CHAPTER 3

CLEARING AIRWAY OBSTRUCTIONS AND CPR

3-1. CLEARING AN OBSTRUCTED AIRWAY.

a. Signs of obstruction in a conscious patient:

(1) Heimlich sign; hand to throat, as illustrated below.

Universal distress signal for choking.

(2) Inability to speak.

(3) Wheezing sounds and an effort to breath.

(4) Cyanosis appearing.

b. Signs in an unconscious patient:

(1) Chest not rising.

(2) Cyanosis.

c. Treatment:

(1) With your fingers sweep mouth and throat of foreign material.

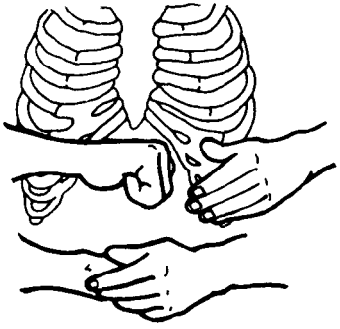
(2) With the heal of the hand deliver four sharp backblows between the patient's shoulder blades, as illustrated below.

Back blow, standing.

(3) Perform abdominal thrusts:

(a) Stand behind the patient and wrap your arms around his waist.

(b) Place the thumb side of your hand against the patient's abdomen slightly above the navel and below the rib cage, as illustrated below.



Hand placement for abdominal thrust.

(c) Grasp your fist with the other hand and press into the patient's abdomen with a quick upward thrust; repeat this four times.

(4) Repeat the backblows and abdominal thrusts until airway is clear.

(5) For a prone patient:

(a) Position patient on his back.

(b) Kneel astride patient's hips facing his head.

(c) Place one hand on top of the other and position the heel of your bottom hand on the patient's abdomen, slightly above the navel and below the ribcage.

(d) Press into the patient's abdomen with four quick upward thrusts.

(6) If the obstruction is not dislodged within a few minutes, perform an emergency cricothyroidotomy.

3-2. CARDIOPULMONARY RESUSCITATION.

a. Procedure for CPR with one or two rescuers.

(1) Establish unresponsiveness by gently shaking the patient and shouting "Are you OK?" If there is no response, turn the patient flat on his back and call out for help.

(2) Establish breathlessness by kneeling beside the patient;

hyperextend his neck. Place your ear over the patient's mouth and observe for chest rise (look, listen, and feel) x 5 seconds.

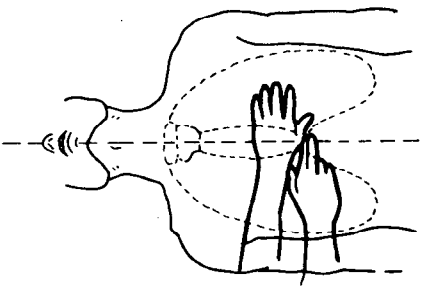
(3) If patient is not breathing, give four quick ventilations, not allowing all the air to escape between each ventilation in order to give a stairstep effect and maximum aeration of the lungs.

(4) Check for a carotid pulse.

(a) If a pulse is present, continue with mouth-to-mouth resuscitation at 12 ventilations per minute. Check for pulse and for return of spontaneous breathing after each cycle of 12 ventilations.

(b) If pulse is absent, rescuer begins CPR.

1. Initiate CPR by locating the notch where the sternum and the bottom of the ribcage meet. Place the middle finger of the lower hand on the notch and the index finger on the lower end of the sternum. Then place the heel of the other hand on the lower half of the sternum next to the index finger, as illustrated below.



Hand placement.

2. Performance standards for CPR should be in accordance with the following chart.

CARDIOPULMONARY RESUSCITATION

COMMENTS	ADULT (ONE-MAN)	ADULT (TWO-MAN)
Rate of compression	80/min	60/min
Use of hands	2 hands	2 hands
Depth of compression	1 1/2-2 inches	1 1/2-2 inches
Resuscitation only	1 per 5 sec 12/min	1 per 5 sec 12/min
CPR	15 comp 2 vent	5 comp 1 vent
Checking pulse	carotid	carotid
Breaths	full-double size	full-double size
Mouth placement	mouth-to-mouth (nose)	mouth-to-mouth (nose)
Head tilt	hyperextension	hyperextension

COMMENTS	CHILDREN	INFANTS
Rate of compression	100/min	100-120/min
Use of hands	1 hand	2 fingers
Depth of compression	3/4-1 1/2 inches	1/2-3/4 inches
Resuscitation only	1 per 5 sec 12/min	1 per 3 sec 20/min
CPR	5 comp 1 vent	5 comp 1 vent
Checking pulse	carotid	over left nipple
Breaths	regular	puffs of air
Mouth placement	mouth-to-mouth (nose)	mouth-to-mouth and nose (both)
Head tilt	hyperextension	tilt (no hyperextension)

CHAPTER 4

MENTAL DISORDERS

4-1. Many different forms of mental disorders have been named and described, and each may vary greatly in signs and symptoms. Even psychiatrists may have difficulty in diagnosing a particular case. The nervous system section is important to review and consider when evaluating and treating mental disorders. Organic factors may be responsible.

a. Terminology.

(1) Anxiety: Feeling of tension due to real or imagined danger.

(2) Compulsion: An irresistible urge to act against one's better judgment and will.

(3) Delusion: A false fixed idea that cannot be erased by reason or evidence.

(4) Hallucination: Imaginary sensory perception without actual stimulus, either visual and/or auditory.

(5) Insight: Awareness and acceptance of oneself and one's problems.

(6) Illusion: A false interpretation of a real sensory stimulus.

(7) Mental hygiene: The development of healthy mental and emotional reactions and habits.

(8) Neurosis: A functional mental disorder with feelings of anxiety in which the personality remains intact and contact with reality is maintained.

(9) Obsession: An irresistible urge to think thoughts one does not wish to think.

(10) Paranoid: Characterized by suspiciousness, ideas of persecution.

(11) Phobia: An exaggerated or morbid fear of something or situation.

(12) Psychiatry: Branch of medicine that deals with disorders of the mind, behavior, and personality.

(13) Psychosis: A mental disorder in which the personality is very seriously disorganized, and the patient is often out of contact with reality. A "major" mental illness.

b. In many cases treatment is long term and requires special facilities. We cannot hope to cover all mental problems and their treatments in one chapter. Of more importance to us is the ability to recognize approaching trouble and what to do about it.

(1) Types of individuals who are more likely to get into

trouble:

(a) The shy, retiring, withdrawn individual, who has little to do with others. He may have insufficient emotional expression that leads to the accumulation of strong feelings.

(b) The braggart who talks too long and loud of his abilities at home, at work, sexually, and socially. He is usually insecure and wants the admiration of others.

(c) The perfectionist who wants everything just so and becomes very anxious when things are wrong.

(d) The sick bay commando who translates his insecurity, worry, and anxiety into somatic complaints.

(e) The man who depreciates himself and is always apologizing is usually becoming depressed.

(2) Changes denoting approaching mental difficulty:

(a) Any persistent changes in mood in a man's behavior.

(b) Tension, anxiety, apprehensive facial expression, excessive perspiration, tremulousness.

(c) Irritability, short temper, abruptness, complaining, and faultfinding.

(d) Frequent accidents or mistakes.

(e) Depression, self-blame, self-degradation.

(f) Withdrawal, escape from others.

(g) Somatic complaints of sleeplessness, nightmares, anorexia, nausea, stomachache, headache, muscle cramps, diarrhea.

(h) Loss of contact, loss of attention, doesn't make good sense, poor thought associations, strange or unexplained behavior, difficulty thinking, memory lapses, lack of correlation between thought and emotional expression.

4-2. PSYCHOSIS. A severe, major mental disorder characterized by various degrees of personality disintegration and failure to test and evaluate external reality correctly. These men are usually without clearly defined physical cause or structural brain changes. The basic types of psychoses are:

a. Manic-depressive reaction: Marked by major mood swings and emotional instability typified by "lows" and "highs."

b. Schizophrenic reaction: Disorientation and separation of personality.

c. Paranoid reaction: Marked by suspiciousness and delusions of persecution and/or grandeur.

d. Alcoholic: Marked by alcoholism and bouts of delirium tremens.

e. Toxic (drugs): Induced by toxic agents such as drugs.

S. and O. Each psychosis is a separate case affecting a separate human being. Not all cases have all the major symptoms. Below is a generally accepted group of symptoms:

(1) Deep depression with feelings of worthlessness. One of the foremost causes of self-destruction.

(2) Abnormal and inappropriate cheerfulness, out of keeping with surroundings or reality.

(3) Loss of contact with reality with strange, bizarre behavior. May be berserk, assaultive, totally withdrawn, etc.

(4) Total withdrawal from a group to such a degree that the patient actually lives in a "world of fantasy."

(5) Delusions and hallucinations.

A. Psychosis.

P. Close supervision of the patient since his condition is characterized by rapid and major mood swings. Establish communication as soon as possible. Fear is often largely responsible for his behavior. Reassure him and appeal to the "well" aspects of his personality. Force and restraints must be used when there is no other way to protect the patient or those around him. Restraints should not be placed over chest and abdomen and should be removed as soon as possible. Tranquilization for the violent or assaultive patient is often necessary. Use antipsychotics for psychotic behavior. Use the following in priority of order:

(1) Haldol (haloperidol) 2-5 mg. IM can be given every hour if needed. The drug of choice for severe psychotic, aggressive, or other uncontrollable behavior problems.

(2) Thorazine 100 mg IM. A greater sedative than (1). Blood pressure must be monitored since it may produce hypotension.

(3) Librium 100 mg IM to relieve anxiety. Especially useful in alcohol or drug abuse.

4-3. PSYCHONEUROSIS. A relatively benign group of personality disorders that arise from an effort to deal with specific, private, internal, and or psychological problems and stressful situations that the patient is unable to master without tension or disturbing psychological devices. The symptoms are numerous and varied. The chief characteristic is anxiety; however, there is good contact with reality. The confusion or symptoms make it difficult to assign a given case to a definite type. The essential consideration is recognition of the condition and the need for treatment. It must be remembered that one neurotic symptom is not a neurosis. All of us occasionally develop one, or even several, under special duress.

S. and O. Anxiety is the chief characteristic and is the most intolerable item to the patient. This anxiety may be free and unbound, such as crying, talking, etc., or expressed as various somatic complaints.

There is good contact with reality. May function effectively until encountering a stressful situation that he is unable to cope with. Often he controls this by various psychological defense mechanism such as repression, etc. Other symptoms may be fatigue, insomnia, lowered work output, inability to concentrate and even paralyzing indecision, feelings of inferiority and inadequacy.

P. Remove the stress situation if possible. Listen to him. Often simple ventilation of his problems is all that is required. Reassure and support him but be cautious with advice. Let him work out his own solutions. Antianxiety drugs are drugs of choice and follow in order of preference.

(1) Librium 10 mg. q.i.d.

(2) Valium 5 mg. t.i.d. (Use IV if anxiety is extreme.)

(3) Phenobarbital 1 gr. tab. q.i.d. P.O.

(4) Noludar 300 to 600 mg. h.s.

4-4. PERSONALITY OR CHARACTER BEHAVIOR DISORDERS. Characterized by defects in the development or structure of the personality, rather than by mental, somatic, or emotional symptoms. These include the antisocial and amoral personality and the sexual deviate. We find this kind of disturbance the most difficult to accept as an illness. These persons seem unable to learn from experience, are incapable of conforming to ordinary rules of society, and are often the "troublemakers" and/or "wise guys." The basic types of personality or character behavior disorders are inadequate or immature personality, emotionally unstable personality, passive-aggressive personality, compulsive personality, and the schizoid personality.

S. and O. (1) Symptoms of inadequate or immature personality are: Failure in emotional, economic, and occupational adjustments. Often good natured and easy going, but inept, ineffective, and unconcerned. Egocentric with childish mannerisms such as temper tantrums, bedwetting, sleepwalking, etc. Difficulty adjusting to new situations, accepting new responsibilities, or in getting along with fellow workers. Often AWOL. Functional somatic complaints with no organic cause such as headache, pain in chest, G.I. disturbance. Often presents self at sick call as an "unwilling warrior." A young man, first enlistment, unwilling to work, etc. He tries to manipulate his environment and those about him to achieve his own ends.

(2) Symptoms of emotionally unstable personality are: Marked tendency to swing and act with his own emotional mood. Exercises little or no restraint. Euphoric, talkative, and "having a ball" with no regard to the consequences of his actions. Anger, temper tantrums, and "mad at the world." A gesture of suicide. This is an attempt to gain some goal, gain concern, show of affection, or removal from a situation. This is not planned to end fatally, but sometimes does.

(3) Symptom of passive aggressive personality are: Antagonistic and subjective to pouting. May be destructive. Stubborn with cynical "biting wit." Shrewd, knows just how far he can go and does. May be manifested by helplessness, a tendency to cling to others as "mama's boy."

(4) Others have such variable range of symptoms that they defy a specific listing.

A. Personality or character behavior disorder.

P. The most important factor is recognizing a person has psychiatric problems and referring him for prompt treatment; do not waste time attempting to diagnose his illness. Try to understand yourself and be aware of your feelings toward the patient. Sometimes it is hard to remember he is sick when his behavior is unreasonable. Try to understand the patient by being an expert observer. What does he tell you by his behavior? "All behavior has meaning." Be an interested and sympathetic listener. This is one of the most effective tools in working with disturbed patients. Giving advice is rarely of any help. Paraldehyde is the drug of choice for any disturbed patient. Opiates are contraindicated. When restraining a combatant patient, be careful that you do not get injured. Keep accurate, comprehensive reports regarding all aspects of the case. These must be kept confidential and it is best for the patient that they are kept from him. Let the psychiatrist decide how much, if any, to tell him.

4-5. ORGANIC BRAIN SYNDROMES. Caused by organic impairment of the brain due to trauma, tumors, circulatory disturbances, metabolic disturbances, convulsive disorders, toxic or intoxicated states.

S. and O. Defects in memory (most recent events). Disorientation as to time, place, person. Sudden personality change with irritability most notable. Hallucinations and delusions. Convulsions to coma.

A. Organic brain syndromes.

P. Depends on the severity of the problem; treat according to the primary presenting symptom. Avoid an aggressive dictatorial attitude. Be calm and treat patient with kindness and understanding. Never argue with a mentally disturbed patient of any kind. If restraint or a treatment is in his best interest, then perform that treatment with a minimum of fuss. Get help as necessary. Even severely disturbed patients tend to respond much better to the calm, straightforward, businesslike approach.

4-6. DISASTER REACTIONS. In this case a disaster does not necessarily involve groups of people; a disaster can pertain to one individual.

a. Emotional injuries are not as visible as a wound or a broken leg, but severe fear, excessive worry, guilt, depression, or overexcitement is evidence that emotional damage has occurred.

b. It is normal for an injured person to feel upset. The more severe the injury, the more insecure and fearful he becomes, especially if the injury is to a highly valued body part. For example, an injury to the eyes or genitals, even if relatively minor, is likely to be severely upsetting. An injury to some other part of the body may be especially disturbing to an individual for his own particular reason. For example, an injury to the hand may be terrifying to a baseball pitcher or pianist, and a facial disfigurement may be especially threatening to some men and most women.

b. Fear, insecurity, anxiety, or guilt may cause the patient to be irritable, stubborn, or unreasonable; he may seem uncooperative,

unnecessarily difficult, or even emotionally irrational.

c. The goals in treatment of disaster reactions are to return the individual to work as soon as possible. Minimize his immediate disability even if prompt return to work is not possible, decrease the intensity of his emotional reaction until more complete care (if needed) can be arranged, and prevent actions harmful to him and to efforts of others.

d. Disaster reactions and helpful measures.

(1) Normal reactions are trembling, muscular tension, perspiration, nausea, mild diarrhea, urinary frequency, pounding heart, rapid breathing, and anxiety.

(2) Underactive reactions (slowed down, numbed) are the most common reaction to disaster. Symptoms are vacant expression, standing or sitting without moving or talking, and individual appears to be without emotion.

Helpful measures include: Establish contact gently--offer a cup of coffee, drink of water, or a smoke, use his name, encourage him to talk and be a good listener. Try to get him to tell you in his own words what actually happened. Show empathy but don't overwhelm him with pity. Find him a simple routine job to do.

(3) Overactive reactions. The individual is argumentative, talks rapidly, jumps right into jobs, and works hard but doesn't complete one thing before starting something else (jumps from job to job), and he usually makes endless suggestions.

Help measures include: Let them talk about it (don't argue with them, and be aware of your own feelings), give them something warm to eat or drink or a smoke, and give them jobs requiring physical activity (make sure they are supervised on the job).

(4) Individual panic (blind flight) is not a common reaction. Symptoms include wild running about, unreasoning attempt to flee, loss of judgment, and uncontrolled weeping.

Helpful measures include: Trying kindly firmness first (don't use brutal restraint, strike them, or douse them with water), use sedatives only as last resort, get help (if necessary) to isolate, and show empathy for their problem.

(5) Physical reactions are severe nausea and vomiting and conversion hysteria (can't use some part of the body).

Helpful measures include: Show them you are interested, try to get them to talk about what happened, make them comfortable, don't call attention to their disability, and try to find them some small job to keep them busy and help make them forget their problem.

4-7. DEPRESSION. May occur in reaction to some outside adverse life situation, usually the loss of a loved one through death, divorce, etc.; financial disaster; or loss of an established role. Neurotic depression differs from episodes of normal sadness in that the patient cannot "shake off" the feeling of dejection and the effect is disproportionately intense and enduring. Any illness, severe or mild, can cause significant

depression. Corticosteroids, oral contraceptives, antihypertensive medications such as alpha methyldopa, guanethidine, clondine, and propranolol have been associated with the development of depressive syndromes. The appetite-suppressing drugs, while acting initially as stimulants, often result in a depressive syndrome when withdrawn. Alcohol, sedatives, opiates, and most of the psychedelic drugs are depressants. Depression accounts for over half of all attempted suicides. The risk of suicide must always be considered when dealing with a severely depressed patient. Suicidal thought should be inquired after, and any suicidal gesture taken seriously.

S. Somatic complaints such as headache, disrupted or excessive sleep, libido, and anxiety are common in most depressive states. With severe depression there may be delusions of a hypochondriacal or persecutory (paranoid) nature.

O. Lowered mood, varying from sadness to intense feelings of guilt and hopelessness. Difficulty in thinking, inability to concentrate or make decisions is usually present in most depression. In severe depression there may be evidence of psychomotor retardation that may progress into a stuporous condition whereas the patient may lie awake in bed but do nothing of his own accord. Responses to external stimuli may be retarded or absent. In agitated depression the patient may be restless, sad, fearful, and apprehensive. They may pace the floor and wring their hands. They may repeat over and over in an explosive manner such words as "damn." Hallucinations are rare; however, they may complain of bizarre symptoms such as "a rotting brain" or "plugged intestines." They may be destructive to property and attempt self-injury or suicide.

A. Depression due to _____. Differential diagnosis: Depression secondary to illness or injury (e.g., brain trauma, tumor, etc.) or drug intake.

P. Show empathy. Observe patient without making them feel they are being watched. Try to get the patient to ventilate. NOTE: Do this by making it obvious that you are sincerely interested in the patient's problems and by being a good listener. Don't interrogate. If the patient is agitated, sedate with either antipsychotic or anxiety drugs (see paragraph 4-3, 4-4). If agitation is extreme or medication is refused, give Valium IM or IV. Be constantly alert for a suicide attempt and evacuate when feasible.

4-8. ALCOHOLISM. There are as many explanations for the cause of alcoholism as there are alcoholics. Professional investigators even disagree on many points. Our society is oriented around an alcohol-serving social environment such as beer ball games, initiation rites, wetting down parties, rating parties, retirement parties, and almost any other excuse that 2 or more people can come up with. Alcohol is a C.N.S. depressant, in any amount, even though the sense of euphoria caused by depression of the inhibitions leads the uninitiated to claim that it is a stimulant. A practical working definition of alcoholism is: When the intake of alcohol interferes in any way with a person's job, family, physical condition, or interpersonal relationships, that person can be considered an alcoholic. It does not matter whether the person drinks all the time, rare binges, or only one drink if the above criteria are met.

a. Alcoholism is classified as:

(1) Episodic excessive drinking: Characterized by becoming intoxicated as often as 4 times per year.

(2) Habitual excessive drinking: The person becomes intoxicated more than 12 times per year or is recognizably under the influence of alcohol more than once per week.

(3) Alcohol dependence or addiction: Determined by direct evidence such as withdrawal symptoms or by strong presumptive evidence such as inability to go 1 day without drinking or continued heavy drinking in excess of three months.

b. There are many problems associated with alcoholism but the most common is delirium tremens (DTs) or alcohol withdrawal syndrome. DTs are caused by withdrawal from drinking after a period of heavy continuous drinking. Usually occurs about 48 to 72 hours after the last drinking bout.

S. and O. Attacks begin with an aversion to food, anorexia, nausea, vomiting and abdominal cramps, anxiety, restlessness, apprehension and irritability, diaphoresis, tremors, talking or mumbling continuously. Picks at imaginary objects in the air, on self, on the bed, etc. Progresses to hallucinations and nocturnal illusions, fleeting at first then becoming constant. These are primarily visual and often are animal in nature with tigers, elephants, bugs, rats, and snakes all being imagined. These hallucinations often incite terror. Patient is suggestive to sensory stimuli, especially to objects seen in dim light. Vestibular disturbances are a common complaint. He complains that the bed is rocking, the room is rotating, and even that the world is "spinning and he is afraid of flying off." The patient may have a grand mal seizure known as "Rum Fit."

A. DTs or alcohol withdrawal syndrome.

P. Place patient on bedrest in a well-lighted space. Avoid loud noises and do not leave him alone. Someone should be present to talk to him and reassure him at all times. Restraints are to be used only when absolutely necessary and then removed as soon as possible. Mylanta or Amphojel may be given to settle G.I. distress. IV therapy with vitamin supplement diet. Maintain sufficient hydration to ensure an output of 25 to 40 cc. per hour of urine. Keep input and output chart. Medications to sedate man should be used with caution since alcohol and tranquilizers do not mix. Sedate with 15 to 20 ml. paraldehyde IM.

Prophylaxis: When a heavy or binge drinker gets a severe case of the "shakes" 2 to 3 days after he has had a drink, the following measures may be used.

a. Valium for acute alcohol withdrawal 10 mg. IM or IV initially then 5 to 10 mg. q.3-4h. if necessary. Continue for 3-4 days as needed then give Valium 5-10 mg. P.O. q.i.d. as necessary.

b. Force fluids and diet balanced with vitamin supplements including B complex.

4-9. DRUG ABUSE.

a. LSD, marihuana, alcohol, and barbituate intoxication are covered in Chapter 14, NBC.

b. Stimulants (amphetamines and cocaine).

S. and O. Acute amphetamine intoxication includes sweating, tachycardia, elevated blood pressure, hyperactivity, dilation of the pupils, and acute brain syndrome with confusion and disorientation.

A. Stimulants.

P. Stimulants can be withdrawn abruptly and withdrawal usually results in lassitude, prolonged sleep, increased hunger and eating, and depression lasting several days to several weeks. Occasionally 3-10 days after discontinuing amphetamines, an abstinence syndrome develops with delirium, sleeplessness, and increased motor activity.

c. Opiate dependency. (opium, heroin, methadone, morphine, meperidine and codeine). Sudden withdrawal from narcotics is not dangerous.

S. and O. (1) Mild intoxication: Analgesia, feeling of euphoria and carefree relaxation, drowsiness, mood changes, mental clouding, occasional anxiety, frequent nausea, occasional vomiting, contracted pupils, and decreased G.I. function.

(2) Overdosage causes respiratory depression up to and including respiratory arrest, nausea and vomiting, deep sleep to coma, pinpoint pupils, peripheral vasodilation, and massive pulmonary edema.

(3) Withdrawal causes craving and anxiety within 4 hours. Yawning, tearing, runny nose, and sweating in 8 hours. Plus pupil dilation, piloerection, tremors, hot and cold flashes, aching bones and muscles, and anorexia in 12 hours. Increased intensity of the above plus insomnia restlessness and nausea, increased B.P., temperature, pulse, and respiration in 18-24 hours. Increased intensity of the above plus curled up position, vomiting, diarrhea, weight loss (about 5 lbs a day), spontaneous ejaculation or orgasm, hemoconcentration, leukocytosis, eosinopenia, and hyperglycemia in 24-36 hours.

A. Opiates. Differential diagnosis: Mild intoxication and overdose are difficult to distinguish from other drug reactions without track marks and fairly reliable history.

P. Overdose. Give antagonist such as Narcan (naloxone).4 mg. IV can be repeated at 5-10 minutes intervals. Results are dramatic. Supportive care and treat complications. Close observation x 24 hours.

CHAPTER 5

NUTRITIONAL DISEASES AND DEFICIENCIES

5-1. GENERAL. Nutritional diseases and deficiencies are usually related directly to ignorance of sound nutritional practice and to poverty. Many people exist on a diet based almost exclusively on one principal starchy staple food--rice, millet, or corn for example. Another factor is parasitic and infectious diseases. These contribute to decreased intestinal absorption, sometimes to increased requirements, and usually to some degree of anorexia. These create a vicious progressive spiral where a diet deficiency is compounded. In most cases where you find evidence of a marked deficiency of one particular substance or group of substances, other deficiencies also exist. The single most important thing in the treatment of nutritional diseases is starting a completely adequate diet.

5-2. PELLAGRA (mal de la rosa, psilosis pigmentosa, Alpine scurvy, or chichism). The principal manifestation of a severe deficiency of niacin, usually complicated by deficiencies of other B vitamins. It is found worldwide and is usually associated with diets high in corn and containing little or no meat, milk, fish, or other good sources of protein. The disease is more prevalent during the spring.

S. Onset is gradual with loss of strength, loss of weight, and sore, red tongue. Dermatitis may occur. Diarrhea or alternating periods of diarrhea and constipation may occur.

O. Look for red tongue, gastrointestinal disturbances, psychic disturbances, and dermatitis. The tongue is swollen, denuded of its papillae (glossitis), and often painful and extremely sensitive. The dermatitis, characteristically, is symmetrically distributed. In most instances it is restricted to parts exposed to the sun. In the early stages the rash resembles a sunburn. This may be followed by vesiculation and bulla formation. The skin becomes thickened and roughened, and as the acute inflammation subsides, the brownish pigmentation remains. Repeated attacks lead to marked atrophy of the skin. The psychic disturbances in the early stages are that of neurasthenia, which increases in severity with progression of the disease. In advanced and long-standing cases, true psychoses occur. In these cases, spastic gait, peripheral neuritis, and other indications of organic involvement are not uncommon.

A. Pellagra (lack of nicotinic acid and tryptophan in the diet).

P. High protein, high vitamin diet. Nicotinic acid or niacinamide 50-500 mg. daily oral or injection. Give therapeutic doses of thiamine, riboflavin, and pyridoxine daily.

5-3. BERIBERI. Caused by a deficiency in vitamin B1 (thiamine hydrochloride) and other vitamins, and is found in areas where the diet consists primarily of polished rice, white flour, and other nonvitamin bearing foods. Increased need for vitamin B1; fever, high carbohydrate intake, or alcoholism may lead to deficiency.

S. Onset is usually gradual with progressive weakness of the most used muscle groups (most commonly in extensor muscles of the thigh). In many instances, patient is unable to rise from squatting position.

O. Atrophy of the muscles most used. Sensory disturbances

(hyperesthesia or hypoesthesia) usually appear at the same time but are usually less prominent. In severe cases many muscle groups may be affected and you see flaccid paralysis, muscular atrophy, with or without evidence of cardiac enlargement, and tachycardia.

With a more serious form (wet beriberi), the clinical picture is predominantly that of acute congestive heart failure with relatively little evidence of nervous system involvement. The onset is frequently rapid and acute, and the marked edema may mask the presence of muscle atrophy. Sudden collapse occurs frequently.

A. Vitamin B1 (thiamine) deficiency (beriberi). Differential diagnosis: Tabes dorsalis, post diphtheritic paralysis, and acute heart failure resulting from other causes.

P. Thiamine hydrochloride 20-50 mg. orally IV or IM in divided doses daily x 2 weeks then 10 mg. daily orally. Alternative: Dried yeast tablets (brewer's yeast) 30 gm. t.i.d. Well balanced diet of 2,500-4,500 calories a day when tolerated.

Prognosis: Recovery is rapid and complete in infants and small children. Recovery is slow in adults and there may be permanent disability, such as muscle weakness or flaccid paralysis, due to nerve cell degeneration. In the acute form of wet beriberi, deaths are frequent.

5-4. SPRUE (psilosis, Ceylon sore mouth, malabsorption syndrome). Sprue syndromes are diseases of disturbed small intestine function characterized by impaired absorption, particularly of fats, and motor abnormalities. It is not associated with any particular diet or dietary deficiency. Characteristically affects white upper-class individuals of long residence in endemic areas. Occurs in Far East, Puerto Rico, sporadically in U.S., and rarely in Africa.

S. Main symptom is diarrhea, explosive and watery at first, later stools are fewer, more solid, and characteristically pale, frothy, foul-smelling, and greasy. Patient has sore tongue and mouth and flatulent indigestion. Abdominal cramps, weight loss (often marked), pallor, irritability, muscle cramps, and weakness may occur.

O. Paresthesia (abnormal sensation from numbness to heightened sensitivity), asthenia (lack or loss of strength), abdominal distention, and mild tenderness are present. At first there are small painful ulcers on the tongue and buccal mucosa. Later the tongue becomes acutely inflamed and denuded. The ulcers can extend into the pharynx and esophagus and may cause dysphagia. Signs and symptoms of multiple vitamin deficiencies will be found in severe cases.

A. Sprue (malabsorption syndrome). Differential diagnosis: Anatomic abnormalities (fistulas, blind loops, jejunal diverticulosis) or regional enteritis.

P. Folic acid 10-20 mg. daily orally or IM for 2-4 weeks until remission of symptoms, then 5 mg. folic acid daily, tetracycline 250 mg. q.i.d. x 10 days. High calorie, high protein, low fat diet. Multiple vitamins should be given daily.

5-5. PROTEIN AND CALORIE MALNUTRITION.

a. Kwashiorkor (malignant malnutrition). Caused by inadequate proteins with adequate calories. Usually occurs in infants after weaning but may occur in children of any age and even in adults. Occurs wherever people subsist on starchy staple foods without adequate protein supplements.

S. Irritability, apathy, skin changes (rash, desquamation, depigmentation or hyperpigmentation, ulceration), inflammation of lips and mouth, conjunctivitis, sparse or depigmented hair, anorexia, vomiting, and diarrhea.

O. Growth and maturation are retarded, muscular wasting, edema (usually starts in the feet and lower legs but may affect any part of the body including the face). Liver enlargement also occurs and may or may not be palpable. R.B.C. nearly always shows moderate anemia.

A. Kwashiorkor.

P. Restore and maintain fluid and electrolyte balance. All but the most severely ill respond to a diet based on milk; dilute milk feeding can usually be introducted after 24 h. Sufficient milk should be given to supply 2-5 gm of protein/kg./day. At this stage, more calories in the form of sugar and cereal may be added to the diet to provide 150-250 k cal/kg./day. Correct remaining vitamin and mineral deficiencies. Small frequent feeding around the clock are tolerated best in early stages of recovery. Antibiotics may be indicated, but treatment of malaria and other parasitic infections should be delayed until patient is clinically improved. Whole blood is contraindicated unless Hb is < 4 gm%.

b. Marasmus. Total starvation, a protein and calorie malnutrition.

S. Constant hunger; thin, emaciated body but protuberant abdomen.

O. Retarded growth; atrophy of muscle tissue; skin is loose and wrinkled, especially around the buttocks, and when pinched between thumb and forefinger, shows almost a complete absence of subcutaneous fat. No edema; face is drawn and monkeylike. Diarrhea and anemia are frequent but not always present.

A. Marasmus.

P. Initial feedings should be slow and increased gradually. There must be adaquate intake of calories and protein; same treatment as for kwashiorkor.

5-6. SIMPLE GOITER (endemic goiter). An enlargement of the thyroid gland without either hyper- or hypothyroidism due to lack of iodine in the diet. Can be due to excess intake of goitrogenic vegetables (rutabagas, turnips, cabbage, mustard seeds).

S. In the majority of cases there are no symptoms or symptoms resulting from compression of the structures in the neck and chest (wheezing, dysphagia, respiratory embarrassment).

O. Swelling of neck, palpable thyroid gland often extremely large.

A. Simple goiter. Differential diagnosis: Toxic, diffuse, or modular goiter.

P. Iodine therapy 5 gtt. daily S.S.K.I. (saturated solution of potassium iodine) or 5-10 gtt. of a strong iodine solution in a glass of water. Continue until gland returns to normal size, then place patient on maintainance dose 1-2 gtt. daily or use iodized table salt.

5-7. OSTEOMALACIA (rickets). A calcium-phosphorus deficiency primarily of women, particularly during pregnancy and lactation; can be secondary to disorders in fat absorption (sprue, diarrhea, pancreatitis) or due to prolonged use of aluminum hydroxide gels, causing chronic phosphate depletion.

S. Usually mild aching of the bones, particularly long bones and ribs, muscular weakness, and listlessness.

O. Bony tenderness is common and severe tetany may occur. Bones become soft and flexible; deformities are more frequently caused by bones bending (bowing) rather than fractures, particularly in the legs, thorax, and spine.

A. Rickets. Differential diagnosis: Arthritis, osteoporosis, osteogenesis imperfecta.

P. Treatment can only protect against further deformities. Diet high in calcium and phosphorus, 25-100 thousand units vitamin D daily. Treat contributing disease if present.

5-8. SCURVY. Due to inadequate intake of vitamin C, but may occur with increased metabolic needs or decreased absorption. Frequently seen in formula-fed infants, elderly bachelors, and food fadists.

S. Mild or early manifestations are edema and bleeding of the gums. Severe or late manifestations are swelling of the joints, marked bleeding tendency, loosening or loss of teeth, poor wound healing, or in severe cases old scar tissue breaking down and reopening of healed wounds.

O. Mild or early manifestations are porosity of dentine and hyperkeratotic hair follicles. In severe or late cases, patient bruises easily, severe muscle changes, and anemia.

A. Vitamin C deficiency (scurvy).

P. a. Ascorbic acid 50 mg. q.i.d. x 1 wk in infantile scurvy then 50 mg. t.i.d. x 1 mo with prophylactic doses (25-30 mg./day) supplemented by orange or tomato juice. In vomiting or diarrhea, give one-half oral dose IM or IV as sodium ascorbate.

b. For adult scurvy, 250 mg q.i.d. until asymptomatic. When parenteral therapy is required, give sodium ascorbate at the same dosage. Ascorbic acid 300-500 mg./day P.O. in divided doses should be given for several months in chronic scurvy with gingivitis, repeated hemorrhagic manifestation, or joint symptoms.

5-9. VITAMIN A DEFICIENCY. Fat-soluble vitamin necessary for normal function and structure of all epithelial cells and for synthesis of visual purple in retinal rods (night vision). Toxic if too much is ingested

(e.g., seal and polar bear liver).

S. Mild or early manifestations are dryness of skin and night blindness.

O. Mild or early manifestation of follicular hyperkeratosis. In late or severe cases, softening of cornea, dryness of conjunctiva, atrophy and keratinization of the skin.

A. Vitamin A deficiency usually in conjunction with other deficiencies.

P. Oleovitamin A, 15-25 thousand units once or twice a day orally. If absorption defect is present, give same dosage IM. Care must be used as minimum toxic dose in adults is about 75-100 thousand units daily.

S and S for hypervitaminosis A are anorexia, loss of weight, dry and fissured skin, brittle nails, hair loss, gingivitis, splenomegaly, anemia, and C.N.S. manifestations.

CHAPTER 6

PEDIATRICS

6-1. The pediatric patient may mean the neonate (up to 4 weeks), the infant (1 month to 1 year), the child (1 year to 6 years), or the preadolescent (6 years to 12 years). The treatment and drug dosage of a 9-pound infant may be vastly different from an 11-year-old preadolescent. The adolescent will be treated generally as an adult (over 12 years old). For purposes of identification, specify the age and the approximate weight of the pediatric patient. In assessing the seriousness or chronicity of a disease in the pediatric patient, steadily increasing height and weight is not the sign of a very sick patient. A fat child who remains fat is generally not very sick or at least not chronically sick. A child with good appetite is rarely very sick.

a. History is the most important single factor in making a proper assessment for many pediatric problems. It should be obtained from the mother or guardian. If the child is old enough to talk, you can obtain much valuable information from him or her. Allow the informants to present the problem as they see it, then fill in the necessary past and family history and pertinent information.

b. Examination of pediatric patients, except newborn and infant, follows the same procedures as the examination of adult patients.

(1) Newborn examination.

(a) General appearance. The prime concern in the first few minutes of life is respiration. A crying baby has a good respiration.

(b) Skin color. Definite jaundice in the first 24 hours is pathologic and means infection, erythroblastosis (Rh factor), or prematurity.

(c) Extremities. All should move erratically.

(d) Reflexes. Sucking reflex should be present at birth.

(e) Digits. The fingers and toes may be cyanotic, but the trunk should be pink. A baby depressed from too much anesthesia at birth, prematurity, or difficult labor will lack some of the above. Try mildly painful stimulation (pinch); it may bring the baby out of its depression.

(2) Infant examination. Every child should receive a complete systematic examination periodically.

(a) Child should be observed from the time he or she is first brought into the room and during the entire examination.

(b) A friendly manner, quiet voice, and a slow and easy approach will usually help in the examination; if not, proceed as gently as possible in an orderly and systematic manner.

(c) Holding for examination. Before 6 months of age an infant will usually tolerate an examination table. From 6 months to 3 or 4 years of age most examinations can be performed best while the child is held in the parent's lap or over the shoulder.

(d) Parents should remove their child's clothing. If you must remove the child's clothing, do it gradually to prevent chilling or alarming the child.

(e) It is usually best to begin by examining an area unlikely to be associated with pain or discomfort. Painful/uncomfortable areas should be examined last.

(f) Take and record height, weight, and head circumference at each examination. These measurements give information regarding patterns of growth when compared with previous examination measurements.

c. The newborn generally weighs 7-1/2 pounds (3.4 kg.) in modern countries; in deprived countries, weight will probably be less than 7-1/2 pounds. Any newborn less than 5-1/2 pounds (2,500 gm or 2.5 kg.) is by definition "premature" regardless of the length of pregnancy and will require more care, have less chance of survival, and will grow and mature slower. A normal term infant's birth weight should <u>at least</u> double in 5 months and triple in 12 months.

d. Vital signs:

	Pulse/min	Respiration/min	B.P. (Systolic)
(1) Birth	140	40	60-80
(2) Six months	110	30	90
(3) One year	100	28	90
(4) Three to four years	95	25	100
(5) Five to ten years	90	24	100

e. Laboratory norms for infant and child:

	Birth	Three months	One year	Five years
(1) Hb	16-20	10-11	12-13	12.5 - 13.5
(2) W.B.C.	10-20,000	5-9,000	6-10,000	6-10,000
(3) HCT	50-60	30-33	35-36	38-41
(4) Neutrophils	45-55%	30-40%	35-45%	40-50%
(5) Lymphs	30-45%	50-60%	50-60%	45-55%

f. Calculating drug dosages (Young's Rule):

For children over 2: $\frac{\text{Child dose} = \text{age (years)} \times \text{adult dose}}{\text{age} + 12}$

For children under 2: $\frac{\text{Child dose} = \text{age in months} \times \text{adult dose}}{150}$

g. Feeding. The child must be fed by frequent intake of fluid and calories. A schedule of feeding is not necessary. A sick child must be encouraged to eat or drink.

(1) Breast feeding. This is usually superior to bottle feeding. Make sure the mother has no breast infection, she has milk, and the infant can suck properly. The infant receives all the vitamins and nutriments that are required if the mother is healthy and is receiving proper nutrition (it never hurts to give supplemental daily multivitamins to a breast-feeding mother).

(2) Bottle feeding. The infant may be fed by breast alternating with bottle or with bottle alone. If milk formula is not available, one will have to be improvised.

(3) Nutritional requirements:

(a) Calories per day. First year, 50 calories per pound (about 1,000 calories per day at age one year).

(b) Fluid. Two to three ounces per pound per day. Feedings may be given as often as possible to the sick child if the child will take it, unless some medical contraindication exists. The healthy child may eat from three to eight times daily.

(c) Caloric content:

1. Cow milk = 20 calories per ounce.

2. Evaporated milk = 40 calories per ounce.

3. Sugar = 120 calories per ounce or 60 calories per tablespoon.

(d) Milk will provide enough sodium, potassium, calcium, etc. to nourish any child temporarily, but if it is not fortified, it must be supplemented with iron and vitamin C and D. Be sure the milk is pasteurized. If there is a doubt, boil (15 seconds at a rolling boil is required).

(4) Improvising a formula. The formula should be about as thick or viscous as cow's milk. It should be reasonably palatable. Taste it yourself; if it tastes bad to you, the child may not take it. It should be comfortably warm. The bottles should be sterilized. If bottles are not available, spoon feed or drip the milk in with syringe or tubing. A good oral solution can be made using 5 percent dextrose, 1 tablespoon of sugar, and 1/2 teaspoon of salt per liter and is especially useful in a dehydrated patient who is not vomiting. It provides fluid, calories, and salt, but if it is to be used for extended periods, it must be fortified with vitamins.

6-2. THE DEHYDRATED CHILD. Newborns and infants can become dehydrated fairly rapidly due to illness or lack of fluid intake.

S. Fever; dry skin, mucous membranes, and tongue; sunken eyeballs; poor skin turgor, and depressed fontanelles.

O. Decreased or no urine output; urine dark and concentrated with a high specific gravity and a high hematocrit.

A. Dehydrated child.

P. Fluid replacement is of prime importance. If the dehydration is not severe and the patient can take fluids by mouth, then fluids should be forced. If the dehydration is severe or the patient cannot take fluids by mouth, then fluids must be replaced IV. Do not try to replace all the fluid deficit in a short period as it may throw the child into shock. Estimate the fluid deficit. Figure the daily requirement.

Maintenance fluid requirement:

0 - 10 kg. 100 cc./kg.

11 - 20 kg. $\frac{100 \text{ cc./kg.}}{10}$ + 50 cc./kg.

21 kg. and over $\frac{100 \text{ cc./kg.}}{20}$ + 50 cc./kg. + 25 cc.

Then give the daily requirement plus 1/2 of the deficit over the first 24 hours. (A good replacement fluid is 1/4 strength normal saline in 5% D5W.)

Patient should be catheterized and urine output monitored closely. You are looking for a return to good skin turgor, moist mucous membranes and tongue, and lightening of the urine. Lowering of urine specific gravity is your most important sign. Treat the cause, e.g., fever, throat infection, etc.

6-3. FEVER OF UNDETERMINED ORIGIN (FUO).

a. Fever is generally a sign of infection, but infants can spike fever for almost any reason (e.g., cutting teeth, constipation, reaction to diet, allergy, diaper rash, etc.). Fevers due to infections are usually low-grade in adults but may be much higher in infants and young children. Children often convulse with temperatures over 104o F. (occasionally at lower temperatures).

b. Treatment. Initially, lowering the temperature (if it is 104o F. or above) is of primary importance. Give Tylenol (Tempra, acetaminophen) 10 mg./kg. q.4h. if child is less than 1 year old; give aspirin 65 mg./yr of age q.6h. first if child is 1 year or older. Then give a sponge bath or alcohol bath to cool the body. The patient must be monitored closely and baths repeated as needed to keep the temperature down. If unexplained fever has been present over 24 hours, a white count and differential should be done. Ideally, the patient should be treated for the specific disease; however, if a diagnosis can't be made, broad spectrum antibiotics will often cure the infection. Tetracycline should not be used in the premature and can stain teeth in children even if used for short periods. Additional treatment consists of nursing care and maintaining fluid and caloric intake.

6-4. DIAPER RASH. A form of primary irritant contact dermatitis due to prolonged contact of the skin to a combination of urine and feces.

S. and O. Erythema; thickening on the skin in the perineal area; beefy red, sharply marginated lesions with satellites; and a history of skin contact with urine and feces.

A. Diaper rash. Differential diagnosis: Other forms of primary irritant contact dermatitis.

P. Frequent diaper changes. Avoid rubber or plastic pants. Talcum powder can be used as an absorbent. Corn starch should not be used as it is a media in which C. albicans flourishes (80 percent of cases lasting more than 4 days are caused by C. albicans). Apply Mycostatin (nystatin, Mycolog) cream or Silvadine ointment with each diaper change. In extremely inflammatory diaper rash, 1% hydrocortisone cream can be alternated with Mycostatin at every other diaper change.

6-5. CHICKEN POX (VARICELLA). Primarily a disease of childhood, but in large areas of the tropics it is principally an adult disease. Varicella and herpes zoster are caused by the same virus, with varicella being the primary infection and herpes zoster being a recurrent infection. Varicella is highly contagious (80-90 percent of exposed susceptibles are infected).

S. History of contact 10-20 days (average 12-13 days) prior to onset. Usually no prodrome, but a mild fever with itchy and runny nose is sometimes seen 1-3 days before rash appears. Onset is usually abrupt with the appearance of the rash. Systemic symptoms, if any, are mild.

O. Rash appears in crops, with faint erythematous macules rapidly developing into papules and vesicles. The vesicles are thin-walled and superficially located on the skin with distinct areolas (dewdrop on red base) that rupture easily and rapidly encrust. Successive crops (usually 3) appear in the next 2-5 days, giving rise to lesions in all stages being seen at one time. Rash is heaviest on the trunk and lighter on the extremities. If a secondary bacterial infection does not develop, the crusts fall off in 1-3 weeks, leaving no scars. Varicella can vary from a mild disease with few vesicles to a severe disease with as many as 5 crops of lesions covering most of the skin. Systemic symptoms, which are usually mild or absent, may be severe and generally parallel the extent of skin involvement. Usually laboratory tests are of little aid, although sepsis may be accompanied by an abrupt rise of neutrophilia in the W.B.C.

A. Chicken Pox. Differential diagnosis: Severe forms--smallpox, impetigo, multiple insect bites, papular urticaria, rickettsialpox, and dermatitis herpetiformis.

P. Symptomatic. Fluids, control of itching with antihistamines, attention to cleanliness (handwashing, bathing), antipyretics as needed. Treat secondary infections.

6-6. SCARLET FEVER. A formerly common ailment that is rarely seen today, probably because antibiotic therapy prevents the opportunity for the streptococcus to progress in individual patients or to create massive epidemics. Scarlet fever is associated with Group A streptococcal strains that produce an erythrogenic toxin, leading to a diffuse pink-red cutaneous blush that blanches on pressure. The rash, an additional feature of an illness that otherwise resembles streptococcal pharyngitis, is best seen on the abdomen, on the lateral chest, and in the cutaneous folds.

S. and O. Along with the characteristic manifestations of the rash are circumoral pallor surrounded by a flushed face, a "strawberry tongue" (inflamed beefy red papillae protruding through a white coating), and Pastia's lines (dark red lines in the creases of skin folds). The upper layer of the previously reddened skin often desquamates after the

fever subsides.

A. Scarlet fever due to Group A streptococcus.

P. The course and management of scarlet fever are essentially the same as for other clinically evident Group A infections.

6-7. MUMPS (PAROTITIS). A common childhood disease that is asymptomatic in 30-40 percent of cases. Most children are infected and develop lifetime immunity but a few remain susceptible throughout adolescence and adult life.

S. and O. History of contact 14-21 days prior. Bilateral or unilateral painful swelling of the parotid gland is usually the only manifestation. Systemic symptoms may consist of high fever and headache or mild respiratory symptoms or occasionally C.N.S. symptoms that appear prior to or in the absence of parotid gland involvement, or symptoms may be absent. (Mumps virus is the most common cause of meningitis in childhood.) Mild to moderate abdominal pain may be present.

The gonads may be involved (orchitis or oophoritis) in postpubertal individuals with sudden onset of fever, chills, systemic symptoms, and lower abdominal pain in females or extreme testicular pain and testicular swelling in males. Contrary to common belief, mumps, orchitis, and oophoritis do not result in sterility. Symptoms subside in 3-14 days. Mumps usually last approximately 1 week.

A. Mumps. Differential diagnosis: Cervical lymphadenitis of pharynx, tonsillar or skin infection, other parotides, acute lymphoma, or lymphosarcoma.

P. Symptomatic. Control fever, pain, and discomfort. Treat orchitis or oophoritis conservatively with rest, testicular support, and analgesics. Corticosteroids may result in more rapid subsidence of testicular swelling.

6-8. VIRAL CROUP. Most commonly affects children between 3 months and 3 years of age. Characteristically occurs during late fall or early winter and is usually caused by the parainfluenza virus. It can also be caused by respiratory syncytial virus, influenza virus, rubeola virus, or adenoviruses. The major cause of symptoms is inflammation and edema in the subglottic area that can cause significant narrowing of the airway at the level of the cricoid cartilage.

S. Gradual onset, with history of several days upper respiratory tract infection prior to the onset of barking cough and harsh, high-pitched sound during inspiration (inspiratory stridor). If the lower respiratory tract is significantly involved, there may be wheezing. The child may become anxious and restless as hypoxemia and hypercapnia develop.

O. Mild temperature. Possible decreased breath sounds on ausculation. Cyanosis is a late sign and may herald complete airway obstruction. W.B.C. seldom increases to more than 15,000 with no significant leftward shift.

A. Viral Croup. Differential diagnosis: Bacterial croup (epiglottitis).

P. Cool mist therapy. (If vaporizer is not available, improvise by using steam in an enclosed room. Do not let steam go directly on patient as it may cause burns.) Monitor urine specific gravity to insure adequate hydration. Observe patient closely for signs of increasing hypoxia and impending respiratory failure. Keep patient calm and at bed rest. Do not use sedation unless an artificial airway is in place. The most effective method of keeping a child calm is having the mother or some other familiar person present. About 25-30% oxygen can be administered to relieve hypoxia. Patients starting O_2 therapy often have a marked decrease in respiratory effort and should be monitored closely for the first few minutes of oxygen administration.

Bronchial dilators (such as Bronchaid or Primatene Mist) often provide temporary relief of respiratory distress. If commercial preparations are not available, you can make a preparation of 0.5 cc. of epinephrine to 3.5 cc. of sterile water in a spray bottle.

If respiratory distress continues and there is progressively increasing cyanosis and decreasing air entry, an artificial airway must be provided. Generally, endotracheal intubation with a small endotracheal tube is used to reduce trauma to the glottis and subglottic area. (A particularly traumatic tracheal intubation can convert a reversible subglottic narrowing into a fixed nonreversible subglottic narrowing.) The best endotracheal tube care is mandatory and consists of careful tube stabilization and suctioning, postural drainage, chest percussion and humidification of inspired air. If all else fails, a tracheostomy is necessary.

6-9. EPIGLOTTITIS (BACTERIAL CROUP). The most serious form of croup syndrome. It generally affects children 3-7 years old, with no particular seasonal distribution. The most common pathogen is Hemophilus influenzae type B, but beta-hemolytic streptococci and pneumococci have been implicated in rare cases.

S. Abrupt onset over a period of only a few hours. Young children often present with high fever and respiratory distress. Older children may appear toxic and complain of difficulty in swallowing and severe sore throat. Child may have a muffled voice but usually it is not hoarse.

O. Pooling of secretions in the posterior pharynx and drooling are signs caused by extreme dysphagia (inability or difficulty in swallowing). The child, within a few hours, may be in marked respiratory distress with severe inspiratory stridor (harsh, high-pitched sound during inspiration) and retractions. The pharynx is likely to be inflamed. Diagnosis is made by markedly enlarged, friable (easily cracked or broken), "cherry-red" epiglottis. Direct visualization using a tongue blade or laryngoscope is extremely dangerous, as stimulation of the epiglottis has produced laryngeal obstruction and death. No throat cultures should be obtained until epiglottitis has been ruled out or an artificial airway is in place as this may also cause laryngospasm that causes laryngeal obstruction.

Lab findings: W.B.C. of more than 15,000 and a leftward shift is usually present.

P. Once the diagnosis is made, an artificial airway should be introduced. Because of the marked swelling and friability of the tissue,

intubation is extremely difficult. A smaller than usual endotracheal tube should be used and a tracheostomy set should be available. An IV should be initiated prior to the intubation and antibiotic therapy can be started by that route. Ampicillin 300 mg./kg./day in 6 divided doses or ampicillin and chloramphenicol are the drugs of choice.

The endotracheal tube should remain in place until the patient is able to breath around the tube easily and when there is a marked decrease in the epiglottic swellings, usually after 24-72 hours. Mortality rate may be as high as 90 without intubation and antibiotic therapy.

6-10. MENINGITIS. See Chapter 2, Section III, Bacterial.

6-11. MEASLES AND GERMAN MEASLES. See Chapter 2, Section IV, Viral.

6-12. DIPHTHERIA. An acute infection of the upper respiratory tract or skin caused by Corynebacterium diphtheriae. A toxin-producing, gram-positive rod with irregular swellings at one end giving it a club-shaped appearance. Irregularly distributed within the rods are granules that stain dark giving them a beaded appearance. The incubation period is 1-6 days.

S. and O. Pharyngeal diphtheria: Mild sore throat, moderate fever, and malaise followed fairly rapidly by severe prostration and circulatory collapse. Pulse is more rapid than temperature would seem to justify. A tenacious and gray membrane, surrounded by a narrow zone of erythema and a broader zone of edema forms in the throat and may spread into the nasopharynx or trachea, producing respiratory obstruction. High fever, prostration, difficulty in swallowing, and noisy breathing develops even without laryngeal obstruction. Cervical lymph nodes become swollen, and swelling is associated with brawny edema of the neck ("bullneck"); palatal paralysis may occur. Bleeding from the nose and mouth are common and petechiae may appear on the skin and mucous membranes.

Nasal diphtheria: Occurs in 2 percent of cases. Serosanguineous (containing serum and blood) nasal discharge and excoriation of the upper lip are characteristic and may be the only symptoms.

Laryngeal diptheria: Occurs in 25 percent of cases, and occasionally may be the only manifestation. Stridor (harsh, high-pitched sound during respiration) is apparent. The progressive laryngeal obstruction can lead to cyanosis and suffocation.

Other forms: Cutaneous, vaginal, or wound diphtheria composes less than 2 percent of all cases and are characterized by ulcerative lesions with membrane formation. They may be very hard to identify in burns or wounds.

Lab findings: W.B.C. is usually normal or slightly elevated. Urinalysis may show proteinuria of a transient nature.

A. Diphtheria. Differential diagnosis: Acute streptococcal pharyngitis, mononucleosis, occasionally other viral pharyngitis, purulent sinusitis, epiglottitis, and viral croup.

P. As the toxin causes the main damage, antitoxin should be administered ASAP. Delay beyond 48 hours must be avoided because antitoxin administered beyond that point may have little effect in altering the

incidence or severity of complication. These include myocarditis, toxic polyneuritis, and bronchopneumonia. Sensitivity to horse serum should always be skin tested for before administering the antitoxin. If positive and the diphtheria is severe, give 50 mg. Benadryl IM initially, start an IV of Ringer's lactate or $D_{5}W$ to be used for treatment of anaphylactic shock if necessary, then and only then start an IV to administer the required antitoxin. The patient must be closely monitored for signs of reaction to the antitoxin.

Mild pharyngeal diphtheria or when the membrane is small or confined to the anterior nares or tonsils, 40,000 units. Moderate pharyngeal diphtheria, 80,000 units. Severe pharyngeal or laryngeal diphtheria, 120,000 units regardless of child's weight infused in 200 ml. of isotonic saline over a 30-minute period.

Penicillin V is the drug of choice to eliminate the organism and stop toxin production 250 mg. q.i.d. x 10 days or 600,000 units of procaine Penicillin G IM b.i.d. x 10 days. Alternate is erythromycin 25-50 mg./kg./d. in 4 divided doses orally x 10 days.

Bed rest for 10-14 days is usually required. Strict isolation until antibiotic therapy has made respiratory secretions noninfectious is also required (usually 1-7 days). IV therapy may be necessary. Warm salt water gargles or irrigation are helpful and codeine phosphate 3 mg./kg./d. in 6 divided doses may also help with the discomfort.

Prevention: Routine DPT (diphtheria, pertussis, and tetanus) immunization should be given to all infants and children.

All children exposed to diphtheria should be examined and treated if any signs of early diphtheria show.

All asymptomatic individuals, even if previously immunized, should receive diphtheria toxoid and either erythromycin 20-30 mg./kg./d. in 4 divided doses orally x 10 days or 25,000 U./kg. of benzathine penicillin G.

CHAPTER 7

GYNECOLOGY

7-1. Gynecology encompasses those diseases that are peculiar to women. History and physical examination have certain features that separate them from general ones.

a. History.

(1) Age, gravidity (number of times pregnant), parity (number of live deliveries). Medical records list these, for example, as G3P2Ab1 (three pregnancies; two deliveries; one abortion, either spontaneous or induced).

(2) Chief complaints, in the patient's words, in order of severity.

(3) Present illness. A chronological order of symptoms with details.

(4) Past medical/surgical history in chronological order from childhood through the present, with the complications and treatments for each. All operations and injuries with dates and outcomes.

(5) Obstetrical history. Number of pregnancies, duration of pregnancies and labor details, weight and sex of infants, stillbirths and abortions.

(6) Family history. Age and health of parents and siblings. Family history of any tuberculosis, diabetes, hypertension, bleeding disorders, heart disease, cancer.

(7) Marital and/or cohabitation history. Duration and compatibility of past and present relationships, ages and causes of deaths, if any, and ages and health of children, if any.

(8) Social history. Occupation, hazards, alcohol and tobacco consumption habits, drug usage, sleep and exercise habits, and general activities.

(9) Review of systems. Same as a general history, except for genitourinary. Menarche (age at onset of menstruation), last menstrual period, regularity, duration, amount and character of flow, spotting, discharges, and pain.

b. Examination. Same as the general examination except for:

(1) Breasts. Size, shape equality of both sides, masses, tenderness, scars, or nipple discharge. Breast examination is performed by gentle palpation in a circular fashion from the nipple to the outside, also covering the nodes under the arms. Attempt to express a discharge from the breast nipple as well. Perform this maneuver with the patient's arms down at the sides and over her head, in the supine position.

(2) Pelvic examination.

(a) Drape a sheet over the patient in the supine position

with her legs flexed and spread open. Have a female assistant at your side or at the patient's side for support. Obtain a good direct light source, a water-base lubricant such as KY jelly, and surgically clean gloves.

(b) Genitalia. Look for inflamed, hypertrophied, atrophied, ulcerated, or any other abnormal areas; vaginal discharge; clitoral abnormalities; skin changes over the perineum, thighs, pubis, or perianal region. Check the urethral meatus for redness, exudates from the labial gland ducts, etc.

(c) If pathological study assistance is available, obtain vaginal mucus from the posterior of the vagina for cell studies.

(d) Insert a comfortably warm speculum into the vagina. Ask the patient to relax and bear down. Carefully spread the labia with a gloved hand, insert the speculum blades slowly downward and inward, watching the insert closely. As the cervix is approached, slowly open the blades and allow the blades to straddle the cervix between them. Lock the screw lock.

(e) Inspect the cervix. Obtain cervical mucus from the cervical entrance and from any irregular lesions or sites. Insure the cervical size is not excessively large or small in proportion to the vagina. The cervix should be smooth with no large lacerations, no wide opening, of a pink color, and without blood or discharge.

(f) Unlock blades and slowly withdraw them. Watch for pink folds of the vaginal walls without blood or discharge or lesions. Leaving the blades at the introitus, or vaginal opening, ask the patient to again bear down. A drooping of the cervix indicates decensus, or loss of support, of the uterus itself. Drooping of the vaginal roof may indicate cystocele; protrusion of the vaginal floor upward may indicate rectocele. These will be explained. Take smears of any questionable exudates.

(g) Bimanual palpation.

1. Place one palm down on the abdomen as you stand between the patient's legs. Slightly flex the fingers. Press down firmly. Have the patient take shallow, rapid breaths to aid in relaxation.

2. With the other hand, gloved and coated with a small amount of lubricating jelly, slowly part the labia with the index and middle fingers. Hug the floor of the vagina with the fingers and touch the cervix with the fingertips. "Trap" the uterus between the hands and, without letting it loose, run the outside hand fingertips over the entire front and side surfaces of the uterus. It should be in the midline, be firm and smooth just above the pubis, and be somewhat movable with relatively little pain. Feel behind the cervix for any masses, fullness, or tenderness.

3. With the uterus still trapped between the hands, sweep the outside hand over to the side of the uterus to meet the fingertips of the vaginal hand. "Trap" the fallopian tube and ovary. You should not be able to feel the tube. The ovary is an almond-size, slightly tender organ attached to the side of the uterus. Feel for size, consistency, position, and contour (firm, just lateral to the uterus, smooth). Document all masses noted.

4. With the index finger of the internal hand still in the vagina, gently insert the middle finger into the rectum very slowly but firmly. Palpate as you did for the vaginal exam. This exam will aid in diagnosis of a vaginal stricture, is used in virgins, for tender masses and to explore the back of the uterus and rectal strength.

(3) Laboratory studies.

(a) Collections of Bartholin's, Skene's discharges, vaginal walls, posterior vaginal fornix, or rear pouch, or cervical opening, or os, are taken with a clean cotton applicator and treated as for a simple Gram stain unless you feel a need for culturing and these facilities are available.

(b) Wet preps. These are for vaginal discharges. Moisten a slide with a drop of sterile saline. Transfer a drop of discharge on a wooden applicator to the drop of saline on the slide. Read under a microscope immediately.

1. Trichomonas vaginalis. Look for the typical trichomonads with a whipping tail. See the laboratory plates for an example.

2. Hemophilus vaginalis. Vaginal cells may be dusted with small dark particles. These are called "clue cells." See the laboratory plates.

(c) KOH preps. Add a drop or two of 10% potassium hydroxide to a slide. Transfer a drop of discharge with a wooden applicator. The solution will dissolve R.B.C.'s, inflammatory, and epithelial cells. Candida albicans mycelia will display as hyphae and spores. Any whitish plaques in the vagina are to be scraped for this test.

(d) Pap smears. These smears of cervical cells are invaluable as a cancer screen when pathology facilities are available. With the vaginal speculum in place without lubricant other than sterile saline, transfer a specimen scraped from the center of the opening of the cervix to a slide. Smear the drops lightly across the slide. Repeat the procedure with a drop of fluid from the back of the vagina. Fix both slides immediately with 97% ethanol, Aqua-Net hair spray, or Pro-Fixx cytology fixative by spraying lightly across the slides. Be sure to have the patient's name on each slide. Pap smear readings are very difficult during active bleed.

(4) Procedures. Dilatation and curettage (D&C). This procedure involves opening of the cervix and scraping away of the endometrium or inner lining of the uterus. This procedure requires supervised practice prior to attempting the procedure yourself. Never forcefully perform this procedure. Uterine perforation can easily result. D&C is indicated for abnormal or postmenarchal questional bleeding and for spontaneous (incomplete) abortion. Contraindications include normal intrauterine pregnancy, acute cervicitis, endometritis, or pelvic inflammatory disease. The procedure may be performed under general anaesthesia, spinal (level of L3-L4 spine, inject 10-15 cc. of 0.25% Marcaine carefully), paracervical block (0.25% Marcaine injected just inside the vaginal mucosa next to the cervix on each side, 5 cc.), or 50-75 mg. Demerol IV slow while monitoring carefully.

(a) Explain the procedure to the patient.

(b) Palpate the uterine size and position. Attempt now and when "sounding" the uterus to rule out any lesions or growths that may bleed.

(c) Insert and lock down a speculum. Glove and wipe in a circular fashion outward the entire cervical stump with antiseptic sponges on transfer forceps three times. Discard the swabs and forceps. Bend the uterine sound to the estimated angle of the uterine position. Grasp the cervix with a tenaculum forcep at the six o'clock position and gently insert the sound until resistance is met. Here you will again try to note any lesions or growths as you insert the sound. Read the depth of the uterine cavity by noting the level of the mucous or blood on the sound as you would the oil level on a dipstick. Make a mental note of the depth of the uterine cavity. Starting with the smallest Hegar dilator, insert the dilator into the cervix to the dilator lip. Proceed to the next larger size until the cervix is at least as open as the loop of the largest curette, probably a #8 Hegar. Start with a small sharp curette by scraping in and out the entire diameter of the cervical canal. Fix the tissue obtained in 10% formalin. Repeat the four-quadrant scraping of the uterus by going to the depth of the uterus and scraping outward all along the uterine walls, in deep even gentle strokes to obtain long strips of endometrium. Curette the top of the uterus in an up-and-down fashion. Fix these specimens as before in formalin. If questionable specimens are obtained, fix and identify them separately. Insert a dry sterile sponge on a uterine forcep and swap the cavity with a twisting motion as you withdraw. Reinsert uterine polyp forceps and grasp for masses. Withdraw the forceps and observe for bleeding. Replace the uterus by removing the tenaculum and speculum and pushing the uterus gently but firmly upward bimanually. Place patient on bed rest for three days and limit activity for at least seven days. Excessive bleeding may require packing the uterine cavity with long continuous sterile roller gauze and shock care until out of danger and hemostasis is achieved.

7-2. THE BREAST. A modified sweat gland of duct tissue secreting nutritive fluid during the first several weeks after delivery (postpartum).

a. Postpartum mastitis (pyogenic cellulitis) generally occurs after several weeks of nursing. The infection occurs through the nipple and into the ducts. About 75 percent of all patients have unilateral involvement.

S. Chills, fever, malaise, regional pain, tenderness, and induration (hardening).

O. Gram stain of any discharge usually shows Staphylococcus aureus. A notable fluctuant mass can be palpated in the later stages. Axillary lymphadenopathy may be noted. An abscess may form in most cases.

A. Diagnosis is generally unmistakable.

P. Prevent by good hygiene. Suppress lactation (milk production) by wearing a tight binder for 72 hours, apply ice packs one hour on and one hour off. Give analgesics as needed. Broad-spectrum antibiotics such as Keflex, 250 mg. P.O. q.i.d. x 10-14 d. Incise and drain abscesses and pack with iodoform gauze.

b. Mammary dysplasia (cystic breast disease) is the most common

single breast disorder encountered.

S. Painful masses in breast, perhaps a discharge.

O. Multiple tender masses in a patient that is often 30-50 years old, often worse during menstrual periods. Sizes may go up or down. No skin retraction should be present.

A. Differential diagnosis includes breast carcinoma and adenofibroma, which require biopsy to diagnose.

P. Biopsy is needed if at all possible. If symptoms and history are classical for this disorder, infiltrate the breast locally with lidocaine 1% or procaine 1%, insert a 20-gage needle into the cyst and withdraw the watery fluid that should be straw-colored to black. Reexamine every 2-4 weeks for 3 months, then every 6-12 months. If no fluid is obtained or a persistent lump is noted, a biopsy is indicated.

7-3. VULVITIS. The vulva is subject to the same diseases as the skin elsewhere on the body. Vaginitis (covered later) is secondarily induced.

a. Eczema is a common pruritic moist dermatitis often from contact with an irritant in soap, bath oils, deodorants, clothing, dyes, etc.

S. Pruritus, occasionally a discharge, and the lesion are presented.

O. An excoriated (ulcerated) crusted lesion is noted.

A. Differential diagnosis: Includes seborrhea, psoriasis, and intertrigo.

P. Eliminate any irritant. Burow's solution b.i.d. for three days. Local application of a steroid cream (hydrocortisone, Valisone, etc.) b.i.d. until the lesion resolves. Antihistamines for itching as needed (Benadryl 25-50 mg. h.s. to q.i.d.).

b. Psoriasis is of unknown etiology.

S. Pruritus and a lesion are presented. History may be long term.

O. Erythematous, slightly elevated, flattened lesions without the typical silvery appearance of scaling seen elsewhere on the body.

A. Differential diagnosis: Includes seborrhea, eczema, and intertrigo.

P. Improved hygiene is important. Apply hydrocortisone cream 1% b.i.d. If no improvement occurs, try Valisone in the same dosage.

c. Seborrhea is based on a genetic predisposition involving hormones, nutrition, infection, and emotional stress.

S. Pruritus may present, along with a lesion that may be infected.

O. A dry, scaling lesion with underlying erythema will present.

A. Rule out fungal involvement with a KOH prep. Differential diagnosis: Includes eczema, psoriasis, and intertrigo.

P. No greasy ointments. Potassium permanganate dressings b.i.d. (soak dressing in 100 mg. of permanganate in 1 liter of water). Ammoniated mercury ointment after soaks: 5% ammoniated mercury, 3% liquid petrolatum and petrolatum q.s. ad 100%.

d. Intertrigo is caused by the macerating effect of heat, moisture, and friction. It is worse in hot humid climates and in obese patients.

S. Itching, stinging, burning sensation in a noticeable irritation.

O. Possible fissures, erythema, denuded appearance. Urinalysis may show an indication of diabetes, KOH prep may show candida, direct smear may even show many cocci.

A. Differential diagnosis: Includes eczema, psoriasis, and seborrhea which may preclude intertrigo itself.

P. Dust well with talc b.i.d. Potassium permanganate dressings prepared as above or Domeboro dressings in a 1:20 mixed ratio.

7-4. BARTHOLIN'S CYST AND ABSCESS.

S. Periodic painful swelling on either side of the introitus (vaginal opening) and dyspareunia (painful intercourse).

O. Swelling at mid to lower third of labia, usually 1-4 cm. in size, and tender and fluctuant (wavelike sensation on palpation indicating a fluid-filled sac). Rule out gonorrheal involvement by direct smear of exudate.

A. Differential diagnosis: Includes inclusion cysts, sebaceous cysts, and congenital abnormalities (these are not usually tender).

P. Local heat to the lesion. Ampicillin or erythromycin 250-500 mg. q.i.d. for 10 days. After the infection subsides, open the lesion and excise or exteriorize. If an abscess develops, incise and drain, pack with iodoform gauze.

7-5. CONDYLOMA ACUMINATA. A viral infection that does not affect a fetus.

S. Small masses on the vulva, vagina, or perineum will present with itching.

O. Pink clusters of soft narrow-based lesions that are pointed and elongated, with or without a profuse irritating discharge.

A. Rule out condyloma latum (the primary lesion of syphilis).

P. Culture any discharge for gonorrhea. Perform a darkfield exam to rule out spirochetes. Treat any secondary infection that may exist. A 25% podophyllin in benzoin tincture may be applied to the lesions only and is to be washed off in 2 hours. Do not touch the normal tissue with the podophyllin. Isolate the lesions by surrounding the lesions with mineral oil.

7-6. MOLLUSCUM CONTAGIOSUM. A virus that incubates in 1-4 weeks.

S. Asymptomatic small skin tumors will present.

O. Pink to gray, discrete, umbilicated epithelial skin tumors generally less than 1 cm. in diameter on primarily the vulva introitus.

A. Diagnosis is generally unmistakable.

P. Biopsy is indicated if the diagnosis is in question. Lightly curette away the lesions. Apply Neosporin-G cream to the curette sites and dress.

7-7. HERPES GENITALIS. A herpes type II viral infection.

S. Painful clear little "bumps" on the labia and introitus, perhaps with tender "knots" in the groin.

O. Occasional inguinal lymphadenopathy and a group of vesicles with surrounding erythema and edema. Often a history of lesions coming and going.

A. Herpes zoster is similar, but generally doesn't recur. Erythema multiforme is a larger vesicle often found on plantar surfaces that sometimes looks like tiny "targets" of concentric circles and becomes purplish as the lesions enlarge; fever is concurrent.

P. (1) Rule out concurrent gonorrhea and syphilis.

(2) Virus culture for herpes species.

(3) Caesarean section patients with active lesions.

(4) Pap smear (herpes has been linked with cervical carcinoma).

(5) A 2% lidocaine ointment for pain q.i.d. for less than 2 weeks.

(6) No occlusive dressings or medications except lidocaine ointment.

7-8. VAGINITIS. An inflammation and/or infection of the vagina.

a. Atrophic vaginitis.

S. Tender, itching vagina generally in an older, postmenopausal or even a castrated patient.

O. Occasionally a clear vaginal discharge with an atrophied, erythematous, sometimes dryer appearance to the vagina.

A. Rule out other forms of vaginitis with saline and KOH preps of discharge.

P. Apply Premarin cream, 2-4 gm p.v. q.d. Use this medication cautiously with full knowledge of side effects, contraindications, etc. Use the smallest amount necessary to control the symptoms.

b. Trichomonal vaginitis. Caused by trichomonas vaginalis.

S. Vaginal symptoms of burning, itching, and tenderness with discharge.

O. Petechial spotting with erythema of the vaginal wall (with a strawberrylike appearance), usually with a thicker yellow to green frothy discharge. A stat. saline prep reading shows trichomonads.

A. Wet prep rules out other organisms.

P. Rule out other organisms including gonorrhea. Flagyl 250 mg. t.i.d. for 7-10 days. Treat the patient's sex partner at the same time.

c. Candidal vaginitis. Caused by Candida albicans, also known as Monilia.

S. Vaginal symptoms as above.

O. Erythema with a generally thick, white cheesy curdlike discharge. Thrush (whitish) patches may exist on the vaginal walls. KOH preps should show mycelia and hyphae.

A. Rule out other organisms including gonococci.

P. Nystatin vaginal suppositories 100,000 unit, 1 supp p.v. daily x 14 days.

d. Nonspecific vaginitis. Generally caused by Hemophilus vaginalis.

S. Vaginal symptoms as above.

O. Acrid, viscous, or thin watery milky discharge. Wet preps will show some epithelial cells coated with bacteria, giving a dusty appearance.

A. Rule out other organisms, including gonococci.

P. Sultrin cream, 1 applicatorful p.v. b.i.d. for 6 days, then 1 q.d. h.s. for 8 days.

7-9. CYSTOCELE. A herniation of the posterior bladder wall into the vagina.

S. Sensation of retained urine after urinating and of vaginal "looseness."

O. Presents as a reducible nontender mass that is soft and located in the anterior vaginal wall. As the patient strains, the bladder can sag downward.

A. Differential diagnosis: Includes bladder tumors and stones, both of which are firm and easily outlined. Rarely is a small bowel hernia differentiated.

P. This disorder may be alleviated by the patient manually reducing the bladder by pressing it upward from the vagina. Intermittent use of a Menge pessary placed just inside the introitus may help. Surgery,

an anterior vaginal colporrhaphy, is often the only near-permanent cure.

7-10. RECTOCELE. A herniation of the rectal pouch into the vagina.

S. Constant urge for a bowel movement and a vaginal/rectal sense of fullness.

O. A finger can be inserted rectally and cause posterior pouching of the rectum. Straining down worsens the pouching. A soft posterior vaginal fullness. Defecation may be painful.

A. Differential diagnosis: Includes enterocele (a similar disorder occurring further back in the vagina from intestinal herniation), prolapsed cervix (seen on speculum-assisted vaginal examination), and rarely a tumor, which would be firmer and more easily delineated.

P. Stool softeners or laxatives (only for short periods). Avoid straining, coughing, or lifting. Get good exercise and bowel habits, as well as good dietary habits to facilitate elimination. Surgery (colpoperineorrhaphy) is generally curative.

7-11. CERVICITIS. An inflammation/infection of the cervix. This is the most common gynecological disorder generally encountered.

S. Discharge, low back pain, dyspareunia, dysmenorrhea (painful menstruation), urinary frequency and urgency, and/or dysuria.

O. Thin, mucuslike leukorrhea (discharge); an erythematous, petechial cervix and posterior fornix (back pouch of vagina) with a discharge from the cervical os (opening). Smears show W.B.C.'s. Cervical erosion and eversion may be noticeable.

A. Rule out infectious organisms by wet preps, KOH preps, and smears.

P. Pap smear first. If no organisms present, give AVC cream, 1-2 applicatorsful p.v. h.s. or b.i.d. for 28 days, through the entire menstrual cycle. Treat specific organisms as in the forms of vaginitis. Cryosurgery (with a CO_2 wand) may be necessary in intractable cases.

7-12. CERVICAL POLYPS. Small pedicled growths on the cervix.

S. Discharge, abnormal vaginal bleeding.

O. Flesh- to red-colored rounded or flame-shaped tissue on a pedicle or strand of tissue on the cervix or, if redder, coming from the endocervix.

A. Differential diagnosis (based on pathologic studies): Includes endometrial neoplasm or growth, small submucous myoma, endometrial polyp, and products of conception from an incomplete spontaneous abortion.

P. Work up and treat any associated cervicitis. Remove at the base of the lesion. Cervical dilatation may be necessary for polyps located high up in the endocervix. Send lesion to lab for pathologic studies. Full D&C if other polyps are suspected. Warm vinegar douche q.d. for 3-7 days to reduce inflammation.

7-13. ENDOMETRITIS. An inflammation/infection of the uterine lining, generally postpartum, post-D&C, or post incomplete abortion.

S. Fever, pain in the lower abdomen in the centerline, and low back pain.

O. Occasionally a discharge from the cervical os; history of recent delivery, abortion, or D&C. W.B.C. count may be mildly elevated.

A. Rule out masses by palpation; rule out carcinoma by D&C and study of samples obtained, or by a simpler endometrial biopsy done in like fashion.

P. Endometrial biopsy and smear as indicated. Specific antibiotics for organisms (Vibramycin 200 mg. for 1 day, then 100 mg. q.d. for 9 days is useful). D&C if abortion has been suspected. This must be done in a less vigorous fashion than normally. If moderately severe systemic symptoms are present, consider a slight delay, using antibiotics first. Monitor for any systemic infection until after all symptoms subside.

7-14. UTERINE MYOMA (fibroid). The most common gynecological neoplasm. It is a round, firm, benign uterine tumor composed of smooth muscle and dense connective tissue.

S. Lower adbominal pain, bleeding, dysmenorrhea, discharge, dyspareunia, urinary frequency, sensation of pressure, and constipation.

O. Palpable enlargement of the uterus, feeling firm and rounded.

A. D&C may help confirm, as no abnormal specimens may be found. Differential diagnosis: Includes other neoplasms and benign hypertrophy; sarcoma and adherent adnexa. Surgical sections are the principal diagnostic tool.

P. Defer surgery until postpartum, if patient is pregnant, unless the uterus feels to be over two months larger than the EDC (estimated date of confinement) computes to. Watch for signs of distress. A torsioned pedicle of a myoma or intestinal obstruction may necessitate emergency surgery and blood transfusion. Excision with perhaps hysterectomy (uterus removal) is indicated if the disorder is extensive.

7-15. SALPINGITIS (pelvic inflammatory disease). An infection of the fallopian tubes, usually bilaterally, with a rapid spread to the rest of the pelvis.

S. Severe, nonradiating cramping lower abdominal pain, chills, fever, abnormal menses, leukorrhea, dyspareunia, and dysmenorrhea.

O. Thickening of the adnexal structures and palpation of the tubes (not normally paplable) on pelvic exam. Adynamic ileus (stoppage of fecal passage) may present. History of nausea and pain since last period. Discharge. Stable hematocrit and W.B.C. count to 15,000-20,000. The erythrocyte sedimentation rate will be increased.

A. Differential diagnosis: Includes appendicitis (lower fever and W.B.C. count, localized RLQ pain, nausea, and vomiting) and ectopic pregnancy (a sudden RLQ or LLQ pain, with bleeding, soft tender mass and

recent irregular menses).

P. Culture discharge (rule out tuberculosis and gonorrhea). Treat organisms appropriately (ampicillin, 500 mg. P.O. q.i.d. for 7-10 days). Control pain with analgesics and suppress menstruation with Enovid (10-15 mg. P.O. q.d. for 28 days). Treat fever and malaise symptomatically. Observe, as this disorder is potentially very dangerous. RULE OUT MASSES. Since this can be an emergency, ruling out masses helps to reduce the chance that it becomes a surgical emergency.

7-16. TUBO-OVARIAN ABSCESS. A formed abscess of the tubes that may spread to the ovaries.

S. Spikes of fever, malaise, bilateral lower quadrant pain with an acute onset, sudden and pronounced. Metrorrhagia and hypermenorrhea (later section).

O. Palpable mass, tender. Possible history of disappearing mass with softening of the abdomen, suggesting rupture of the abscess. Increased W.B.C. count and sed. rate (erythrocyte sedimentation rate). Biocept-G negative.

A. The Biocept-G rules out pregnancy and thus ectopic pregnancy. If pain is unilateral, rule out appendicitis by history and lower W.B.C. count and sed. rate. Endometriosis (endometrium growing outside the uterine cavity in its normal position) is ruled out by the cyclic nature of the pain.

P. Vibramycin 200 mg. P.O. b.i.d. for 10 days. Constant monitoring for abdominal softening. Local heat and analgesics. Surgery is indicated if rupture is suspected. If access via the cul-de-sac is possible, aspiration of abscess contents for temporary alleviation of the mass by large-bore needle may be of value.

7-17. OOPHORITIS. An infection of the ovaries, generally secondary to another infection but clinically significant from a potential infertility standpoint, since healing of ovarian tissue is not well accomplished.

S. Pain, fever, and menstrual abnormalities. Evidence of other infection as the complaints are noted.

O. Enlargement of the ovary and excessive tenderness to palpation. Anemia and increased W.B.C. count and sed rate are noted.

A. Other adnexal infections may coexist.

P. Analgesics such as codeine sulfate 30-60 mg. every 4-6 hours. Observe for systemic signs. Vibramycin 200 mg. stat., then 100 mg. q.d. for 13 days. Local heat, rest, fluids. Drain abscesses (if pointing down to the cul-de-sac, by large-bore needle aspiration). If chronic in nature, and if the patient is older, removal of the ovaries and tubes (salpingo-oophorectomy) bilaterally may be needed.

7-18. OVARIAN CYSTS AND TUMORS. Many varieties of cysts and tumors may be noted on pelvic examination and palpation of the ovaries. Rule out the known disorders in this chapter, wait one full menstrual cycle, and recheck the size and, of course, the nature of palpable adnexal masses; obtain specialist assistance if the mass has not regressed during the trial

period. If it has, make a note of all findings and recheck the patient periodically to watch for recurrence.

7-19. PREMENSTRUAL TENSION. A cyclical disorder.

S. Anxiety, agitation, insomnia, inability to concentrate fully, feelings of inadequacy, depression, and weight gain.

O. Document the symptoms. Lab and pelvic exams are inconclusive.

A. Rule out hyperthyroidism (if lab facilities permit, increased T_3 and decreased T_4 with perhaps a palpable thyroid), hyperaldosteronism (decreased serum potassium, increased serum sodium, alkalosis, and increased plasma aldosterone), and hyperinsulinism (decreased blood sugar). Also note any clinical symptoms. Psychoneurosis and psychosis are also to be considered, but they are not cyclical.

P. Reassurance is very important. Diuretics, such as Aldactone 2 mg./kg./d. in divided doses under supervision. Antidepressants as needed. Psychiatric help as needed, or assistance with differentiated disorders.

7-20. DYSMENORRHEA. Pain with menstrual periods. Secondary dysmenorrhea is a term applied to dysmenorrhea from organic causes (chronic pelvic inflammatory disease, endometriosis, etc.). This generally occurs over five years after menarche or at the beginning of having menstrual periods.

S. Pain with menstruation, abdominal bloating, breast tenderness, and a sensation of pelvic heaviness around the time for the patient's period.

O. History of intermittent premenstrual cramping through the period in the lower abdominal midline.

A. Diagnosis is based on history and absence of other pelvic exam findings.

P Analgesics as needed. Local heat and reassurance. Motrin 400 mg. P.O. q.i.d. from the onset of cramps to the end of the period.

7-21. AMENORRHEA. Failure to menstruate at the appropriate time. Primary amenorrhea is when the patient has never menstruated, while secondary amenorrhea is when over 90 days pass with no menstrual flow.

S. and O. All hinge on the absence of menstrual flow.

A. Assessment is usually unmistakable.

P. Work up the patient as follows:

(1) Perform the most accurate pregnancy test possible (the Biocept-G, if available to be done).

(2) If pregnancy test is negative, give Provera 10 mg. P.O. q.d. for 5 days.

(3) If patient bleeds, anovulation (no ovulation) occurred.

Nothing further.

(4) If the patient doesn't bleed, and if possible, draw a serum FSH and LH (follicle-stimulating hormone and luteinizing hormone). Then give Premarin 1.25 mg. P.O. q.d. for 21 days, then Provera as above.

(5) If no bleeding, trace the tract through to the uterus to target organ or outflow tract failure.

(6) If patient bleeds, get serum FSH and LH results. If they are low, then C.N.S. or pituitary failure is suspected. Refer the patient out for the C.N.S. or pituitary tumor workups.

(7) If the FSH and LH are high, then ovarian failure is suspected, dictating referral for karyotyping (chromosome studies) for genetic deficiencies.

(8) Remember, amenorrhea is complex and elusive. If at any time the disorder or its workup exceeds the practitioner's expertise or facilities, the case should be referred to a specialist with the means to work up and manage the case.

7-22. ABNORMAL UTERINE BLEEDING. A symptom of atypical menstrual flow in amount or timing. Hypermenorrhea (excessive flow) or menorrhagia; polymenorrhea (flow less than every 24 days); and metrorrhagia (flow at times other than regular time for the period) are examples.

Subjective and objective findings are as above.

A. Based on history, examination, and appropriate lab testing.

P. (1) Take a careful history and perform a careful exam. Take vaginal smears for cytology and bacteriology (fix first then add 1% HCl, which hemolyzes the red blood cells, if the bleeding is active. HCl is hydrochloric acid).

(2) Run a urinalysis, hematocrit, STS, W.B.C. count with differential, sed. rate, bleeding time, clotting time, clot retraction time, and platelets.

(3) Cervical biopsy and D&C may be critical.

(4) Hypermenorrhea. D&C, support hypovolemia, Provera 5-10 mg. q.d. for 4 days starting with the 21st day of the cycle. First day of bleeding is the first day of the cycle.

(5) Metrorrhagia. Give Enovid 10 mg. P.O. q.d. on days 5-20.

(6) Unknown or unresponsive entities should be referred for further study.

7-23. MENOPAUSE/CLIMACTERIC. Climacteric is the onset of menopausal symptoms, while menopause itself is the cessation of menses for over one year. These can of course occur due to removal or major dysfunction of the ovaries.

S. The climacteric begins at ages 40-55 with hot flushes,

diaphoresis, and depression or agitation.

O. Vaginal atrophy with dyspareunia and pruritus may exist.

A. If bleeding suddenly recurs, rule out neoplasms by pelvic exam palpation.

P. (1) Reassurance and understanding are essential.

(2) Mild sedatives as needed.

(3) If symptoms are severe or patient is fairly young, Premarin should be given low dose (0.3-2.5 mg. ranges) and adjust upward to control the symptoms that are presented to you.

7-24. CONTRACEPTION.

a. Rhythm uses basal body temperature to figure the period of ovulation. It is the only method allowed in Catholic areas.

(1) Take the temperature immediately upon awakening and before arising. Be sure to chart this reading daily.

(2) One to 1 1/2 days before ovulation, the temperature drops; 1-2 days after ovulation, the temperature rises about 0.7 degrees F. Wait 3 days after the temperature rises before allowing intercourse. The BBT thermometer is best and most accurate of all when utilizing this method.

b. Oral contraceptives. Selection is important. These medications generally work by artificial suppression of FSH secretion by the posterior pituitary. Young girls (16-20) must avoid oversuppression of the pituitary hormones, while older women must avoid thromboembolism.

(1) Ask about nausea and vomiting in previous pregnancies, fluid retention, weight gain, acne, history of varicose veins, etc.

(2) If menstrual flow is heavy and long, use more progestin (Norinyl 2 mg., or Norlestrin 2.5 mg.) to avoid breakthrough bleeding.

(3) If flow is shorter than normal, consider more estrogen and less progestin (Ovulen, Ortho-Novum, Enovid).

(4) If menstrual or other side effects are noted, increase estrogen and decrease progestin to increase the menstrual flow, or vice versa to decrease the flow. Watch the dosages of each hormone in the pills to adjust the flow in this manner.

(5) Give 1 tab P.O. q.d. If 1 day is missed, take two tabs the next day. If two or more days are missed, discontinue the tablets until the start of the next month and use another form of contraception until then.

(6) If women are very regular in timing, amount of flow, and duration of flow, try norethindrone acetate 0.2 mg. q.d. It has fewer side effects.

(7) Know the pills before prescribing, read the information, rule out any contraindications before prescribing.

c. Diaphragm and spermicidal jelly. Fitted to proper size to snugly cover the cervix and covered with jelly, this method works well when left in place after intercourse for at least 8 hours.

d. Condoms. Help prevent VD and work well with immediate postcoital withdrawal of the penis to prevent leakage of semen.

e. Foam. Spermicidal foam such as Delfen given as 1-2 applicatorsful p.v. before intercourse works well. Irritation and messiness may be noted.

f. Intrauterine devices (IUDs). The Cu-7 and Tatum-T work well when properly monitored after careful installation. Prep the cervix as for the D&C. Sound the uterus and measure the inserter to the noted depth. Turn the IUD to a position lateral so as to make it open when inserted to either side. Insert the device, pull back the inserter and withdraw the inserter. Cut the string to a couple of inches outside the cervix. Have the patient feel for the string regularly and after each period.

NOTE: This chapter is not all-inclusive and much of the data is for information only. Many of the tests cannot be performed with existing facilities. This information is useful to the practitioner becoming aware of the possibilities of disease entities and treatments in a basic way. Practice under close supervision is essential to learn properly these techniques. Be sure to refer patients to the specialists if ever in doubt or if inadequate facilities exist.

CHAPTER 8

OBSTETRICS

8-1. Obstetrics is that branch of surgery that deals with the management of women during pregnancy, labor, and the puerperium (42 days following childbirth and expulsion of the placenta; the generative organs usually return to normal during this time).

8-2. DIAGNOSIS OF PREGNANCY. In about one-third of cases it is difficult to make a definitive diagnosis before the second missed period because the variability of physical changes induced by pregnancy, possibility of tumors, obesity, and poor patient relaxation often interfere with the examination. If in doubt, schedule a reexamination in 3-4 weeks. If available the Early Pregnancy Test (E.P.T.) or in Europe, the Predictor Test, an anti-HCG test for pregnancy, can be used at least 9 days after her last period was due. This test claims a 97 percent accuracy rate.

a. The following symptoms and signs are usually due to pregnancy, but even two or more are not diagnostic. A record or history of time and frequency of coitus may be of considerable help.

(1) Symptoms. Amenorrhea (missed period), nausea and vomiting, urinary frequency and urgency (first trimester), breast tenderness and tingling (after 1-2 weeks), "quickening" (first movement of the fetus felt in the uterus; may appear about 16th week), weight gain.

(2) Signs. Skin pigmentation (after 16th week), epulis (hypertrophic gingival papillae often seen after first trimester), breast changes (enlargement, vascular engorgement, colostrum), abdominal enlargement, cyanosis of vagina and cervical portio (about the 6th week), softening of cervix (4th or 5th week), softening of cervicouterine junction (5th or 6th week), irregular softening and slight enlargement of the fundus (about 5th week), generalized enlargement and diffuse softening of corpus (after 8th week).

b. Positive manifestations. Not usually present until the 4th month, but is undeniable proof of pregnancy: Ausculation of fetal heart, palpation of fetal outline, recognition of fetal movement.

c. Differential diagnosis. All the presumptive signs and symptoms of pregnancy can be caused by other conditions and all tests for pregnancy can be positive in the absence of conception. Some examples for missed period are psychic factors (fear of pregnancy, venereal disease, emotional shock); endocrine factors (thyroid, adrenal, or ovarian dysfunctions); metabolic factors (anemia, diabetes, systemic disease); nausea and vomiting factor (acute infections, G.I. disorders, emotional disorders); urinary frequency, GU infection, pelvic tumor, emotional tension. These are just a few examples, there are many more factors that may cause a false diagnosis of pregnancy.

8-3. MINOR DISCOMFORTS OF NORMAL PREGNANCY.

a. Backache.

b. Syncope (lightheadedness and fainting).

c. Dyspnea (difficulty in breathing).

d. Urinary symptoms (frequency, urgency, and stress incontinence).

e. Heartburn.

f. Constipation (avoid enemas as they may induce labor).

g. Hemorrhoids.

h. Breast soreness.

i. Ankle swelling (restrict salt).

j. Varicose veins (provide elastic support).

k. Leg cramps (discontinue medications containing large amounts of phosphorus. Reduce dietary phosphorus intake by limiting meat to 1 meal a day and milk to 1 pint a day).

l. Abdominal pain due to pressure, round ligament tension, flatulence, distention, bowel cramping, and uterine contractions. Intra-abdominal disorders and uterine or adnexal disease can also cause abdominal pain and must be considered and treated as required.

m. Morning sickness occurs in one-half of pregnant women usually starting during 5th or 6th week and persisting until the 14th-16th week. Most severe in the morning upon rising. Treatment: Reassurance and dietary restriction; restrict fats, odorous foods, and spiced dishes. In general, dry foods at frequent intervals are indicated.

8-4. HYPEREMESIS GRAVIDARUM. Persistent severe vomiting; can be fatal if not controlled. Only about 0.2 percent of pregnant women develop hyperemesis gravidarum and cause is not known.

S. Persistent severe vomiting.

O. Acidosis, weight loss, avitaminosis, and jaundice.

A. Hyperemesis gravidarum. Differential diagnosis: Any of the diseases with which vomiting is associated, e.g., infections, poisoning, neoplastic disease, hyperthyroidism, gastric disorders, gallbladder disease, intestinal obstruction, hiatal hernia, and diabetic acidosis.

P. Hospitalize patient in a private room at complete bed rest without bathroom privileges. Allow no visitors (not even husband) until vomiting stops and patient is eating. Place patient N.P.O. x 48 hours. Maintain normal nutrition and electrolyte balance by IV therapy with vitamin and protein supplements as required. Give chlorpromazine IM or suppositories. If no response after 48 hours, institute nasogastric tube feeding of a well-balanced liquid baby formula by slow drip. As soon as possible, place patient on a dry diet of 6 small feedings daily with clear liquids 1 hour after eating. If the situation continues to deteriorate in spite of therapy, therapeutic abortion may be required. Urgent indications are delirium, blindness, tachycardia at rest, jaundice, anuria, and hemorrhage.

8-5. ECTOPIC PREGNANCY. Pregnancy outside the cavity of the uterus. Occurs in 0.5 percent of pregnancies. About 98 percent of ectopic pregnancies occur in the fallopian tubes.

S. Amenorrhea or disordered menstrual pattern followed by uterine bleeding, pelvic pain, and pelvic mass formation. May be acute or chronic. Acute (about 40 percent of cases): Sudden onset of sharp or cutting, intermittent severe lower quadrant pain that does not radiate, with backache during the attack. Scant but persistent uterine bleeding is present in approximately 80 percent of cases. At least two-thirds of patients give history of abnormal menstruation; most have been infertile. Chronic (about 60 percent of cases): Increasing pelvic discomfort, slight but persistent vaginal spotting.

O. Acute: Palpable pelvic mass in 70 percent of cases. Collapse and shock occur in about 10 percent of cases, often after pelvic examination. Chronic: Palpable pelvic mass. Lab findings: CBC shows anemia with slight leukocytosis. Urine urobilinogen elevated in ectopic pregnancy with internal bleeding. Pregnancy tests are of little value in diagnosis.

A. Ectopic pregnancy. Differential diagnosis: Many acute abdominal illnesses, e.g., appendicitis, salpingitis, uterine abortion.

P. Hospitalize patient if there is a reasonable likelihood of ectopic pregnancy. Treat for shock. If possible, type and cross match blood. A transfusion should be started before surgery is begun. Surgical treatment is imperative. Besides normal debridement, generally a salpingectomy will be required. Iron therapy for anemia may be necessary during convalescence.

8-6. PREECLAMPSIA-ECLAMPSIA. Usually occurs in last trimester or early in the puerperium. Preeclampsia denotes the nonconvulsive form; with the development of convulsion and coma the disorder is termed eclampsia. About 10 percent of pregnancies develop preeclampsia-eclampsia and about 5 percent of cases progress to eclampsia. Ten to 15 percent of the women with eclampsia die. Cause is unknown. Predisposing factors are vascular and renal disease, sodium retention, and multiple pregnancy.

S. Preeclampsia: Headache, vertigo, malaise, irritability (due in part to cerebral edema); scintillating scotomas (irregular luminous patches in the visual field after physical or mental labor), visual impairment, epigastric nausea, liver tenderness, and generalized edema.

Eclampsia: Severe preeclampsia symptoms plus generalized tonic-clonic convulsions, coma followed by amnesia and confusion, laborious breathing, frothing at the mouth, twitching of muscle groups (e.g., face, arms), nystagmus (constant involuntary movement of the eyeball), and oliguria or anuria.

O. Preeclampsia: Persistent hypertension or a sudden rise of blood pressure, generalized edema, and proteinuria during the last 4 months of pregnancy. Opthalmoscopic examination in severe preeclampsia and eclampsia reveals variable arteriolar spasm, edema of optic disc, and with increasing severity, cotton-wool exudates and even retinal detachment.

Eclampsia: Marked hypertension preceding a convulsion, and hypotension thereafter (during coma or vascular collapse), and 3-4 + proteinuria. Opthalmoscopic examination reveals papilledema, retinal edema, retinal detachment, vascular spasm, arteriovenous "nicking," and hemorrhages. Repeated opthalmoscopic examination is helpful in judging the success of treatment.

A. Preeclampsia-eclampsia. Differential diagnosis: Primary hypertension, renal and neurologic disease.

P. Preeclampsia: Objectives are to prevent eclampsia, permanent cardiovascular and renal damage, ocular or vascular accidents, and to deliver a normal baby. Delivery should be delayed, if possible, until disease is under control or improvement is marked.

Bed rest with sedation under alert supervision, including frequent B.P. readings and urine protein determination, and careful recording of fluid intake and output. Try to achieve a zero water balance between intake and output. Give diuretics and hypertensive drugs as needed. Place patient on a low-fat, high carbohydrate, with moderate protein, salt-poor (less than 1 gm a day) diet. Opthalmoscopic examination should be done daily.

Eclampsia: Same as preeclampsia plus give magnesium sulfate 10 ml. of 25% aqueous solution IV or IM initially, then 5 ml. IV or IM q.6h. to prevent or control convulsions, lower B.P., and encourage diuresis. (Do not repeat magnesium sulfate if urinary output is less than 100 ml./h., respiration is less than 16/min, or knee jerk reflex is absent.) In case of overdose, give calcium gluconate (or equivalent) 20 ml. of 10% solution IV slowly, repeat every hour until urinary, respiratory, and neurologic depression have cleared (do not give more than 8 injections in 24 hours).

Place patient at absolute bed rest in darkened quiet room. No visitors. Use indwelling catheter, leave B.P. cuff on her arm. Do not disturb patient with unnecessary procedure (e.g., bath, enemas, douches, etc.). Patients with eclampsia often develop premature separation of the placenta with hemorrhage and are susceptible to shock.

Because severe hypertensive disease, renal disease, and preeclampsia-eclampsia are usually aggravated by continuing pregnancy, the best method of treatment is termination of pregnancy. Control eclampsia before attempting induction of labor. Labor can usually be induced by rupturing the fetal membrane. Use oxytocin (Pitocin) to stimulate labor if necessary. If the patient is not at term, if labor is not inducible, if she is bleeding, or if there is a possible disproportion, a cesarean section may be necessary. Most patients improve dramatically in 24-48 hours, but early termination of pregnancy is usually required.

8-7. ANEMIA DURING PREGNANCY. Iron deficiency anemia and folic acid deficiency anemia can be prevented and treated by administering prophylactic multivitamin plus iron capsules to all pregnant women during pregnancy and for 1 month following delivery.

8-8. ABORTION (MISCARRIAGE). At least 12 percent of all pregnancies terminate in spontaneous abortion; of these, three-fourths occur before the 16th week of gestation.

S-O. Abortion is broken down into four classifications:

Inevitable abortion: The passage of some or all of the products of conception is momentarily impending. Bleeding and cramps do not subside.

Complete abortion: All of the conceptus is expelled. When complete abortion is impending, the symptoms of pregnancy often disappear;

A. Preeclampsia-eclampsia. Differential diagnosis: Primary hypertension, renal and neurologic disease.

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Complete abortion: All of the conceptus is expelled. When complete abortion is impending, the symptoms of pregnancy often disappear;

sudden bleeding begins, followed by cramping. The fetus and placenta may be expelled separately. When the entire conceptus has been expelled, pain ceases but slight spotting persists.

Incomplete abortion: A significant portion of the conceptus (usually placental fragments) remains in the uterus. Only mild cramps, but bleeding is persistent and often excessive.

Missed abortion: Pregnancy has been terminated for at least 1 month, but the conceptus has not been expelled. Symptoms of pregnancy disappear and body temperature is not elevated. Brownish vaginal discharge but no free bleeding. Pain does not develop. Cervix is semifirm and slightly patulous (open, distended, spread apart); uterus becomes smaller and irregularly softened.

Lab finding: Pregnancy tests are negative or positive. Blood and urine findings are those usually found in infection or anemia if these complications have occurred.

A. Abortion. Differential diagnosis: Bleeding must be differentiated from bleeding from aborting ectopic pregnancy, anovulatory bleeding in nonpregnant women, and membranous dysmenorrhea.

P. If abortion has occurred after 1st trimester, the patient should be hospitalized. In all cases, uterine contractions should be induced with oxytocin (not ergot preparations) to limit blood loss and aid in expulsion of clots and tissues. Ergotrate should only be given if complete abortion is certain. Treat for shock. If there are any signs of infection, give antibiotics. D&C is indicated to remove possibly retained tissue.

8-8. HYDATIDIFORM MOLE AND CHORIOCARCINOMA. A degenerative disorder of the chorion (develops into placenta); occurs in 1 out of 1,500 pregnancies; is five times more prevalent in the Orient than in Western countries; and more common in women over 40. Malignant change occurs in about 4 percent (higher in Asia) of cases and is often fatal when it does occur.

S. Excessive nausea and vomiting in over one-third of cases. Uterine bleeding beginning at 6-8 weeks is observed in virtually all cases and is indicative of threatened or incomplete abortion.

Choriocarcinoma may manifest itself by continued or recurrent uterine bleeding after evacuation of a mole or by presence of an ulcerative vaginal tumor, pelvic mass, or evidence of distant metastatic tumor. Diagnosis is established by pathologic examination of curettage or biopsy.

O. Uterus larger than would be expected in normal pregnancy of the same duration in one-fifth of cases. Intact or collapsed vesicles may be passed through vagina. Preeclampsia-eclampsia, frequently of the fulminating type, may develop during the second trimester, but is unusual. Vaginal smear reveals heavy cell groupings and a predominance of superficial cells.

A. Hydatidiform mole. Differential diagnosis: Hyperemesis gravidarum, multiple pregnancy (extra enlarged uterus), threatening or incomplete abortion.

P. Hospitalize, treat symptoms, evacuate the uterus; probably

will require D&C. If the uterus is larger than a 5-month pregnancy, a hysterectomy is preferred. If malignant tissue is discovered, chemotherapy is necessary.

8-9. CHILDBIRTH.

a. Signs and symptoms of impending childbirth:

(1) Nausea and vomiting.

(2) Mother displays intense anxiety.

(3) Heavy show of blood/bloody mucous.

(4) Intense desire to defecate.

(5) Rapidly occurring contractions with increasing intensity and desire to bear down.

(6) Bulging of membranes from vulva and/or spontaneous rupture.

(7) Dilation of anus with expulsion of feces.

(8) Crowning of the fetal head (figure 1).

b. Delivery of the infant: NOTE: Maintain sterile technique whenever possible, but do not endanger the mother or infant with undue delay.

(1) Place mother in dorsal position, with legs bent and hands grasping knees. Assign an assistant to stand at head of bed to monitor vital signs and offer verbal support and encouragement to the mother.

(2) Attempt to gain mother's confidence and cooperation by explaining what you are doing and what you expect of her.

(3) If time permits, put on sterile gloves and drape perineal area with sterile towels.

(4) As birth approaches, the head distends the perineum more and more with each contraction. When two to three inches of fetal scalp show, an episiotomy may be necessary to prevent serious laceration. Cut the episiotomy 1 to 1 1/2 inches long. (See figure 2.)

(5) Apply gentle pressure with palm of hand to crowning head and perineal area to prevent rapid expulsion of the head. NEVER TRY TO STOP DELIVERY BY PUSHING FORCEFULLY AGAINST THE HEAD.

(6) Encourage mother to pant during contractions to allow for slow, gentle delivery.

(7) As head is delivered, provide support with both hands and allow the head to rotate naturally to the side.

(8) Immediately slip finger around infant's neck and feel for cord that may be wrapped around the neck and choking the infant. If present, attempt to gently slip it off over the head. If it is not possible to remove the cord, clamp and cut the cord at once. (See (14)

below.)

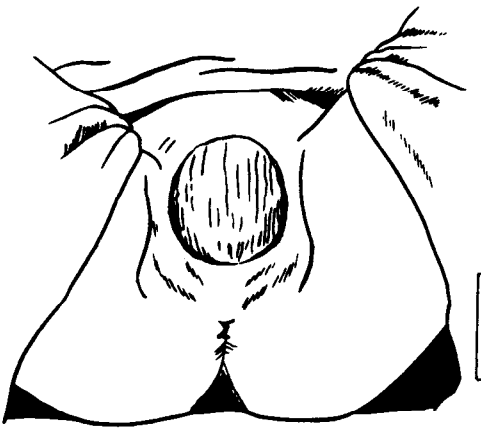

FIGURE 1

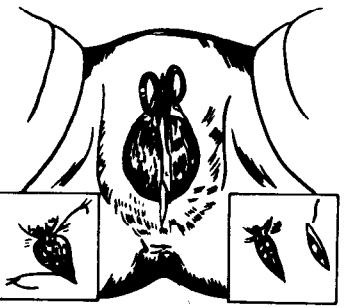

FIGURE 2

(9) If membranes are still intact over the infants face, remove by snipping them at the nape of the neck and pulling away from face and airway at once.

(10) Suction nose then mouth gently with bulb syringe to insure adequate airway. (Newborns are obligate nose breathers.) (See figure 3.)

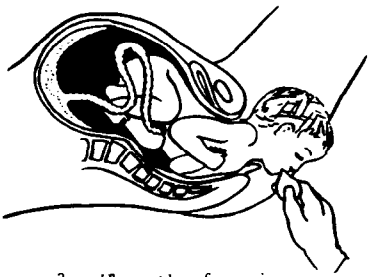

Figure 3 When the face is delivered, the shoulders reside under the pubis; the mouth and oropharynx should be aspirated.

(11) After insuring patient airway, proceed to deliver the shoulders. Place hands on either side of head and exert gentle downward pressure (toward the floor) to deliver the anterior shoulder. Then exert

gentle upward pull to permit delivery of the posterior shoulder. Support the rest of the body as it is born. (See figures 4 and 5.)

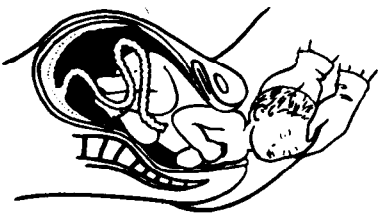

Figure 4 The head rotates to accommodate the shoulders during passage through the birth canal.

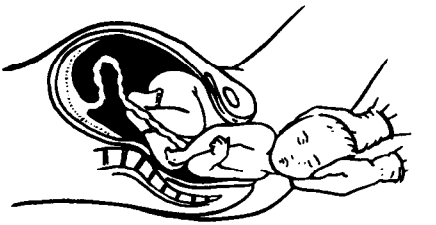

Figure 5 Following rotation, the shoulders are delivered.

(12) With firm grip on body, hold infant along length of arm, with head lower than feet and again suction the nose and mouth. Keep the infant below or equal to the level of the mother until the cord stops pulsating. DO NOT HANG INFANT BY THE FEET.

(13) If infant does not cry spontaneously, apply gentle stimulus to back and soles of feet by rubbing and gently patting.

(14) Wait for cord to stop pulsating, then tie off cord several inches apart and cut between the two ties. Apply first tie several inches from infant's body. Observe for evidence of excessive bleeding from ends of cord.

(15) Wrap infant in blanket, then place on mother's abdomen.

c. Delivery of placenta.

(1) Signs of separation of the placenta.

(a) Large gush of blood from the vagina.

(b) Umbilical cord protrudes 2 to 3 inches farther out of the vagina.

(c) Fundus rises upward in the abdomen.

(d) Uterus firming and becoming more globular.

(2) Expulsion.

(a) Ask mother to "bear down" to expel the placenta. Avoid excessive massage of the uterus.

(b) Apply GENTLE downward pressure on fundus to aid delivery, but do not apply excessive pressure or force.

(c) Check the placenta for evidence of missing portions; any section missing can mean continued uterine bleeding.

d. Care of the newborn.

(1) Maintain patient airway.

(2) Administer eye care (silver nitrate or penicillin prophylaxis).

(3) Observe cord stump for evidence of bleeding.

(4) Provide artificial respiration and cardiac support as needed.

e. Care of the mother.

(1) Observe for signs of excessive bleeding and shock.

(2) Prevent relaxation of the uterine muscles by frequent massage and close observation.

(3) Be prepared to administer IV fluid therapy as needed.

(4) Suture any lacerations and the episiotomy with chromic gut, 00 or 000. Start above apex of vaginal incision and close the vaginal mucosa with a running stitch. Suture the perineal portion as any other wound, making sure that anatomic structures are approximated. (See figure 2.) If the anal sphincter muscle or rectal wall is torn, these are repaired first. Try to get patient evacuated if lacerations are severe.

(5) Take mother's temperature 4-5 times a day. Any elevation above 100.4°F. present on successive days is evidence of infection.

(6) If membranes are ruptured more than 12 hours prior to delivery, assume infection to be present and start antibiotic therapy. If infection occurs after delivery, as evidenced by fever, foul smelling discharge, and tender uterus, start antibiotic therapy.

f. BREECH DELIVERY. (See figures 6-8.)

(1) Let baby be expelled spontaneously to the umbilicus.

(2) Cut a generous episiotomy.

(3) Deliver buttocks by gently pulling upward.

(4) Pull gently until an axilla is visible. Do not exert pressure above the iliac crests upon the abdomen (of the infant) to avoid injury to the abdominal organs.

(5) Have an assistant press downward on the fundus gently.

(6) Deliver the anterior or posterior shoulder, whichever is easier.

(7) Deliver the other arm.

(8) Deliver the head as follows:

(a) With baby lying face down on your arm, put your index finger in baby's mouth.

(b) Hook two fingers of the other hand over each of the baby's shoulders, palm on baby's back.

(c) Pull downward until occiput is under the symphisis.

(d) Bring head out by raising the baby's body up toward the mother's abdomen.

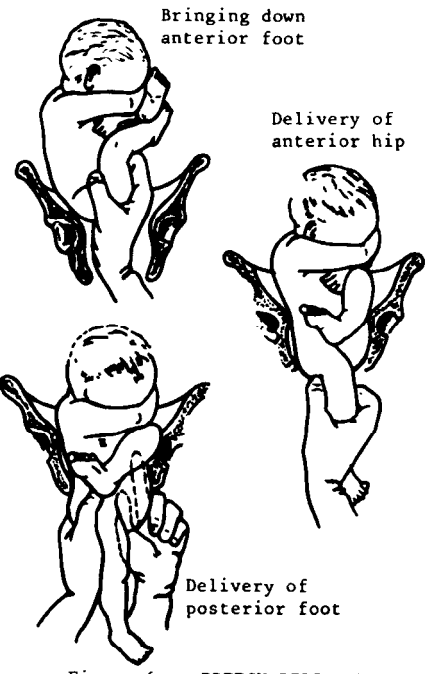

Figure 6 BREECH DELIVERY

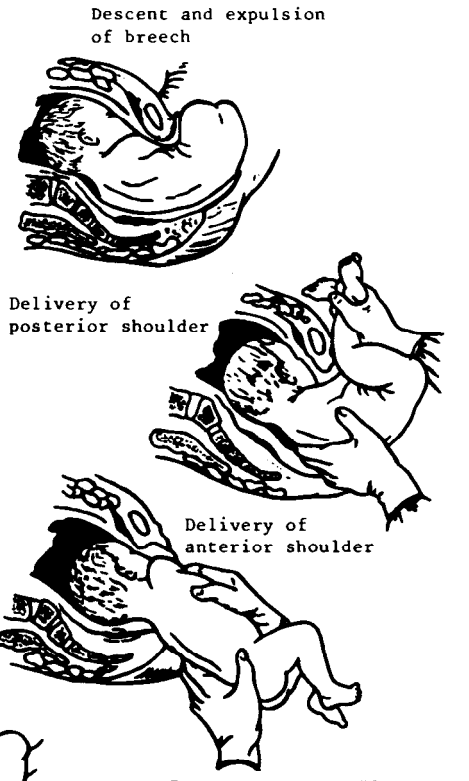

FIGURE 7 BREECH DELIVERY

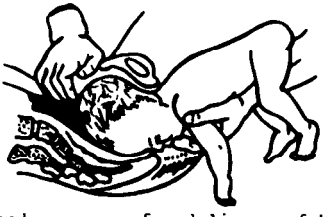

Figure 8 Wigand maneuver for delivery of head. Fingers of left hand inserted into infant's mouth or over mandible; right hand exerting pressure on head from above.