use in one private practice. Other plans have been devised elsewhere which are equally valid.

I have used the masculine "he" throughout for literary convenience. No offence is

intended!

Appendix 1 reviews special principles which apply to surgery in the head and neck.

Appendix 2 is a "How to ..." section which provides details on the more common and important procedures mentioned in the basic outline.

Appendix 3 is a "What to say ..." Models for detailed patient instructions for the most common problems sent for otolaryngology evaluation are provided. They may be copied for use in the primary care setting.

N.J.H.

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Appendix 1. Surgical Principles Applicable to the Head & Neck

Appendix 2. How to ...

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Chapter 1

Common Ear Problems

Ear Canal

Itchy Ears

Background

1. Itching in the ear is usually a symptom of otitis externa. Otitis externa is caused by:

    a) abrasion of wet ears by cotton swabs as part of hygiene regimen

    b) secondary contamination from ruptured otitis media

    c) topical sensitization to ear drops

    d) local manifestation of general dermatitis (psoriasis, eczema, seborrhea).

Management

1. prevention: Teach patients never to clean ears. They may dry their ears with a hair dryer or alcohol drops - never with cotton swab!

2. acute pain and itching: see "Ear Pain", below

3. chronic itching: see prevention above, as well as "Otitis Externa Instructions" in Appendix 3

Use topical steroid lotions (Valisone lotion) as ear drops q.o.d. to establish initial control of itching. Systemic steroids help in severe cases.

Foreign Bodies and Wax

Background

1. If it isn't a live insect, it isn't an emergency!

2. The best way to remove a foreign body is by irrigation with water at body temperature.

    a) Use a 60 cc syringe with a cut off #14 intracath tip about 2 cm in length as a nozzle.

b) Afterwards, dry the ear with alcohol, or a hair dryer.

c) Don't start irrigating a vegetal foreign body in the afternoon. Wait until the following morning. This prevents late night O.R. visits because the foreign body swells and becomes an emergency.

3. Remind patient that the ear is self cleaning, and needs no care (see Appendix 3, "Otitis Externa Instructions").

Hearing Loss

Background

1. To properly direct the patient, you must distinguish between two kinds of hearing loss, conductive and sensorineural, before beginning treatment.

2. In the first years of life, nerve loss threatens language aquisition, causes speech delay, and when severe, constitutes an educational emergency!

3. Sensorineural loss in the elderly contributes to sensory deprivation and magnifies the effects of dementia.

Causes of conductive loss in adults:

1. blockage of the canal by wax or foreign body

2. damage to the tympanic membrane

3. ankylosis or necrosis of the of the middle ear ossicles

4. welder's slag burns (occupational)

5. patulous (abnormally open) eustachian tube, suggesting:

a) rapid weight loss

b) pregnancy, or

c) birth control regimen

6. serous otitis, in adults suggesting:

a) nasopharyngitis, infectious or allergic

b) barometric effects (flying or SCUBA diving)

c) tumor in the eustachian tube fold (fossa of Rosenmuller)

Causes of conductive losses in children:

1. serous otitis, acute or chronic

2. foreign body

3. atelectasis of eardrum.

Evaluation

History

Conductive:

Patient complains about "blocked", "stuffed", "like in airplane"

1. abnormal drum or ear canal usually apparent on physical examination

2. acts like an ear plug, with little effect on comprehension

Sensorineural:

Reported as "others complain about my hearing", "others mumble", "need them to repeat"

On examination:

1. drum appears normal on physical examination

2. impairs the loudness balance among different tones and the perception of how loud sounds seem to be growing compared to how loud sound really has increased

3. distortion as well as loss, hearing becomes inaccurate

4. usually first affects frequencies above 2,000 Hz, which code the consonants

5. In noisy situations, accuracy for understanding speech is especially diminished.

6. The person affected has no awareness of the distortion.

7. socially destructive because the difficulty is usually projected onto the speaker by the impaired listener

8. most such losses result from a mixture of inherited tendencies plus cumulative damage from environmental noise

Testing the Ear

Tuning Forks: screen with 128 or lower to separate conductive from nerve loss. Air conduction will be louder than bone in normal and sensorineural hearing loss (see Appendix 2, "Tuning Forks", below)

Audiometry: Beware of deaf ear which can test falsely as a conductive loss if no masking is used. Mask (see Appendix 2, "Read Audiogram", below)

Tympanometry: Doesn't measure hearing! Measures ear contents, more or less.

Plain X-rays: Obsolete in the temporal bone and ear.

CAT Scan of Mastoid: indicated in long standing inflammatory disease or trauma

MRI of Temporal Bones: indicated in long standing or progressive vertigo (see "Vertigo" below), pulsatile tinnitus or facial nerve paralysis

ENG, Brainstem audiogram, Electrocochleography, Diagnostic posturography: Rarely diagnostic

Management of Hearing Loss

Conductive losses

1. serous otitis in children:

a) Serous otitis is caused by immaturity, inheritance, and immunologic immaturity.

b) All children have middle ear fluid problems, in varying degrees of duration, beginning at 6 months, peaking in severity at 6-8 years, and usually gone at puberty.

c) Antibiotics, antihistamines, and decongestants are probably ineffective in eliminating fluid.

d) Intervention is indicated if:

- speech appears to be delayed

- middle ear is atelectatic

- conductive loss is >20 db

- more than three episodes of otitis media in six months
- bilateral serous otitis >6 months in school age

- see Appendix 3, "Fluid in the Ear"

e) Indwelling ventilation tubes are the most effective treatment for any manifestation of middle ear ventilation difficulty.

- Tubes remain in place 9 months on average, but can persist for 2-3 years. They extrude spontaneously.

- Tubes in ears require postponement of swimming, because:

- earplugs are not dependable

- ear drops for prophylaxis are often painful -infection predisposes to premature expulsion of tube (see "Ear Pain" below)

2. Serous otitis in adults:

a) If unilateral, >3 weeks, rule out nasopharynx tumor with MRI of skull base with contrast.

b) if bilateral, assume nasopharyngitis, and treat:

- prednisone 20 mg t.i.d. X 2 days

- topical intranasal steroids (e.g. Rhinocort, 2 sprays to each side of nose daily) X 7 days

- Augmentin 250 mg p.o., t.i.d., X 10 days

c) Antibiotics are indicated if the ears are painful.

d) Adult serous otitis needs to be treated with tubes when chronic.

e) Chronic serous otitis in adults may point to chronic, silent sinusitis (see "Sinus Infections, Evaluation").

3. Hearing aids

a) Hearing aids work at their best in cases of conductive losses.

b) Hearing aids should be last resort in correctable conductive losses.

c) Hearing aids complicate use of tubes, and vice versa.

Sensorineural Loss Management

1. All amplification techniques are complicated by distortions in cochlear sound processing.

2. All such patients deserve a reasonable trial of hearing aids (see Appendix 2, "Refer for Hearing Aids", below).

3. Sensorineural hearing loss patients should also be taught environmental cuing strategies (see Appendix 3, "Nerve Loss", below).

Tinnitus

1. Tinnitus is a hallucination of sound - if you can auscultate the sound on the mastoid or neck, it is a bruit, not tinnitus.

2. Tinnitus is a brain activity analogous to the amputee's phantom limb phenomena. Tinnitus nearly always means hearing loss.

3. Tinnitus requires a full diagnostic audiogram if:

a) present > 1 month

b) unilateral

4. If tinnitus is pulsatile, unilateral, and lasts >1 month, an MRI of skull base with contrast is indicated to R/O vascular tumor.

5. Management

a) remove source of loss if present

b) mask with environmental sounds (see Appendix 3, "Tinnitus Instructions")

c) bio-feedback

d) trial of niacin, or Trental

Dizziness, Balance Changes

Background

The history must distinguish between vertigo and dizziness:

1. vertigo - is an illusion of ongoing, actual, current motion, (regardless of perceived or direction of motion), described as: "I was spinning", "going up and down", "falling back"

a) usually arises in asymmetric disease of the inner ears (vestibulopathy)

b) if sufficiently intense, causes nausea, as in motion sickness

c) often position related or induced

d) intensifies when visual fixation is difficult, eg. in dark.

2. dizziness, giddiness, lightheadedness - a perceived sense of impending motion, described as: "I thought I was going to fall.(or faint).."

a) does not arise in the ears!

b) possibly circulatory

c) possibly medication related

d) possibly stress response

3. Symmetric vestibular suppression, for example: as in drug related vestibular suppression, will not produce dizziness or vertigo! Gait will widen, and patient will become unsteady and a fall risk without symptoms. Monitor with calorics (see below).

On examination

1. If dizzy, reproduce symptom with hyperventilation. If you are successful in reproducing the symptoms, no further otologic work up is necessary!

2. If the complaint is vertigo, look for:

a) nystagmus

b) ear discharge

c) facial paralysis

d) hearing loss

e) Romberg's Sign

f) gait disturbance

g) paralysis of legs

3. vertigo work-up:

a) When there are no accompanying complaints of weakness, work up of vertigo can be delayed until acute spell has passed, or for 24 hours.

b) Always order a diagnostic audiogram, including bone conduction and discrimination scoring.

c) Reproduce symptom, if necessary for confirmation, with minimal caloric: 0.3 cc ice water in ear canal with patient supine on a pillow (30 degree elevation). Nystagmus will appear. Do both sides to diminish the overall effect.

d) If vertigo persists or increases for more than a week, or is accompanied by hearing loss, or facial or other weakness, then Gadolinium enhanced MRI of cerebellar pontine angle and brain is indicated.

e) If declining intensity, without accompanying deafness or weakness, vertigo can be observed for spontaneous resolution for three months on symptomatic therapy before further work up is indicated.

f) Vertigo persisting > three months, then Gadolinium enhanced MRI of cerebellar pontine angle is indicated.

3. Pharmacologic management

a) meclizine 25mg t.i.d. is traditional, but may be too sedative.

b) Valium 2.0 mg q.8h. p.r.n. is usually more effective.

c) Tigan 200 mg suppositories (1 p.r., q.6h.) should be prescribed for home, in case the patient experiences spells severe enough to cause nausea and vomiting.

d) transdermal scopolamine patches are useful in some chronic cases, but:

- can cause urinary retention

- might cause amnesia

- contraindicated in glaucoma

4. Physiotherapy (vestibular habituation)

a) Repeating the offending movements which cause the dizziness will induce compensation. "Your dizziness is your friend." (Appendix 3, Vertigo Instructions)

b) Physiotherapy is the basis of fall prevention programs for seniors.

c) Patients who restrict activity to avoid vertigo will become more unsteady.

Ear Pain, Discharge and Bleeding

Evaluation of Pain:

1. Ear pain in adults is most often referred from elsewhere. The territory that refers pain extends from the vault of the nasopharynx to the posterior molars down as far as the thyroid gland and entrance to the esophagus. When ear is tender, see "Discharge", below. If otoscopic exam and tuning forks are normal, look for:

a) TMJ dysfunction (see "Jaw Joint Pain", above)

b) locally asymptomatic lesion somewhere between nasopharynx and esophagus, and from the molars to the midline, including the thyroid

c) aphthous stomatitis ulcer ("canker" sores)

d) viral ulcerations

2. Beware of unexplained ear pain in adult smoker.

a) The source may be small cancer in the posterior oropharynx or hypopharynx.

b) Ask about dysphagia, hemoptysis or voice change to establish level of the likely source.

3. Ear pain in children under ten is usually acute otitis media. It may also come from:

a) peritonsillitis

b) aphthous stomatitis

c) TMJ dysfunction

Evaluation of ear Discharge:

1. Discharge means infection.

a) A culture always grows Pseudomonas sp.

- Don't culture the discharge unless patient is immunosuppressed.

- Aspergillus sp., Pseudomonas sp. are secondary contaminants which grow in the desquamated debris cast off by the ear.

2. Stringy ear discharge contains mucous and represents a drum perforated by otitis media.

3. Bleeding usually means otitis media with perforation and granulation.

a) Treat the otitis media as usual (see "Otitis Media", below).

b) Bleeding usually does not represent serious problem and usually disappears with antibiotic treatment.

4. If patient has had tubes, painless discharge means otitis media draining through open tube. Painful ear means blocked or extruded tube.

Management

External Otitis:

1. Erythromycin 250 mg q.i.d. for 10 days.

2. Cipro (500 mg. b.i.d. for 14 days) is effective in resistant cases.

3. Non neomycin containing acidic ear drop (e.g. Vasocidin, 3 drops to ear t.i.d. for 14 days)

4. A brief pulse of oral steroids (prednisone 20mg. t.i.d X 2 days) in adults may open the ear and permit the drops to enter.

5. Consider a diagnosis of necrotizing otitis externa (malignant otitis externa) if pain is intense in immunocompromised patient (diabetic, chemotherapy, HIV). Confirm with Gallium scan.

6. When the canal is slit-like because of swelling, a wick may be indicated. Suitable

materials are (a) the corner dof a gauze pad, or (b) a merocel wick. Introduce and expand wick with 2% xylocaine with epinephrine. Continue the drops- steroid/antibiotic eye drops are better because of their lower viscosity. Remove the wick in 48 hours.

7. The ear may need suction cleaning about a month after the infection is resolved.

8. Hygiene Instructions! (see Appendix 3, "Otitis Externa Instructions").

Otitis Media:

1. Augmentin 250 mg t.i.d. for 10 days with food is drug of choice, child or adult.

2. Always hurts! If the ear doesn't hurt, it isn't acute otitis media. (See serous otitis media below).

3. Decongestants and antihistamines are not helpful. Use at least codeine for pain control in adults, Phenergan with Codeine syrup for children.

4. The drum in otitis media looks abnormal for a month, regardless of treatment. See patient in a month, not before, unless symptoms are increasing.

5. Otitis media plus facial palsy needs urgent myringotomy.

6. If the mastoid is tender and drum is abnormal after a month, acute (surgical) mastoiditis may be developing.

7. Otitis media melts earwax. If the ear has wax, the chance you will find otitis media behind it is very small. Don't struggle with febrile, irritable small children. There is no immediate need to do so.

Chronic Serous Otitis

1. Oral steroid pulse (60 mg prednisone/day for 2 days) followed by topical steroid nasal spray for adults.

2. Topical intranasal steroid plus party favor blown up repeatedly with nose plugged for 5 minutes before bed for ten days is often effective in children.

3. Refer children for possible tube insertion if fluid is present for six months in one ear or three months in both.

Perforated Tympanic Membranes

1. Tend to close spontaneously

a) If perforation is traumatic, healing may take up to 6 months.

b) If perforation is the result of isolated otitis media, healing can be expected within one month.

c) Instruct patient to use vaseline impregnated cotton to seal ear during showers, otherwise leave it open.

d) Prescribe drops only if ear is actively discharging, and only until pain occurs. Pain indicates passage of the drops into dry middle ear.

2. A perforation may indicate a cholesteatoma when:

a) The discharge won't stop after two courses of antibiotics, assuming the ear has been kept dry for a month.

b) The ear smells like feet.

c) Vertigo or facial weakness is present.

d) The auricle protrudes due to postauricular swelling.

e) Work up: After one month of discharge despite treatment order a CAT scan of the mastoids and an audiogram.

Facial Paralysis

Background

1. Diagnose as Bell's palsy if:

a) the palsy is peripheral (forehead and lower face involved on same side)

b) ear symptoms are absent, and

c) ear looks normal, and

d) full audiogram is normal (see Appendix 2 ,"Read Audiograms")

e) The severity of ear pain indicates prognosis for depth and duration of paralysis.

f) Bell's palsy happens once only to a side.

2. It's not Bell's when:

a) weakness fluctuates

b) The palsy is accompanied by rash or ear discharge (Herpes zoster oticus)

c) otitis media is present (dehiscent facial canal or cholesteatoma)

d) any other parts of the body are paretic (vertebrobasilar insufficiency)

e) new ear symptoms are present

3. Post-traumatic palsy

a) if delayed, prognosis for full recovery is excellent

b) immediate onset palsy is possible indication for urgent surgery

4. Work up is indicated:

a) if paralysis is >3 months without improvement in Bell's

b) immediate onset complete paralysis in post traumatic patient

c) when new ear symptoms or acute ear findings are present

d) as necessary in context of systemic differential when other pareses are present

e) Workup: Full audiogram (see Appendix 2 "Read Audiogram") and gadolinium enhanced MRI of brain and temporal bone

Management

1. Protect the eye if exposed by paralysis immediately!

a) artificial tears (OTC) q.2h. or more while awake

b) tape support the lateral cheek at night so the lower lid will close over cornea during sleep

c) eye patch is difficult to use correctly because of risk of abrading cornea

2. Pharmacological Management of Bell's palsy

a) Medrol Dosepak or a generic equivalent

- repeat if pain returns

b) Zovirax 200 mg q.i.d. for ten days

Chapter 2

Nasal Complaints

Nasal Obstruction

Background

1. Intensity of patient distress (nasal dyspnea) reflects combination of degree of dependence on nasal breathing with degree of nasal obstruction.

a) People vary in how dependent they are on nose breathing, especially in childhood.

b) The nasal/oral breathing mix is probably determined neurologically in the brainstem respiratory centers, c.f. handedness.

c) Nasal/oral patterns vary with degree of alertness, and change in sleep.

2. Fixed unilateral blockage suggests significant septal deformity.

3. Blockage which alternates sides indicates turbinate dysfunction.

4. Polyps cause initially intermittent, then permanent obstruction.

5. Bilateral blockage plus clear hypersecretion reflects relative hyper parasympathetic state.

6. Dry burning nose suggests sympathetic overload.

7. Hypoestrogenemia causes dry, open nose in women.

8. Flaccid facial skin causes nasal obstruction.

9. Unilateral blockage plus pus means foreign body until proven otherwise.

10. If no foreign body is present when unilateral discharge is present, see "Sinusitis" below.

11. Allergy to cannabis may present as denasal speech. The speech characteristics are

caused by secondary adenoidal nasopharyngeal inflammation.

12. Prolonged exposure to low humidity can cause a mild chronic rhinitis.

13. Nasal secretions can cause maceration and infection of the skin inside the nasal vestibule (nasal vestibulitis)

Evaluation

1. Headlight and nasal speculum provide the best views.

a. The floor of the nose is parallel to the floor.

b. Remind patient to keep head level.

c. Decongest and anesthetize:

- Mix equal amounts of Afrin and topical 4% Xylocaine, use on cotton pledgets or as spray.

- Use 2% Xylocaine with 1:100,000 epinephrine as topical mix on pledgets or as spray as alternative.

2. Smears and cultures of nasal secretions are of little value.

3. Regular X-rays are of little value.

- too many overlying shadows for details of physiology

4. Best test in inflammatory conditions is CAT scan of sinuses taken two weeks after one month course of antibiotics (see below, "Management").

Management

1. Hygiene (see Appendix 3, "Stuffy Nose Instructions"):

a. Stop OTC nasal decongestant sprays.

b. Increase humidity, at least in bedroom (see Appendix 3, "Humidification Instructions").

2. Use anticholinergic/antihistamine/adrenergics blends occasionally to control hypersecretion. Be aware they actually slow down mucociliary function.

a. Extendryl or Rynatan Syrup in children (These mixtures contain atropinic agents.)

b. Ornade or Extendryl in adults (Contain atropinics).

c. Adrenergics are often effective, but also impair mucociliary function (pseudo ephedrine or phenylpropanolamine).

3. Evaluate/Reevaluate other medications that might be causing adrenergic blockade

a. antihypertensives

b. antidepressants

4. Steroids are the best decongestants

a. Use three day burst to break dependence on OTC nasal decongestants (prednisone 20 mg t.i.d. for 3 days with food) if necessary.

b. Use topical intranasal steroids for maintenance (e.g. Rhinocort 2 sprays to each side daily).

c. For seasonal rhinitis/hay fever:

- depo-medrol 40 to 80 mg IM x 1

- dispense 5 medrol 8 mg tabs (or generic equivalent) to be used one a day as needed for hay fever

d. See Appendix 3, "Instructions for Nasal Stuffiness Patients".

5. Nasal vestibulitis

a. Erythromycin 250 mg q.i.d. X 10 days

b. Cortisporin topical ointment applied to the inside of the nasal vestibule (the hair bearing part of the inside of the nose) b.i.d. during the same 10 days.

c. Dry the secretions with an atropinic type of decongestant, eg. Ornade, 1 p.o., b.i.d. X 10 days.

d. Cutting the hairs should be done only after soap and water wash of inside nose, and then only if followed by application of the ointment.

Sinus Headaches

Background

1. Pathology in sinuses causes numbness, rarely pain.

2. The rare pain is vague, visceral in type, and localizes to the ipsilateral side. Usually isn't over the affected sinus.

3. Most midface pain results from contact between septum and upper turbinates, referring pain to the bridge of the nose and around eyes.

   a. Any cause of nasal mucosal swelling can produce contact.

   b. Infection of sinuses is actually an uncommon cause of face pain.

   c. most common causes include:

      - allergy

      - vasomotor rhinitis

      - irritation resulting from dry air

4. Lateral head pains reflect:

   a. vascular headaches, e.g. migraine

   b. myofascial jaw joint dysfunction

Evaluation/Management

1. Therapeutic trial of intranasal steroids (e.g. Nasacort, 2 sprays to each side of nose daily).

2. Therapeutic trial of migraine medications, e.g. Midrin caps, 1 p.o. q.2h. p.r.n. headache, up to 3/day (see Appendix 3, "Sinus Headaches").

3. Therapeutic trial of muscle relaxant (Parafon-Forte DSC: 1 p.o. hs X 5d)/bite-block routine (Appendix 3, Jaw Joint Pain).

4. If no better with 2, 3 above, begin one month of antibiotic (amoxicillin, SMTX), then obtain CAT scan of sinuses. If headaches still present, and scan is negative, then neurologic origin probable.

Sinus Infection

Background

1. Sinus infections are usually painless. Some patients experience vague mild to moderate visceral type pain. The pain is poorly localized. It will be ipsilateral, or referred to the occipital region.

2. Usually presents with unilateral nasal discharge.

3. May also present as unilateral posterior pharyngeal discharge.

4. In severe cases, is caused by mixed aerobic and anaerobic components.

5. Pain is gravity related, and exacerbated by recumbency.

6. Associated numbness on face suggests neoplasm.

7. Periorbital swelling, ipsilateral nasal discharge, febrile course suggest breakthrough into the orbit.

Evaluation

1. Make diagnosis on clinical grounds when unilateral discharge and visceral type pain are present, especially if following upper respiratory infection or in C.O.P.D. patient.

2. Sinusitis may present as unexplained serous otitis in adults.

3. Facial skin tenderness is not an indicator of sinusitis.

4. Plain sinus X-rays cannot reliably exclude ethmoiditis and are optional in acute disease.

5. Nasal obstruction need not be present for diagnosis of sinusitis.

6. Use osteomeatal CAT scan of sinus to confirm post treatment status two weeks after treatment. Casual CAT scan is of limited management value because it doesn't predict if the findings are chronic or if they will respond to medication.

7. Transillumination is nearly useless.

- The technique requires a perfectly dark room and reference radiographs!

8. Percussion is nearly worthless.

- The external bones over the sinuses are thick and well padded by soft tissue. Tenderness elicited over cheek or forehead is not from sinus.

- Where bone is thin, like the floor of the frontal, it is normally tender to touch.

9. MRI evaluation of sinuses is too sensitive, and frequently gives false positive reports of inflammation. Best of the MRI applications is in tumor suspect.

10. Echo/ultrasound/transillumination have some limited value as follow up tools.

11. Numbness raises possibility of neoplasm.

Management

1. Antibiotics

a) In acute cases: Augmentin 250 mg p.o. q.i.d. X 10 days, or clindamycin p.o. q.i.d. X 10 days.

b) In chronic or prolonged cases, SMTX.DS b.i.d. X 30 days, or amoxicillin 500 q.d. X 30 days.

c) When orbit is involved, parenteral clindamycin, Unasyn, or Timentin in massive doses is indicated. Steroids are of value as brief course, to lower orbital pressure. Sample regimen:

- Clindamycin 300 mg IV q.8h. X 6 doses, then 150 mg q.8h. X 5 days, then oral clindamycin p.o. t.i.d. X 3 days.

- Decadron 8 mg IV stat, Decadron 4 mg IV in 8 hrs and in 14 hrs. (Then reassess)

2. Decongestants

a) steroid pulse (adults): prednisone 20 mg t.i.d. p.o. X 3 days

b) steroid nose sprays (adults and children over six): Nasacort 1 or 2 puffs to each side of nose daily

c) sympathomimetics and antihistamines are of doubtful value

d) mucolytics may be of some value (Organidin or Humibid)

3. Pain Medication

a) It is unusual to require any pain medication stronger than Darvocet-N 100 when there's no orbital abscess.

b) If pain is stronger, consider other diagnostic possibilities, c.f. Migraine.

4. Follow up

a) In chronic cases, obtain osteomeatal CAT scan two weeks after finishing one month of antibiotics.

b) If previous CAT scan has been done, Water's view can be adequate to confirm

resolution.

c) If differential includes neoplasm, MRI will be necessary.

Nasal Bleeding

Background

1. Nose bleeding, like all facial bleeding, is emotionally upsetting far out of proportion to its physiological significance.

2. Is not caused by hypertension.

3. The blood supply of the nose comes from both the internal carotid artery, via the ethmoid arteries, and the external carotid, by way of the internal maxillary artery.

4. The nasal mucosa begins about a centimeter in from the nostril margins and like all mucocutaneous regions, is well supplied with sensory nerve endings - and should be treated gently. Always anaesthetize! (see Appendix 2. "How to Manage Nosebleeds")

5. The most common cause of bilateral epistaxis is unilateral epistaxis. They bleed on one side, clot, then spill over to the other side. At any point they may have blood down the back wall of the nasopharynx into the mouth.

6. The most likely bleeding site is in the anterior septum (Little's area). In older patients this remains true, but posterior bleeding is a little more common.

7. Bleeding from above the middle turbinate is very often associated with a history of trauma.

8. Prevention of Nasal bleeding

- humidification of bedroom

- OTC saline nasal sprays

- Premarin vaginal cream applied to septum b.i.d. in post menopausal women

- See Appendix 3, "Prevention of Nosebleeds"

Nasal Fractures and Other Facial Trauma

Background

1. Bleeding from facial trauma is gravity sensitive.

2. The only life threatening facial fracture is a bilateral mandibular fracture that frees the tongue to fall back and down.

3. Significant fractures produce numbness, not pain. They are easily overlooked when there is multiple trauma.

4. In adults, reduction of fractures can be deferred for up to three weeks after injury; in children, up to two weeks.

5. In children, fractures threaten future development, as well as current appearance.

6. Dental occlusion is an excellent guide to previous bony relationships.

Evaluation

1. Assess airway first, then postpone evaluation of facial fractures until all other injuries are cataloged and stabilized.

2. Immediate nasal bleeding after a blow to the nose means nasal fracture (90% probability).

a) X-rays of the nose are optional.

b) The best way to evaluate nasal fractures is by waiting for swelling to subside for a week and comparing with a pre-injury photo.

c) At the time of injury, always check for septal hematoma.

- A hematoma causes the septum to appear deflected to both sides of nose at same place.

- If a hematoma is missed, and infection occurs, the top of the nose will collapse ("saddle").

3. Considerations in other facial trauma:

a) Check for:

- numbness (floor of orbit fracture)

- diplopia (ocular muscle trapped in fracture)

- trismus (mandible fracture)

- malocclusion (mandible fracture or craniofacial separation)

b) Facial CT scan gives best radiographic assessment of all facial fractures.

Request 3-D reconstructions.

Management (Immediate)

1. Elevate head to reduce bleeding and swelling.

2. Oral suctioning to clear airway of blood.

3. Long acting nose drops or spray (e.g. Afrin) will control nasal bleeding from torn turbinates.

4. Nasal airway if mandible fractures in two places and threatens airway.

Chapter 3

Oropharyngeal Difficulties

Oral Cavity

Background

1. Bony Lesions of the Mouth

a) Hard palate and inner anterior mandible

- Commonly smooth irregularly shaped bony masses develop called torus palatinus or mandibularis.

- Torus is inherited as a family trait.

- The bony growths might need removal for the fitting of plate or bridge by a dentist, but otherwise are of no significance.

b) Posterolateral hard palate

- Patients are alarmed when they discover prominent paired hooks of the hamulus. They are variations of normal anatomy.

2. Soft Tissue Lesions

a) Aphthous ulcers

- superficial, very painful, transient, non- scarring

b) Pemphigoid

- look and feel like aphthous ulcers, but they scar

c) Lichen planus

- irregular, white, slightly painful or burning, transient, non indurated lesions

d) Malignancies (usually squamous cell)

- palpable, mildly tender, possibly ulcerated, and are usually palpably indurated

Management

1. Control pain of oral or pharyngeal lesions with:

(a) mouthwash of: 50% elixir benadryl, 50% milk of magnesia - No mouthwash or gargle can reach past the last molars!!!

(b) Phenol containing mouth lozenges are effective for ulcers posterior to the tonsil pillars, e.g., Chloraseptic

(c) Maalox 30 cc mixed with 5 cc of xylocaine viscous, sipped over an hour, as needed, helps control pain in hypopharyngeal lesions

(d) Painful lesions, if benign on pathologic examination, benefit from systemic steroids (prednisone 10 mg p.o. t.i.d. X 4d) if body weight begins to fall.

- diagnose by:

- taking biopsy with dermatologic punch knife. Control bleeding with silver nitrate. Infiltrate area first with xylocaine with epinephrine.

- treatment:

- Zovirax for aphthous ulcers (200 mg q.i.d. X 10d) - Steroids (prednisone 20 mg t.i.d. p.o. X 4d) for pemphigus - Surgical staging for cancer

3. Colored Lesions

a) Transparent lesions

- Probably represent plugged mucous glands (mucocoele), and are often post traumatic.

- Should be followed, and not opened

- Spontaneous resolution can be expected in one or two months

b) Black lesions in the oral cavity

- If multiple, non indurated, and non ulcerated, they are probably embedded amalgam tatoos. They are benign, and no treatment is indicated.

- If the lesion is solitary, indurated, ulcerated or changing, they may

represent melanoma. Biopsy is indicated.

b) Blue lesions

- usually lymphangiomas or varicose veins. Generally benign. Need excision if growing.

- if indurated, especially if growing, may be Kaposi's sarcoma, and should be biopsied.

c) Red lesions

- Erythroplasia may be premalignant lesion, especially in smoker. The patient should be seen at two monthly intervals with frequent biopsy, until the lesion heals

d) White (with grey sheen)

- leukoplakia indicating high risk for development of squamous cell cancer. Patient should be warned to stop smoking.The patient should be re-evaluated every two months.

Dry Mouth Symptoms

1. May be caused by:

a) parasympathetic blockers, as are used to diminish bowel hypermotility, or as antihistamines

b) hyper adrenergic state due to anxiety or adrenergic medications, c.f. systemic nasal decongestants

c) nocturnal positional nasal obstruction leading to mouth breathing

d) prolonged exposure to dry air in a chronic mouth breather

e) estrogen deficiency in post menopausal lady

f) connective tissue disorder (Sjogren's or sarcoid), manifesting as a 'sicca' syndrome

g) post oral cancer irradiation syndrome

Treatment

1. Specific: remove any identified offending agent, correct estrogen deficiency, etc.

2. Non-specific: vaporizer (See Appendix 3, "Humidification"), increase hydration with plain water, dilute any mouthwash being used, prescribe mucolytics (guaifenesin [Humibid LA] or iodides) and artificial salivas (Salivart, OTC)

Salivary Swellings

1. Infections of the Parotid or Submandibular Gland

a) painful, abrupt, causing both local and referred ear pain

b) often reflects chronic dehydration leading to increased mucous viscosity

c) treat with ten days of Augmentin (500 mg p.o., t.i.d.) or Cleocin (150 mg p.o., q.i.d.), plus 60 mg of prednisone the first day

d) stones are common symptoms of chronic inflammation in submandibular gland, unusual in parotid (see below)

2. Tumors of the Salivary Glands

a) Probably benign, especially in women, and in parotid.

b) Excision by at least superficial parotidectomy or total submandibular sialadenectomy is only sure way to diagnose. Needle biopsy carries 15-20% error rate.

3. Stones in the Salivary Glands

a) Most common in submandibular gland.

b) Often lodge as a yellowish granule or mass at the tip of the submandibular duct under the tip of the tongue. Occasionally, a stone may present at the opening of the parotid duct in the mucosa of the cheek.

c) Can easily be released from the anterior end of the duct under topical anesthesia. Spray the front part of the mouth with Cetacaine and slit the duct longitudinally with #12 BP blade for 2-3 mm. The stone will protect the floor of mouth. Control bleeding with silver nitrate sticks or pressure.

d) Glands that repeatedly form stones eventually will need to be excised.

4. Diagnostic Points

a) Swelling can produce referred pain to ear.

b) Sialograms are of little value, and often increase the patient's misery.

c) Ultrasound of gland is excellent way of monitoring size of a parotid or submandibular mass.

d) Parotid deep lobe tumors can produce a bulge behind the tonsil.

Jaw Pain Syndromes

1. In adults, jaw joint dysfunction is the most common cause of earache. (See "Ear Pain, Discharge", above). Seek history of:

a) loose or old dentures

b) recent change in bite (new cap, broken filling, loss of tooth)

c) recent non compliance with requirement for retainer after orthodontia

d) recent changes in orthodontic appliances

2. Pain increases with chewing, and localizes to temporoparietal region and shoulders.

3. Manage as musculoskeletal disorder (see Appendix 3, "Jaw Joint Pain"):

a) heat

b) soft diet

c) muscle relaxant (Parafon Forte DSC, SOMA, NSAIDs d) bite relaxation block

4. Standard X-rays of jaw joints are rarely helpful.

5. Tender jaw joints occur rarely as a sign of primary arthritis.

Bad Breath Complaints

1. With rare exception, halitosis is a metabolic phenomenon.

a) The blend of exhaled aromatic molecules is probably genetically determined by liver metabolic pathways, analogous to PTC secretion in saliva.

b) Genetically set olfactory sensitivities in observer determine perception.

2. Patients need reassurance that they aren't rotting inside. (See Appendix 3, "Bad Breath")

Smoking Cessation

1. Smoking is incompatible with the treatment of any upper airway condition or inflammatory ear disease! Why treat those conditions without addressing the smoking?

2. Smoking or chewing tobacco is a manifestation of nicotine addiction.

3. There may be a genetic predisposition to nicotine addiction.

4. The behavioral and pharmacologic techniques successful in other substance abuse programs are usually necessary in controlling nicotine addiction.

a) Transderm Clonidine patches (#1, one weekly for a month) are useful.

b) Although irrational, nicotine patches are said to be helpful.

c) See Appendix 3, "How to Stop Smoking" for a representative motivational approach.

Snoring and Mouth Breathing

Background

1. Both snoring and mouth breathing originate in the same neural mechanism which controls whether we take our next breath through our mouth or nose.

2. Genetics play a large role in both neural and structural predispositions.

3. Children have disproportionate growth in adenotonsillar lymph tissue related to nasopharynx volume. This disproportion probably parallels immune system development. The discrepancy peaks at about age eight years. Continued growth gradually corrects most size mismatches. (See Appendix 3, "Mouth Breathing").

Management

1. In adults, use a three night diagnostic trial of long acting nose drops (e.g. Afrin) to determine the role of turbinate function in producing obstruction (see "Nasal Obstruction", above).

a) If topical nasal decongestants are successful in eliminating the snoring, treat adults with topical nasal steroid sprays on long term basis.

b) If the trial is not completely successful, consider evaluaion for sleep apnea by referral to a Sleep Center for a diagnostic polysomnogram.

2. Sleep disorder evaluation requires polysomnogram, because history of apneic spells is not always available. A polysomnogram is indicated when the patient reports:

a) Apneic spells (> 10 sec in adults, > 5 sec in children) are observed.

b) Snoring is at socially destructive (SDS) levels, resulting in loss of bed-partner or room-mates

c) Daytime hypersomnolence is experienced.

d) Nocturnal choking spells are reported.

3. In children, sleep apnea is considered to be an indication for adenotonsillectomy.

Tonsillitis, Pharyngitis

Background

1. Chronic pharyngitis is often caused by silent chronic sinusitis.

2. Tonsillitis means a discrete painful infection of the tonsil.

a) The white 'exudate' is not pus! It's accumulated food, digested by oral enzymes

b) Acute tonsillitis patients have severe dysphagia and often trismus. They skip meals.

3. The most dramatic tonsillitis occurs in infectious mononucleosis

4. Strep infections are not the same as tonsillitis, either can occur without the other.

5. Peritonsillar abscesses are nearly always one sided. They're hard to see because of trismus.

6. Nontender unilateral tonsil swelling may be neoplasm.

7. Ear pain on swallowing points to invasion of underlying muscle by either the inflammatory or neoplastic process.

Medical Management

1. In children, cover strep, H. flu (Augmentin, Cleocin)

2. In adults, cover strep, staph and anaerobes:

a) Cleocin 150 q.i.d. for 10 days

b) Prednisone 20 mg p.o. q.8h. for three doses, if cellulitis or abscess is present

3. Strep carriers, whose throats repeatedly test positive for group a streptococcus should be managed by long term penicillin therapy or equivalent

a) Monitor for invasive infection using serologic markers.

Surgical Management

1. Incise or aspirate a peritonsillar abscess if no response to medical management in 24 hours; not often necessary.

2. Tonsillectomy is indicated if:

a) more than three episodes of tonsillitis in a year

b) sleep apnea or cor pulmonale is caused by airway obstruction

c) peritonsillar abscess

d) progressive enlargement of one tonsil

e) not more dangerous in (otherwise well) adults, they just complain more

f) see Appendix 1, "Post Operative Tonsillectomy Instructions".

Larynx & Pharynx

Background

1. Think of laryngeal symptoms in relation to functions:

a) airway:

- stridor can be a late sign of airway distress, especially when the obstruction is gradual. Orthopnea generally comes first.

b) gatekeeper:

- choking and/or aspiration are often symptoms of laryngeal dysfunction

c) instrumental:

- voice changes (dysphonia), hoarseness are non-specific. Voice cannot be evaluated in isolation, without considering the other functions. Hoarseness always means the cords themselves aren't hitting correctly. Either they are unable to move properly or something has developed on one or both articular surfaces that is keeping them apart.

d) wild cards:

- (referred)ear pain, hemoptysis, and/or pain on swallowing can indicate erosion into cartilage or muscle. Causes may be benign or malignant.

e) lump sensation:

- Lump sensation in midline, usually means spasm of cricopharyngeus muscle. Rarely is lump sensation (globus) psychosomatic. Most often is compensation for lower esophageal sphincter incompetence (GERD).

f) speech rhythm:

- In high grade obstruction often speech is normal, but will be punctuated by long pauses for slow intake of breath.

g) cough:

- Most often represents an overload of the ciliary drainage mechanism in the lungs. Cough may also point to paretic type laryngeal incompetence or ciliary overload from aspirating refluxed stomach contents.

Evaluation of Laryngeal Function

1. Mirror examination and fiberoptic laryngoscopy are easy, though practice is necessary to become facile.

2. Plain X-rays, (soft tissue technique) PA & lateral, in deep inspiration and in peak phonation provide a wealth of information on structure and function. Vocal paralysis and subglottic stenosis can easily be demonstrated using this inexpensive, readily available modality.

3. Enhanced MRI examination of larynx and hypopharynx prior to any biopsy is indicated when tumor is suggested by additional history of:

a) smoking

b) drinking

c) ear pain

d) presence of neck mass

4. Cine-fluoroscopic swallowing examination of cervical esophagus is indicated when the complaints include:

a) coughing, choking (small bolus!)

b) heartburn

c) no respose to theraputic trial of metclopamide

5. Video-stroboscopic analysis can occasionally help explain otherwise incomprehensible voice changes.

Management

1. Track acute airway obstruction by monitoring pulse and respiratory rate with respiratory monitor and pulse oximetry. (see Appendix I,g. Airway Obstruction)

2. Therapeutic trial of anti-reflux medication is indicated when globus is present. (Reglan 10 mg or Propulsid 10 mg at hs X 14 days). If no response, then Barium esophagram is indicated.

3. Voice rest is not very effective. Vocal cords spend most of their contact time during swallowing, not phonation. Advise quiet activities.

4. Hoarseness in childhood most often is caused by vocal abuse (screaming and shouting). It usually fluctuates, suggesting nodules. When it is fixed, or increasing, it may indicate papilloma. When present over one month, a fixed hoarse larynx in child should be visualized in any way necessary.

5. Speech therapy probably is ineffective in children. Motivation isn't present. Growth of larynx plus peer pressure usually corrects most childhood hoarseness caused by nodules.

Appendix 1

Surgical Principals Applicable to the Head & Neck

1. Bleeding, Swelling

a. The absence of valves in the venous system makes gravity a major influence in the amount of bleeding and/or swelling any condition will generate. Elevate the head, upright if possible!

b. Single doses of steroids (prednisone 20 mg p.o. or Decadron 10 mg IM, in adults) buy time in progressive swellings.

2. Lacerations

a. Trim as little as possible. Cosmesis is enhanced in a jagged scar, provided there is no step to cast a shadow

b. Subcutaneous closure is optional on the face. Just close the skin.

c. Tiny bites of 6-0 mild chromic in a running stitch will close almost any facial wound securely, and don't need to be removed. This feature is most valuable in children!

d. Lacerations of the mouth and tongue that don't bleed and which don't cross the vermillion border onto skin needn't be closed at all.

3. Infections

a. Mixed infections of anaerobic and aerobic bacteria are common. Penicillin resistant staph may often protect the strep that generates the clinical picture. The antibiotic regimen chosen should address all these issues, eg., clindamycin or cephlexin plus metronidazole.

b. Culturing the nose or ear canal is probably useless. If the patient is toxic, blood cultures will be most relevant.

c. Incise and drain by inserting needle from edge of redness to center of pus in the direction of the wrinkles, creases or lines of election. Confirm by aspiration. Cut along the course of and down to the needle.

4. Lumps

a. Don't open biopsy neck nodes without having made a complete search for mucosal primaries by indirect or (preferred) direct laryngoscopy. Needle aspiration biopsy (FNA) is the method of choice for a totally unknown mass.

b. Don't open biopsy parotid masses.

5. Facial Trauma

a. Immediate problem is the airway. Suction is invaluable. If the patient wants to sit up, allow it. The tongue may be falling back!

b. Bleeding is gravity sensitive. Elevate the head as much as feasible.

c. Neck dressings and tracheostomy retention tapes should be finger loose, so the venous drainage will not be impaired.

d. Don't be distracted by facial wounds. Depending on circumstances, check for closed wounds of the chest, abdomen, and extremities. Facial wounds are only life threatening if the mandible is shattered.

e. Reduction and fixation of facial fractures can and often should, be delayed for up to two to three weeks, especially in adults.

- The initial swelling subsides and a more precise evaluation of the injury is possible.

- Other more critical clinical problems might emerge to be dealt with.

- Delayed corrective surgery produces less swelling.

f. Laryngeal trauma is significant when accompanied by:

- Voice changes

- Hemoptysis

- Crepitus and/or neck swelling

- Hemoptysis

- Monitor oxygenation and intubate with trach set handy. If a neck wound is bubbling, follow the bubbles and place an endotracheal tube through the actual injury.

g. Airway Obstruction

- Monitor oxygen saturation, pulse rate and respiratory rate on minute-to-minute basis.

- The pulse rate should parallel the respiratory rate. When pulse continues to climb and the respiratory rate remains steady or falls, beware, the patient is tiring! Such a patient needs airway support emergently. Prepare for urgent intubation or tracheostomy!!!

Appendix 2

How to ...

1... Remove Ear wax and Foreign Bodies

a. Foreign bodies, or wax, is not an emergency unless it is a live insect!!! Water or alcohol can be used to suffocate a live insect.

b. Irrigation is the safest technique for removing wax or foreign bodies. Use 20 cc syringe with cut off #14 intracath. Water should be at body temperature!

c. Don't start irrigating a foreign body at night, especially if it is vegetal.

d. Otitis media usually melts wax. Don't feel obliged to remove wax in febrile child. It makes them crabby and adds nothing to the management of the case.

e. The best softening drops for wax are glycerol types, e.g. VoSol HC or plain; apply gtts 3 t.i.d. for 2-3 days before you try to remove the wax. The OTC cerumenolytics are very irritating.

f. There's no such thing as an ear curette!!! The term is ear loop. The little blunt loops are designed to pull the wax out, never to scrape it out. They require a headlight for proper use.

2... Remove Nasal Foreign Bodies

a. Never emergencies, always need controlled atraumatic removal. Inflammatory swelling grasps the foreign body.

b. Use decongestant drop to reduce swelling and loosen the grip of the nose, then, if the patient can cooperate, have them blow it out.

c. A hairpin bent into a hoe shape or an earwax loop can be used to scoop out the object. Allegator forceps are invaluable.

d. Headlights facilitate the task immensely.

3... Prevent Nosebleeds

a. Identify patient at risk: anticoagulated, NSAIDs, platelet deficient

b. Order vaporizers and q.4h. saline nose gtts while awake for in-patients with risk factors for bleeding.

c. Trim fingernails on predisposed toddlers and confused patients.

d. Provide written instructions to out patients (see Appendix 3 "Preventing Nosebleeds" below).

4... Use Tuning Forks

a. Start with the lowest frequency fork available, preferably 64 Hz.

b. Strike fork, then touch lightly with finger to dampen the overtone.

c. Apply base of fork to skull behind the ear, then the side of the tines about 2 cm from ear. Ask patient which was louder. Repeat with next higher fork.

d. Record the first (lowest frequency) fork that is heard louder in front of the ear compared to the skull behind the ear.

e. The lower the fork heard louder in front than behind the smaller the conductive component of any hearing loss the patient might have.

f. Ears that hear a 64 Hz tuning fork better by air (in front) than by bone (behind) have no measurable conductive loss. Any loss in such ears is sensorineural.

g. Ears that hear better by bone than by air at 512 Hz have complete fixation or separation of the ossicles.

h. Be sure that the ears hear! Use a noisemaker (a radio or pillow speaker turned loud between stations) to mask one ear while you whisper into the other ear. A patient with a dead ear can seem to hear better by bone than air on tuning fork testing. The error occurs when masking is not used, because the bone conducted sound will cross to the good ear.

5... Read the Audiogram

a. Audiograms report hearing in loss. The lower the number the better the hearing.

b. The range of normal hearing includes 25-30 dB.

c. Frequency range for speech is 250 to 2000 Hz. These are also the 'low' tones.

d. 'High frequency' losses are above 2000 Hz.

e. The audiogram has a key to tell the right and left ear, and which is air conduction and which is bone conduction.

f. The speech reception (SRT) score will be given in decibels, and should roughly match the average decibel score for air conduction. This is an internal measure of the reliability

of the test.

g. The discrimination score measures the patient's accuracy in repeating a calibrated word list. The score should be 100% when the speech frequencies are normal. If they are not, consider the possibility of cerebellopontine pathology.

h. The bone conduction line should always be equal to or better (above) the air conduction line.

i. Masking is critical when the hearing is asymmetrical. See "..Tuning forks," para h. above.

6... Refer for a Hearing Aid

a. Select a multi-brand source of hearing aids committed to service as well as sales. Hearing aids are fussy and labor intensive.

b. Prepare the patient. They are not buying normal hearing. They are buying a way for others to talk to them. The patient feels the discomforts, but others experience the benefits of their better hearing.

c. Have the patient insist on four conditions for a purchase:

(1) Only the best for their individual hearing, even if it is the least expensive.

(2) A sixty-day trial period. (Some dealers require a nominal fee to prepare a mold of the ear.) During the sixty days, the patient is to play with family and friends a game of "Can you tell by just talking to me whether I'm wearing a hearing aid? Is it different if I wear one or two or none?". If the family can't tell, they are not to keep the aid.

(3) Generous trade-in allowance toward new technology.

(4) Ready acceptance of "no" if the trial shows no improvement.

7... Take Care of the Tonsillectomy Patient

a. Bleeding varies in frequency from 3% to 10%. The risk falls logarithmically after surgery, and is gone by 12 to 14 days.

b. No technique of surgery or anesthesia has proven to be any better than another measured by bleeding or pain.

c. Antibiotics may be of some benefit in keeping down mouth odor.

d. Over 7 years old, Phenergan with Codeine cough mix gives effective for pain

control up into the teen years.

e. Diet makes no difference in the complication rate. No dietary restrictions are necessary.

8... Take care of a Nosebleed

1. The quickest way to sort out the "red towel" syndrome is to have the patient gently blow out all the clots out of his nose on both sides, then lean slightly forward. Most likely only one side will bleed, and the patient will probably confirm that that side started first.

2. Determine:

a) Is the bleeding anterior to the bony pyriform aperture in the cartilaginous part of the nose? (i.e. will anterior pack be sufficient?)

b) Is the bleeding above the inferior turbinates? (i.e. in the territory of the internal carotid artery?)

3. Lab and x-ray

a) When the bleeding is acute, an emergency hematocrit will only serve as baseline. To estimate the blood loss you will need conventional vital sign methods of judgement plus blood volume and CVP determinations, if indicated by the patient's overall condition.

4. Epistaxis is rarely the presenting sign of a blood dyscrasia. Unless there is a history of blood dyscrasia or anticoagulant medication, there is no urgency in obtaining a complete coagulation work-up.

5. Before you put a N-G tube in a patient who presents with hematemesis, be sure he isn't having a nosebleed. If he re-bleeds later you will attribute it to the nasogastric tube.

6. If the patient has a posterior type of nose bleed early sinus X-rays could be helpful in later management.

Management

1. Organize your equipment (see 6. below). Don't touch the patient until you are completely ready to deal with him.

2. Ask the patient three basic questions:

a) Which side bled first?

b) Does he have any bleeding disorders or take any blood thinning medications?

c) Is he allergic to any medications?

3. Sedation may be in order

a) Check vital signs first

b) Low dose valium is appropriate, IM or IV

4. Have patient hold nose pinched shut - at the soft parts (alae) - while preparations are under way.

5. Provide a basin for the blood - it is hemodynamically worthless in the stomach, and vomiting will only start up bleeding again if it has stopped. Let it drip.

6. Collect the following:

a) Two patient gowns - one for the patient, one for you. You need to be free to wallow right up to your elbows without worrying about your clothes.

b) Good light is crucial. You need two hands to manipulate effectively. Irrigating nasal endoscopes or an over-the-shoulder light and head mirror are the ideal. A good head light such as the Grams is very close, practical second. Someone else holding a flash light is marginal. You holding a light are almost useless.

c) Good strong suction is a must in keeping your field clear. The ideal is a small curved suction tips, with thumb control (Baron type, #7, regular or long), but you can improvise from a small suction catheter cut short, with an extra hole cut in it. Some already have the hole for control of the suction. You will need a catheter about 5 cm long.

d) A nasal speculum is hard to improvise, but you can try a scalpel handle. Use it to lift up the nostril so you can see the septum. Remember that a speculum lifts the cartilage with the upper blade; it does not pry open the nose.

e) Pledgets, cotton or cottonoid, will be needed to apply an anesthetic vasoconstrictor.

- The classical medicine is cocaine. It is difficult to use safely.

- Two per cent lidocaine with 1:100,000 epinephrine is usually more readily available and can be used topically.

- The most practical mixture is equal parts 4% topical lidocaine and 0.5% oxymetazoline (Afrin)

- Pour 10 cc of the available mixture in a medicine cup, and have it within easy reach.

f) For anterior packing, petroleum jelly gauze is usually used. Plain selvage gauze can be appropriately lubricated. The width is less important than the length -- at least four feet. Merocel packing in various configurations is available widely. Antibiotic cream or ointment (Cortisporin is the ideal) should be applied to any dressing before insertion.

g) Silver nitrate sticks

h) Arrange the above items on a Mayo stand tucked under your seated patient's chin, and you are ready to begin.

7. Have the patient blow his nose. Using your light, suction, and speculum, look for the bleeding site. If he's bleeding too fast, put in a pledget soaked in the anesthetic/decongestant mixture. This will shrink the nose giving you more room, and probably slow down the flow.

After a moment pull the pack and look again. If you don't see it, and he's still bleeding, put another cotton pack in again, this time a little deeper. When it comes out, use the suction up high in the nose to see if the bleeding is above the inferior turbinate. Use the suction straight back until you pass the bleeding point, if you can, to try to establish whether it is anterior or posterior. Don't let the patient tip his head back as you work. The floor of the nose is parallel to the floor you're standing on as the patient faces you.

8. If you can't locate a bleeding point because the bleeding has stopped:

a) Apply an anterior pack and schedule the patient for pack removal in two to four days. Significant bleeding with the anterior pack in place points to a diagnosis of posterior bleeding. If no bleeding occurs, the bleeding area will probably heal.

b) Cover with staphicidal oral antibiotic (e.g. Keflex 250 q.i.d.)

9. If you see the bleeding point try to cauterize it:

a) A silver nitrate stick is appropriate for all but the most torrential bleeding.

b) Do not use any cautery before applying an anesthetic pledget!

c) Touch just the bleeding area firmly but briefly. The cilia will spread the

caustic and give you a bigger burn than you expect. Touch it a second time.

d) If you aren't sure you have the right bleeding point or that it may not be fully controlled, pack the nose.

10. The most certain thing to do if the bleeding isn't controlled by cautery is to pack the nose.

a) Use only one piece of gauze to a side. If you put in a second piece of gauze, the first will sooner or later fall into the pharynx.

b) When you are done layering it in, both ends of the gauze should present anteriorly. If you have an end in the mass of the pack, it will work its way over the palate into the pharynx, and gag your patient.

c) The nasofacial angle should be blunted by the time you are done.

d) Don't rely on the patient to remove pack. It should be removed by a physician, in case of rebleeding.

- remove in four days

- cover with staphicidal antibiotic

- after removal, institute lubrication/ humidification regimen (see Appendix 2, "Preventing nosebleed Instructions")

e) If a good anterior pack doesn't work, some advocate packing the other side, but:

- the result can be denuded septal cartilage and a septal perforation

- it's probably a posterior bleed, and you need a posterior pack

10. Posterior Bleeding

a) Use a 30 cc Foley catheter with the tip cut off up to the balloon.

b) By this point you have anesthetized and shrunken the nose, so all you need to do is lubricate the catheter with lidocaine viscous or surgical jelly and slide it into the nasopharynx along the floor of the nose. Once the balloon is inflated, you pull it snugly into the choanae - apply another anterior pack. Be sure that the catheter doesn't touch the walls of the nasal passage as you insert the anterior pack around the catheter. Secure the catheter well anteriorly with some sponge rubber and a Hoffman-type clamp.

c) Posterior packing in the elderly patient probably should indicate admission for observation and appropriate treatment of the common accompaniments of a posterior pack -- rhinosinusitis, otitis and, disorientation.

- monitor O2 saturation as well as ECG

d) There are several prepackaged posterior balloons available. The Gottschalk Naso-Stat has been a very effective example.

11. Traumatic nose bleeds (see "Nasal Fractures", above)

a) Almost always stop by themselves

b) May include CSF leak - do not pack!

12. Posterior bleeding in adolescent boys

a) Should be referred to an otolaryngologist.

b) The patient may have a juvenile angiofibroma which has legendary bleeding associated with any manipulations.

13. Epistaxis in Bleeding diatheses

a) Should be packed only as a last resort.

b) Any intranasal manipulation brings mucosal trauma which escalates problems.

c) If in any way possible, correct the general diathesis.

- Locally, apply topical vasoconstrictors repeatedly.

- Packing of absorbable cellulose cotton can later be dissolved out with bicarbonate drops, and may tide the patient over.

d) Toddlers who pick their noses

- They usually do it because it's itchy from drying of the crust they formed the last time they picked it.

- If they are too small for packing, topical vasoconstrictors and sedation often works.

- Cautery is difficult in a struggling child, and usually results in a large burn which really bleeds.

- If they come to packing, they usually need admission for the restraint it takes to keep the packing in.

Appendix 3

What to Say about....

... Otitis Externa

Otitis externa is named differently depending on the stage of the disease. Some call it swimmer's ear. Others refer to a "fungus" in their ears. The most closely related condition anywhere else in the body is eczema.

Wax is a substance produced by the skin in the outer passage of the ear to protect the ear from moisture and bacteria. It is not a waste product. Sooner or later, all artificial attempts to remove it will damage the protection of the outer passage of the ear. This is why we are so opposed to using cotton-tipped applicators, hair pins, and other instruments as part of personal hygiene. The wax is formed within the ear and slides out the ear where the movement of the jaw joint crumbles the dried wax and allows it to flake out. The unsightly wax which appears at the very edge of the ear passage can be easily reached with a damp face cloth gently twirled on the finger. There is usually no visible wax in the rest of the ear passage.

The two major enemies of the waxy defense system in the outer ear passage are water and mechanical scratching or rubbing. Once the wax defenses are broken, certain bacteria begin to invade and create an alkaline environment which makes the ear weep and become itchy. Usually, this results in more scratching.

The first symptom of this condition is excess wax formation. This is a natural attempt by the ear to protect itself. Sooner or later, the wax glands become exhausted and the ear is super clean. It also itches. The irresistible urge to rub the ear now sets the ear up to be invaded by bacteria and it becomes moist and swollen. Finally, the repeated cycles of infection make the ear passage scar down and close.

The best way to avoid this disorder and the simplest way to reverse it once it begins is by avoiding anything that wets the ear or touches or rubs the inside of the ear. Wax should be removed only from the outermost edge of the ear passage. Cotton-tipped applicators will only push wax further down into the ear passage where it will accumulate and overload the transportation mechanism. Swimmers need only be sure that their ears are perfectly dry before retiring at night. Ear plugs are not usually necessary and may even be undesirable. They push the wax further down inside the ear while at the same time providing a surface for the constantly moving ear passage to rub against. The best way to assure that the ear is dry is to use some form of drying drop which usually consists of some sort of mildly acetic substance. (Equal parts of rubbing alcohol and white vinegar can do as a drying drop in a pinch.) A hair dryer works well in drying the ear. Occasionally, oral antibiotics are required to control an acute flare-up. We like to avoid the use of any drops which are available on the market for dissolving ear wax since our experience has been that these drops have difficulty telling where the wax stops and your healthy ear passage begins.

If you find that you have a very hard wax, then a scheduled visit to the doctor is in order. Hydrogen peroxide is too watery to use more than rarely and should be used with specific doctor's instructions. It is helpful to use a few drops of mineral oil or baby oil at bedtime the night before the visit.

... Fluid in the Ear (Middle Ear Ventilation Problems)

When I look into the ear with an otoscope, I am looking down a tunnel at whose end is a thin wall called the ear drum. On the other side of that ear drum is a space called the middle ear which normally contains air. The air gets there through a tube called the eustachian tube, which is normally closed, and which opens when you yawn or swallow, making the clicking sound you become aware of when you yawn or swallow. If the tube stops functioning, a vacuum develops in the ear. The ear responds to the vacuum by secreting fluid. The fluid may be as thin as water or so thick that we occasionally call it a glue ear. People differ in the amount of hearing disability that results from this fluid, but the hearing is almost never as good as it could be so long as the fluid is in the ear. Occasionally, when there is a vacuum in the ear, the ear drum will be sucked in. When this happens over a period of years, chronic infection and perforation may result. This process usually does take years.

The exact reasons for why the pressure equalizing tubes, the eustachian tubes, malfunction in certain people is not yet known. The major reasons have seemed to involve heredity and immaturity. The tube that lets air into the ear is partially made out of gristle (cartilage). In children, this cartilage is very soft and when a small vacuum develops in the ear, it tends to collapse the cartilage in the same way that a wet straw collapses when you try to drink through it. Heredity seems to affect the mechanics of the muscles that serve to pull the tube open. Finally, there is a membrane factor, referred to as "allergy" which is poorly understood, but is operating at a biochemical level. The adenoids may also have some mechanical affect on the way the tube opens, but their role in the this process in quite unclear at this time.

Treatment varies. Decongestants are frequently offered in order to improve a borderline tube function. Adenoidectomy is offered to improve the mechanics of the eustachian tube opening and ventilation through the nose. Artificial middle ear ventilating tubes are used to break the vacuum in the ear which leads to the complications and permit drainage for the same reason we make a second hole in a juice can. Which mixture of these measures is selected depends on the individual case.

... Nerve Loss

Part of your hearing loss is due to damage to the nerve which conducts sound from the ear to the brain. This is the inner part of the ear, locked away inside the bones at the bottom of the skull. This hearing loss is different from the kind of hearing loss arises from fluid in the middle ear which is characteristic of childhood or with wax in the outer ear passage which occasionally affects some adults.

Your hearing loss includes not only loss of hearing, but also distortion of sounds coming into your ear. This means that although you may be aware of the sound, it is difficult for your brain to decide exactly what the sound represents. You have difficulty decoding the complicated sounds we string together to make speech.

The sounds of language are coded in high frequencies and in the low frequencies. If we miss hearing them in the low frequencies, we figure them out from what we hear in the high frequencies. In a noisy background, we need both. People with a nerve hearing loss have the greatest difficulty understanding speech in a noisy room. For this reason this form of hearing loss used to be called a perceptive hearing loss. The currently fashionable term is sensorineural hearing loss.

Until recently, most of these were attributed to "old age". We are now wiser. The tendency to develop these losses usually runs in families and is aggravated by noise pollution in our society. One of the preventable causes of such loss is work exposure to loud noises.

The person with nerve hearing loss usually doesn't know it. The damage usually occurs gradually and since we don't know what is being said to us, we can only accept what our ears tell us as the truth. When our hearing finally deteriorates to a moderately severe level we become aware that what our ears are telling us cqnnot possibly be correct. Others who have normal hearing know what they and others are saying and realise we have lost hearing before we do.

People with a nerve loss have problems communicating with friends and family. Though they hear what is being said, they often hear it incorrectly and having a conversation becomes very difficult. With children, radio or television in the background, trying to get through to a person who has such a hearing loss is a very frustrating experience. Often, families give up trying to get through to the person who has a nerve loss. It is a rare friend who continues to try. For the person with a nerve hearing loss, a public gathering such as a party or a performance is a disaster. Often the person with a nerve hearing loss automatically begins to avoid going into public. Frequently, the person himself doesn't realize why.

The telephone becomes a major source of communicating for people with a nerve hearing loss. The telephone seems clearer because there is no background noise. This is why so many of our senior citizens rather telephone to people whom they could probably just as easily visit face-to-face.

Through the decades of the 80's and 90's, we don't foresee any readily available surgical or medical treatment for most nerve hearing losses. The best ways to improve communications include controlling the listening situation and using amplification devices.

We automatically compensate with our eyes as our hearing begins to deteriorate. Persons who have a nerve hearing loss should be sure to have their eyes checked to be sure that their vision is as good as it can be. Insisting on holding conversations in well-lighted areas on a face-to-face basis will go a long way toward improving hearing accuracy. The rule ought to be no conversations with people you can't see.

It was said nerve hearing losses could not be helped by hearing aids. While this may have been true several years ago, it is no longer true today. No one who has such a hearing loss should deny himself the opportunity to be fitted with a hearing aid, provided the fitting is accomplished by a properly trained individual who either is an otolaryngologist, an audiologist, or who is under direct supervision of such a person. The major objection ot hearing aids is how they look. It looks much worse to be constantly saying "what ?" than to be wearing a behind-the-ear hearing aid. Be aware that many hearing losses are best fitted with two hearing aids to give balanced hearing. This is a subject which is best discussed with the person who dispenses the hearing aid.

Certainly, anyone with such a hearing loss should avoid situations which will make the nerve loss worse. Noisy occupations and hobbies should be avoided wherever possible. If it is not possible to avoid noisy situations, then the use of ear protection devices should be discussed with the physician or audiologist. Whenever a new medication is prescribed, it is prudent to remind the physician that there is already a hearing loss so that he can be sure to avoid known hearing toxic drugs if the clinical situation permits him to.

As with all handicaps, the most important strategy is to preserve and make the most effective use of the capability left over and try to worry as little as possible what is lost.

... Ringing in the Ear

With rare exception, noise in the ear means hearing loss. The noise we hear represents the noise we don't hear. It is as though the brain has a file of tones to which it compares the incoming stream of information from the ear. When the stream is deficient, the brain makes up its own. What the ear can't hear, the brain makes up with tones. This illusion of sound is called TINNITUS (TIN-itus, tin-E-tus, or tin-I-tus, it's all the same.)

Such illusions are common in the brain. The best known example of such an illusion is the phantom limb of the amputee, who still feels the missing part. Ear phantom sounds - tinnitus - can take the form of bells, seashell-like white noise, or ringing. Occasionally, the sound can be organized enough to seem to be recognizable music.

The hearing loss responsible may not be in the part of hearing that we usually measure. In clinical medicine, we focus on the range in which language takes place. The ears can detect sounds both higher and lower than the language range. Normal hearing also includes higher frequencies that give information about the size of the space we are in or the direction from which the incoming sounds are coming.

Often the actual hearing loss isn't ordinarily noticeable at all; all we are aware of is the ringing. When the hearing loss occurs rapidly, the noise is loudest. It seems to become less of a problem by the anniversary of its onset when the hearing loss stabilizes or changes slowly.

Of all the symptoms that bring patients to a doctor, tinnitus is the one about which we can do the least. When the hearing loss is caused by wax in the outer ear passage, or fluid or pus in the middle ear, it is easy to fix. Rarely, the noise is not an illusion, but a sound, called a bruit, caused by splashing in the blood vessels around the ear. Unfortunately, the most common cause by far is a nerve type of hearing loss that we cannot yet fix.

Treatments for the tinnitus itself involving niacin or other blood vessel dilators have been popular over the years. There is no real proof that they work. Acupuncture also has been tried. No proof exists that it works either. Various tinnitus masking devices have been promoted as the answer to the distress of ear noises. In spite of their high cost, the custom fitted maskers have never proven to be any more effective than a well fitted hearing aid.

The simplest technique for dealing with tinnitus is environmental masking. The noisier the environment, the less bothersome is the tinnitus. An extreme example occurred in industry. Workers who had tinnitus because of noise induced hearing loss were only comfortable in the same hazardous work noise that drowned out their tinnitus for a few hours. They resisted ear plugs and ear muffs because they made their ears seem to ring louder!

Tinnitus causes the biggest problem when one is trying to fall asleep. Commercial sound generators are available that create the soothing noise of crashing surf. I recommend the use of a hot steam vaporizer in the bedroom in the winter, and a fan in the summer. When one is active,

the noise is less of a problem. Sometimes a mild sedative is helpful in the very beginning.

The best answer to tinnitus - other than correcting the hearing loss -lies in the mind techniques of the Indian subcontinent. The cultures of that area have developed mind disciplines that allow them to feel no pain, alter their blood pressure and pulse. The techniques involve meditation and often are imbedded in their religions. This makes them hard for us in the scientific West to learn. We similar techniques in autohypnosis and biofeedback, but we have along way to go to catch up. What we are looking for is a way to change the shape of the spotlight of attention we call our consciousness.

... Stuffy Nose - Runny Nose

1. How the Nose Works:

How easy the nose is to breathe through and how wet it is depends on the combination of (1) fixed architecture and (2) structures which adjust their size and degree of wetness.

The anatomy of the nose - the architecture - is the arena in which nasal breathing takes place. The nasal passage looks like the attic under a pitched roof, only with a wall down the center dividing it into two parts. Shelves called turbinates run along the side walls of the space. Turbinates can expand or contract in order to open or close the space. The wall between the two sides of the nose, the nasal septum, continues to grow throughout life. If one inherits a septum which is destined to be too big for one's nose, the septum will have to buckle to fit and contributes to obstruction. If the pitch on the "roof" is too steep, making the nose too narrow, there is less room for the septum to twist.

Shelves on the side walls of the nose, in addition to the ability to expand and contract, have the job of secreting mucus into the nose.

This architecture forms an arena in which a tug of war takes place. How swollen and wet the turbinates are depends on two competing streams of instructions coming through the housekeeper nervous system. This system, the autonomic, is the same system which controls basic functions such as heart rate, blood pressure, and the progress of food through the gut.

One set of these forces, mediated by the sympathetic side of the autonomic nervous system, keeps the nose open and dry, by shrinking the shelves or turbinates and reducing the amount of mucus being secreted. The other side of the autonomic nervous system, the parasympathetic side, sends a constant stream of instructions to keep the nose swollen and wet. Where the nose is at any one time actually depends on the balance between these two sets of forces. This balance changes throughout the day. Every two hours one side of the nose will close and the other side will open. This balance is also affected by gravity so that when one lays down there is more of a tendency of the nose to be blocked up.

The sinus cavities are off to the sides of the nasal corridor. They have no direct effect on nasal breathing. Sinuses are auxiliary mucus generators only. The mucus linings of the nose and sinuses have a conveyor belt quality (as a result of ciliary activity) which causes the constant normal lubricating mucus to stream backward in the nose down into the throat where it meets another stream always being generated by the lungs. The combined flow from the nose and the lungs is designed to be swallowed, not expectorated, so the mucus can be decontaminated in the stomach and the components recycled by the digestive system.

2. Blockage and Wetness:

A blocked, stuffy nose means the balance of forces has shifted in the direction of

over-secretion and closure. Surgical procedures which change the shape of the nose for appearance reasons usually diminish the amount of airway available for the function of the turbinates and the growth of the septum. Occasionally, nasal fractures can produce the same results. Over-the-counter nose sprays if used longer than two days will reverse their effects and block the nose by swelling turbinates. The most common example of a shift in the balance is the cold which moves the balance temporarily but dramatically in favor of the wet, blocked nose. Hayfever accomplishes the same thing. Less obvious causes include the fluctuating levels of estrogen that accompany the menstrual cycle, since the hormones which are primarily designed to control the surfaces in the genital tract have echoes in the airway. All of these effects are magnified in the dry air. Medications which change the balance in the housekeeper system such as those used for controlling blood pressure or stomach cramps have nasal side effects. Finally, infection in the sinuses can affect the balance although this is uncommon.

The distress experienced from a blocked nose reflects how dependent one is on nasal breathing. Just as most people are right handed and a few are lefties, so most people are nasal breathers, but some are mouth breathers. The degree of blockage which causes great distress in one person may not cause any problems for somebody who finds it easy to switch over to mouth breathing. Young children with their characteristically runny noses often are less bothered by the blockage than their parents.

3. UNBLOCKING THE NOSE:

Simple adjustments in the environment are often sufficient to improve nasal function. Avoidance of smoking, avoiding known allergens, and the regular use of a humidifier during dry conditions will promote good nasal function.

Antihistamines and decongestants are occasionally helpful, but often wind up increasing the difficulty because they dry the nose and decrease the efficiency of the ciliary conveyor belt. The best medications available are steroids in one form or another. Steroid sprays for the nose have revolutionized the management of nasal obstruction. Although probably safe when used daily, their long term side effects have not yet been completely worked out.

Steroids taken internally in short courses avoid possible undesirable side effects and are the best decongestants available. Antibiotics are unblockers on those rare occasions when bacterial infection is the cause of nasal obstruction.

Surgery corrects architectural types of nasal obstruction. Sinus surgery attempts to increase ventilation of the sinuses, diminish the output of mucus, and improve the efficiency of the mucus transport mechanism. Reshaping of the septum and turbinate reduction surgery bring the inside of the nose into harmony with its outside framework, making the nose less likely to obstruct.

... Dry Air

Many problems result from the prolonged breathing of dry air. Desert air, or air that has been dehydrated by heating or air conditioning, may be dry enough to cause a burn like irritation in the nose and throat.

The linings of the nose and throat are lubricated and protected by a thin layer of mucus. This mucus is partially composed of water and the thickness or thinness (viscosity) depends on the proportion of water to other complicated chemicals. The purpose of this mucus is to keep the membranes underneath from drying out and to help protect the body from invasion by germs.

When we breathe dry air for long periods of time, the layer of mucus becomes thick and ineffective. The first to dry out is usually the nose. Drying out of the protective mucus blanket in the nose is what exposes blood vessels to the dryness and is the usual cause of nosebleeds during the winter months. The body's first defense is to make the lining inside the nose swell up. Occasionally, we see the nose actually start to become extra watery in an attempt to correct the problem.

When the nose becomes stuffy, we begin to breathe through our mouths and the mouth becomes dry. The dryness begins to extend to the back of the throat and to the voice box, leading to sore throats and laryngitis. This is why we often wake up in the middle of the night looking for that glass of cold water. In children, the effects of dryness in the back of the nose can be severe enough to cause problems with ventilation of the ear, leading to fluid in the ear and ear infections.

We can tell when our homes are too dry by using a hygrometer, a device like a thermometer, which tells us what the relative humidity in the house is. It is probably better simply to observe whether or not there is condensation on the windows and whether or not there are sparks of static electricity when we dress or switch on a light. When there is no condensation on the windows or when static electricity sparking occurs, the air is probably not suitable for breathing for prolonged periods of time.

There are many ways to correct the dryness of the air. The least effective way is to put pans of water out. The rate of evaporation just doesn't keep up with the need. One simple approach is to use a two gallon vaporizer. We recommend the cold mist type when there are children about and the hot mist type when there are only adults involved. Either will really suit our purpose, but it is safer to have the cool mist near children and quieter to have the hot steam near adults. We suggest the use of such a device in at least the bedroom since it is the one place where most of us spend a few fixed hours a day. Distilled water produces less film on the furniture.

A better solution is the use of a tank type, furniture-like humidifier which can contain from eight to twelve gallons of water and which will regulate itself depending on the humidity setting you choose. They occasionally need cleaning, but are well worth the effort, since they don't have the tendency to soak the surrounding area that the smaller vaporizer does. No medicated additives are required for either device. The humidifiers tend to develop a musty odor which can be effectively combatted by the use of two tablespoons of household bleach to be added to every ten gallon refill of water. These can be purchased at furniture stores and discount stores and come in a variety of sizes and prices. Vaporizers are available at drug stores as well. It will pay to shop around or consult the Consumer Guides. Be sure that the humidifier that you buy is a standard model for which replacement parts will be available. It is a good idea to purchase a supply of belts and other replacement components at the time that you purchase it so that you won't be stuck if the model changes.

If you don't have a humidifier built into your forced hot air heating system, don't put one in. They are expensive and aren't quite as good as the free standing tank type. The new ultrasonic nebulizers are finally becoming an affordable alternative. Of course, the purchase of such devices should be considered a tax deductible item, since you will be doing it primarily for health purposes.

Adding a humidifier to your home brings many benefits. There will be fewer annoying static sparks; the dust will not cling to surfaces; your furniture will last longer because the glue will not dry out; fuel consumption will fall, because it takes less heat to eliminate the chilly sensation which occurs when water evaporates from the surface of the skin; your house plants will thrive in a humidified atmosphere. Most importantly, however, you health will be improved.

... Sinus Headaches

Most headaches referred to as sinus headaches aren't. The pains sinuses produce on rare occasions are mild, vague, usually on one side, and not precisely located. The most common symptoms of sinus disease are numbness of the sinus and the overlying skin.

"Sinus headaches", named by Madison Avenue, actually arise in the structures inside the nose. The nose is divided into two parts by a wall between the two sides, referred to as the nasal septum. The pathways for air flow in the nose are controlled by shelf-like structures on the sidewalls of the nose called turbinates.

The opening of the nose is triangular with the widest part at the bottom. Depending on the overall shape of the nose, the upper two levels of turbinates come very close to the wall between the two sides. As we mature, most of us develop a twisted, buckled septum.

Depending on the exact shape of the walls of our nose, any swelling in the linings will tend to cause contact between the septum and the turbinates. This contact produces pain. The pain is referred, meaning it is felt not in the nose, but in the eyebrows and underneath the eyes. This very common pain is what is referred to as "sinus headache".

Anything causing the linings to swell, especially in a tall, narrow nose, can produce contact. Common causes include allergy, dryness of the air, hormonal changes, infection, smoking and rarely, sinus infection.

Medication sometimes helps. It is occasionally possible to change the architecture in the nose in a way that lowers the chances of contact, regardless of the cause. The surgical procedures have a success rate of about eighty percent.

Nasal headaches are often involved as a component of the combined headache syndrome. They are often the easiest part of the syndrome to treat.

... Avoiding Nosebleed

First of All ...

Bleeding from the nose is frightening, but as spectacular and as scary as it seems, is rarely, by itself, a serious threat to life.

Nosebleeds are not associated with strokes or brain tumors. They are not caused by high blood pressure, although they can be difficult to stop in patients who have high blood pressure. There is one constant feature of nosebleeds: they are messy. When your nose bleeds, wear old clothes.

Where ...

Nosebleed episodes always come from one spot at a time in the nose. They don't appear that way once they get going, but they always start and continue to bleed from one spot. On the side that starts, the blood usually comes out in front first, clots and plugs that side of the nose. Next, the bleeding finds it way to the other side of the nose and begins to fill up this side also. Once the other side is filled and plugged, blood begins to go down the back of the throat and the patient can begin to spit blood from the mouth.

As dramatic as all this seems, the bleeding is still, just about every time, coming from one spot. There are two general areas where the nose tends to bleed. The most common area is the soft part of the nose in the front. The other major area is back in the bony part of the nose. Methods necessary to control each kind are quite different.

Why ...

Bleeding in the nose begins in a three way combination of (1) an exposed blood vessel, (2) damaged by either picking or dryness of the air; the bleeding results is (3) magnified by any factor that might "thin" the blood.

The exposure of the blood vessels can be a result of the particular shape of the passageways in the nose causing the in-and-out flow of air to bounce off an exposed corner. Excessive use of nasal decongestant sprays, injuries or previous surgery or hormonal changes can reduce the natural thickness of the linings. Some families have a tendency to have abnormal blood vessels very close to the surface of the linings in the nose.

When the humidity of the air falls, the linings of the nose dry. How dry is dry enough to bleed depends on the individual and on those other factors discussed above. The nose is designed to provide moisture missing in the air we breathe. The nose takes the brunt of the trauma that inadequately humidified air produces. Picking is usually is an answer to the itching, which is often the result of allergy or drying.

Impaired clotting occurs in many clinical situations either intentionally, as an accompaniment of medications used to treat other diseases, or, rarely, on an inherited basis. Anticoagulant medications such as coumadin are an important part of the treatment of certain vascular diseases and dialysis patients. Aspirin and its chemical cousins necessary to control arthritis may interfere with the clotting mechanisms and produce some degree of anticoagulation. Finally, inherited disorders of coagulation such as hemophilia causing thinning of the blood. Precautions that prevent nasal bleeding will enable you to continue to use these valuable medications safely, and reduces the chance of bleeding in those who have an increased tendency for any other reason.

How ...

Prevention begins with minimizing as much as practical the factors which cause the bleeding. Patients who take anticoagulants must follow their doctor's instructions for testing and dosage carefully. If the bleeding is the result of a clotting factor deficiency, then strict attention to whatever medical treatment is prescribed is critical. Women whose periods have been irregular are encouraged to pay close attention to the possible need for estrogen replacement so as to avoid drying of the linings of the nose, which echoes the drying often noted in the genital tract, by taking estrogen systemically or by applying it directly to the nose. Of course, over the counter decongestant nose sprays should be avoided as should any mechanical kind of picking or trauma.

Because drying is so often the factor that triggers the bleed in the first place, humidity is the environmental factor most important to control in preventing nosebleeds. Liberal use of the over-the-counter saline type nose sprays (such as Ocean, Ayr or NaSal) should be a habit in anybody who has a tendency to have nosebleeds. It's best to use the prepared types available in the drug store. If the proportion of salt in the mixture isn't quite right, homemade salt solution may cause more irritation than benefit. Plain tap water in areas where the water tends to be "hard" is better than a salt mixture made inaccurately.

By night, the best strategy is to correct the dryness in the bedroom. There are many ways to correct the dryness in the air. The least effective way is to put pans of water out. The rate of evaporation just doesn't keep up with the need. One simple approach is to use a two gallon vaporizer. Either hot or cold vaporizers will really suit our purpose, but it is safer to have the cool mist near children and quieter to have the hot steam near adults. We suggest the use of such a device in at least the bedroom, since it is the one place where most of us spend a few fixed hours a day. Distilled water will prevent a film on the furniture.

A better solution is the tank type, furniture-like humidifier which can contain from eight

to twelve gallons of water and which will regulate itself depending on the humidity setting you choose. They need occasional cleaning, but are well worth the effort, since they don't have the tendency to soak the surrounding area that the smaller vaporizer does. No medicated additives are required for either device. The humidifiers tend to develop a musty odor which can be effectively combatted by the use of two tablespoons of household bleach to be added to every ten gallon refill of water.

Tank type humidifiers can be purchased at furniture stores and come in a variety of sizes and prices. Vaporizers are available at drug stores as well. Be sure that the humidifier you buy is a standard model for which replacement parts will be available. The new ultrasonic nebulizers are finally becoming an affordable alternative. Of course, the purchase of such devices should be considered a tax deductible item, since you will be doing it primarily for health purposes.

What ...

When your nose bleeds, don't panic. Sit up. If the bleeding is coming from the front part of your nose, stop it by firmly grasping the soft parts of the nose and pinching them together for ten minutes -- by the clock. After ten minutes have passed, you can gradually relax the pressure on the nose until it falls open. Don't try to remove the clots or blow your nose. If the bleeding stays stopped, remain relatively inactive for the next 24 to 36 hours , sitting upright for as much of the period as is practical. On the following day, you should begin using the saline nose sprays.

For the first week after a nosebleed, it is important not to blow your nose or disturb the crusts in any way. They are crusts which, as anywhere else in the body, are protecting the healing site. They will crumble and separate by themselves as the healing process is completed over the next week.

Some apply ice to various parts of the head and lips although there is no proof that this makes any difference. I don't recommend it. Sitting with the head back hides the bleeding, but causes one to swallow the blood and become nauseated. Avoid doing this. Throwing up swallowed blood is even more scary and spectacular than having the nosebleed in the first place and will probably start the nose bleeding again.

If the nose bleeds more than a quarter of a cup, or for longer than fifteen minutes, call your physician or your local Emergency Room for further instructions.

... Jaw Joint Pain

In adults, the most common cause of ear pain is trouble with the jaw joint. This is because of the way the jaw joint develops in the womb.

The original jaw joint that first develops in the baby becomes part of the sound conduction system deep inside the ear. The jaw joint that we are born with is an ingenious make-shift joint which works by moving the jaw bone in a sling of muscles. The amount of opening the jaw is limited by the muscles. The amount of closing of the jaw is limited by the teeth. The side to side movements are, of course, limited by the muscles. The muscular suspension of the jaw includes the muscles on the sides of the head, back of the neck and even downward toward the shoulder blade.

When this complicated suspension is thrown off or over-stressed, one or two of the muscles involved will go into painful spasms. The spasm makes the muscle shorter and distorts the sling. The movements of the jaw become abnormal and create further stress and strain on the rest of the sling. Of course, this generates more abnormal movement and increases the mechanical stress. This cycle of increasing spasm, pain and abnormality leading to more spasm. Pain and abnormality becomes self-generating.

The event which triggers the process can be something as small as yawning too widely, excessive use of chewing gum, or a broken filling which abruptly changes the way in which the teeth hit. Some of us respond to emotional stress by grinding our teeth in our sleep.

The symptoms of jaw joint problems, in addition to ear pain, may include muscle tension headaches located primarily on the side of the head, limitation of movement of the jaw, pain in chewing or after meals, shoulder pain and neck pain. The joint itself may or may not become tender to the touch. Arthritis, actual damage to the jaw joint itself, is uncommon; it is usually the result of many years of jaw joint dysfunction. It rarely is the cause of jaw joint dysfunction.

The principles of treatment are the same as for any pulled muscle: rest, heat, and mild analgesics. The best way to rest the jaw joint is to use a bite block. A bite blocker can be improvised by simply a pencil between the teeth for as much of the day as is practical. Holding the pencil between the teeth without chewing keeps the jaw motionless. Much communication can still take place. Soft foods, such as scrambled eggs and mashed potatoes, should make up the diet for a few days resting the jaw joint. Obviously, chewing gum is fobidden! Many patients find a heating pad helps soothe the pain. Aspirin or Tylenol taken every six hours for the pain is occasionally adequate. Often it is necessary to prescribe a muscle relaxant.

Five days of heat and pain medicine is usually enough to break the spasm. If the pain recurs, it may indicate a defect in the dynamics of the bite and means a visit to the dentist should be scheduled.

... Bad Breath

Bad breath was created and exploited by Madison Avenue. In the 1930's and 40's, toothpaste manufacturers studied ways to expand their sales. At first, they noticed that people enjoyed a fresh taste in the morning. During those early marketing studies, they found people who also welcomed the smell. This became a brand new reason to buy toothpaste. The advertising industry began to promote the idea of bad breath as a national problem. This campaign built an enormous industry.

The part the mouth plays in the contents of the breath has been much exaggerated. Occasionally, illness is responsible. Liver failure has an odor as distinctive as the sweet smell of the diabetic out of control. Foreign bodies in the nose or upper pharynx can cause a distinctive smell. Arsenic poisoning produces an almond odor. Fever in children changes the breath characteristics dramatically. The list of illnesses, though, is short and accounts for a minority of cases. Inadequate hygiene practices are almost never a cause.

Most bad breath is caused by natural metabolic processing of foods. The contents of the air exhaled from the lungs depend on the metabolic components in the bloodstream. The foods we eat travel to the stomach, where digestion begins. As the food is processed by the digestive enzymes of the intestinal tract, complex molecules are delivered to the liver. In the liver, they change further and pass to the blood stream, to be carried to other parts of the body for use or disposal. The stream of blood leaving the liver passes through the lungs to pick up oxygen and give off carbon dioxide. With the carbon dioxide go the odor chemicals. Processing a food can take one or two days.

Exactly how complex food molecules are divided up and modified is as unique to each of us as our fingerprints. If we all were to eat the same meal, we would all have different breath odor results from it. Some of us can eat garlic for breakfast, and by noon not a trace of odor will persist. Others among us can eat a garlic spiced meal Saturday night, and Thursday the world can still tell.

Courting signals in all animals include visual, touch, and odor cues. Odors are an efficient mechanism for controlling mating, preventing animals from inbreeding within its litter. Rat olfactory (smell) organs consist of the same proteins as their blood and tissue typing factors. The smell organs in our nose are unique to each of us, tuned to our genetic makeup. We use deodorants and perfumes in our courtships to adjust our attractiveness. Odors become part of memories and form part of how they are indexed. Smells are powerful triggers for memories and moods.

We all smell uniquely, both in what we perceive and what we give off. Mismatches happen. A person might ingest a food that makes the breath offensive to another individual. The mismatch can be so specific that to yet others, the whole episode goes unnoticed. Often, the bad breath that the person detects on themselves is not detectable by anyone else. Occasionally, the sense of smell of the complaining party has changed, either in response to illness or medication.

The breath of the subject might not be the cause of the complaint at all.

Undesirable breath requires an orderly approach. Consulting a physician will exclude the few diseases that might be responsible. The next step is to keep a food diary for an extended period, say, a month. Circling the occasions bad breath happens shows up a pattern of foods responsible in the previous days. If no pattern shows up using this method, a more elaborate step can be taken.

For two weeks limit the diet to rice. Salt is the only seasoning allowed. After this period, the metabolic system clears. Introduce foods one at a time. Eventually the offending item declares itself in the breath, and can then be avoided. Usually it will turn out to be a spice. The most convenient and simplest method of handling possible bad breath is to use the masking odor of a breath mint. Sugarless versions are safer for the teeth.

Often, bad is the judgment we make about the natural changes in breath contents caused by foods. Bad breath is not a sign of rotting or poor hygiene. It is never an indicator of the value of any person!

... How to Stop Smoking

Smokers started smoking for social reasons. They imitated people that we admired or else became associated with a group of people and took the same habits and dress that the group had. The reasons they continue to smoke are very different from the ones which caused them to start.

Among us are two groups of people: smokers - people with a physical tendency to to become smokers, and non smokers. Some of us can smoke for years and then for some reason be motivated to stop and have no difficulty whatsoever in stopping, as it were, in mid-cigarette. They are probably non smokers.

Some of patients became so locked into smoking that stopping becomes a major life project. They probably inherited a metabolic defect which some component of the smoking activates, creating a biochemical hunger. Every time we smoke we both satisfy that biochemical hunger and increase the drive for the next cigarette. For people who have this metabolic lock on nicotine, smoking stops being pleasure and certainly is no longer a moral or character issue. We don't smoke because we are too weak to quit, we smoke because our lock is so strong.

A nicotine addict has a dreadful time stopping. One strategy that really works is substitution. Without substitution the metabolic drive will eventually overcome what willpower is being used. The drive to smoke or chew takes about one year to reach a manageable level. During this year, food is the only substitute powerful enough to block the drive generated by smoking dependence.

Dedicated quitters should give themselves permission, on behalf of eliminating this powerful dependence, to gain up to twenty pounds during the course of one year. The average weight gain is about fourteen pounds. Purchase clothing at the start, for temporary use, which will accommodate the weight gain. No diet or weight control program should be contemplated for one year. Most people who are initially unsuccessful fall back to smoking within six to nine months. One year must be allowed for this project.

The addiction always speaks to the quitter.

Addicts hear themselves say this is not a good day to stop. Perhaps we have just bought this pack of cigarettes. There is never, never a good day TO smoke!

Another rationalization is confession. The addict agrees to stop, but is forced to postpone the project by some upcoming "stressful" event. Nicotine is a stimulant. Nicotine will increase stress and anxiety, not reduce it. This excuse has been the addiction talking.

Patients who quit remember fewer sore throats, nasal discharge and less coughing while they were smoking. This effect happens as the local anesthetic effect of the smoking wears off. Smoking kills the pain from the damage caused by the last cigarette, cigar, or pipe. This is part of why smokers keep picking up one cigarette after another. When they stop smoking, they

regain sensation in their airway and begin to feel the damage, even as it is healing. Again, it has been the habit talking.

At about six to eight months, ex-smokers become confident they are quite independent of smoking. They are proud of their accomplishment. When they see cigarettes they can either take them or leave them. Of course, just once, they take them, and within a day or two can be back to full fledged smoking. This, again, was the habit talking.

None of this is moral weakness and none of it indicates a personality defect. This is an ingrained metabolic affliction. Realizing this should not make one think that one cannot stop smoking because of the strength of one's metabolic lock. This, too, would be the habit speaking.

A realistic attitude, plus reasonable substitute behavior can get us through the period of time it takes to allow the hunger to extinguish.

Physicians can help with some pharmacological tools to help with the first few weeks of intense craving. Behavioral modification techniques and hypnosis have an important, but temporary, roles in getting through the initial period of high metabolic demand for smoking.

Commitment of the smoker is the absolute requirement in order to stop. It is that simple. Being simple doesn't mean it is easy. The problem becomes only one of when to start. There is nothing wrong with right now. Any argument against right now is the habit talking.

... Mouth Breathing

During our first month of life, all of us must breathe through our noses. Infants born with a blockage of both sides of the nose are in danger of being lost.

During the first year of life, we all learn to breathe through our mouths. Some children become so adapted to breathing through their mouths that they appear not to need to breathe through their noses. They may continue to breathe through their mouths until teen age. There are some adults who never switch back and remain mouth breathers, especially when they sleep.

The adenoid lymphatic masses which develop in mouth breathers may be a response to mouth breathing and not a cause.

Snoring is another part of the nose breathing/mouth breathing problem. By itself, snoring is usually more bothersome to the listener than harmful to the snorer. There is some evidence, however, that snorers who have breathing pauses greater than 10 seconds - 5 seconds in children - may be at some risk and should be studied more carefully.

... Dizziness

Knowing where we are - moving or stationary, vertical or horizontal, right side up or upside down is so important the nervous system constantly tracks and compares several kinds of incoming information. Our balance system not only tracks where the body is as a whole, but knows the locations of all the individual body parts.

Standing up and walking depends on three streams of incoming information. Proprioception is the technical term for the stream from the skin, muscles, joints and ligaments that tells us about our posture and the changing pattern of pressures, stresses and strains of gravity and motion.

Vision provides a second stream of balance information. The optics of the eyes track the horizon, measure distance, and estimate velocity. Very precise information about what the muscles of the eyes have to do to keep moving objects in view determines how much the neck must turn to follow them. Of course, the eye control centers must compensate for what the rest of the body is doing so that our field of view doesn't get jerked around every time we make a move.

The third stream comes from the ears. Each ear contains a vestibular apparatus which senses which way is down. Each ear can tell if it is moving, and if so, in which plane - side to side, up or down, forwards or backwards. Locked deep within the ear bones of the base of the skull are channels full of fluid. The walls of the channels have patches of hairy tissue that looks like microscopic plush carpet. When the skull moves, the hairs bend in the fluid and send information to the balance center in the brain. Two special patches on each side have a kind of gelatin on the hairs in which is imbedded several calcified stones, like raisins in jello. When we change position, gravity pulls on the stones bends the hairs and sends the to the brain. This clever little mechanism is specially adapted for in the front part of the bone by being tuned for frequencies, accounting for the odd combination hearing and balance in the same organ.

The balance centers of the brain seem to process these rivers of incoming information by comparing them. They must all match up. If one ear is moving front other should be moving back to front. If the feet report the floor is coming up, the eyes should be saying that the horizon is falling, and the ears that we are moving. When they don't match up, an alarm goes off! The illusion of motion the confusion causes is called vertigo. If the mismatch is severe enough, activity in the balance center spills over into the vomiting control center and we become nauseated. We experience this level of alarm as motion sickness or sea sickness. Not all balance disorders create this dramatic alarm. Occasionally, increased clumsiness or vague nausea are the only signals, especially when the entire system instead of one part malfunctions. As occurs every where else in the nervous system, the balance processing centers give the most attention to the newest information. The brain tends to ignore things that have been going on steadily for a while.

Confusion can occur when we try to describe these feelings. American English uses the word "dizzy" for two different symptoms. British English uses the word "giddy" to describe the

lightheaded, fainting sensation which practically never is a balance or ear symptom. "Vertigo" in Britain, and in proper medical terminology, refers only to the illusion of movement felt because of some malfunction in the balance mechanism.

Balance disorders are complex puzzles. Fortunately, the more intense the symptom, the more likely it is to be coming from the ears and not the brain. It is also true that the intensity of the sensation reflects the degree of confusion in the processing center, not the seriousness of the disease. This can be hard to believe as the world swims and the stomach empties.

Often all the testing in the world won't tell us what caused a first episode of vertigo. We have to wait for more to happen. Many of the diseases are so slow moving, that it may take years for an accurate diagnosis to be made, because years may pass before any more symptoms show up.

Dealing with Dizziness

Vertigo can be controlled. During the acute intense spell, medications are available as patches, pills, injections and suppositories which turn down the volume of confusing activity in the balance center in the brain. Unfortunately, many of them turn down the whole brain and cause sleepiness. Some are habit forming. Still, they are welcome tools in managing a spell.

For the long haul, though, the best way to deal with vertigo is to teach the brain to adapt to the confusion. The principle is to assume that your vertigo is your friend. The more you seek it out, the gentler it becomes. The ballerina and figure skater are able to do what they do because their practice sessions force their balance centers to adapt. Special exercises called vestibular habituation routines been devised and are available in many physiotherapy or rehabilitation departments.

Prevention of falls is an important goal of vertigo treatment. Two strategies are used: substitution and training.

When one stream of information is damaged, increased flow from the other streams can partially substitute. If the ear, for example, is damaged, the eyes become more valuable in balancing. The same can be said of any part of the flow, -the other two can nearly completely compensate. Occasionally, symptoms won't begin until a second part of the stream is interrupted. For example, a person having difficulty sensing the position of leg muscles because of nerve degeneration begins to fall in the dark as the loss of vision reduces the flow of information below the minimum needed to stay upright.

Substitution means night lights are mandatory for any one with a failing balance system or vertigo. Open spaces without nearby objects for the eyes to focus on give the smallest amount of supporting information. Holding on to walls and railings instinctively provides welcome touch information via the proprioceptive system, as does a cane or walker.

Balance training can be postponed until the strongest part of a dizzy spell passes. Square dancing aerobic exercise, and waltzing are more fun than physiotherapy and may be as effective. In the beginning, these activities will be difficult and scary. The wrong strategy is to hide from the vertigo by becoming less and less active. One or two hours of spinning activities a week will help prepare the balance system for further spells and make them milder.

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