

Bulletin of the
University of Minnesota Hospitals
and
Minnesota Medical Foundation



Progress in Otology

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MINNESOTA MEDICAL FOUNDATION

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I. PROGRESS IN OTOLOGY

Lawrence R. Boies, M. D.

Introduction

The purpose of this presentation is to acquaint you with the progress that has been made in otology in recent years. This would seem more purposeful for a general staff meeting such as this one rather than to offer you a discussion of a subject in which most of you would be expected to have a very limited interest.

Two decades ago the major effort of the clinical otologist in this country was concerned with the problems related to middle ear infections and their sequelae. In addition, the combined practice of ophthalmology and otolaryngology, an American creation with which a majority of those practicing clinical otology were concerned, was not conducive to inquiry into the numerous otologic problems that are the subject of investigation today. Much of the fundamental research was in the hands of European investigators unhampered by the divided interest just mentioned.

The advent of the sulfonamides in 1937 and the antibiotics in 1942 "released" in part some of the time and energy utilized in caring for the otologic problems concerned with middle ear suppurations. Improvements in graduate training in otolaryngology and in ophthalmology have recruited deeper interests in each field separately.¹ Today, the approved residencies in either field are three years in length and there are no more combined residencies.

It is predicted that eventually the combined practices will disappear, except in smaller areas of population.² Probably, there will continue to be a place for those who desire to do a "general practice" in eye, ear, nose and throat.

Preparation for this type of practice would not be by way of the approved residency and board certification would not be necessary.

At Minnesota, combined training in ophthalmology and otolaryngology has not been offered for more than a decade, although a combined department existed in name up to July 1, 1954. On that date separate departments were established.

This summary of the progress made in recent years in otology is offered in outline form. More detailed information is available in a textbook which is the product of our department under the title FUNDAMENTALS OF OTOLARYNGOLOGY, published by the W. B. Saunders Company.

INFECTIONS

Acute Otitis Media and its Complications

Medicine is generally aware of the marked change in the incidence of acute middle ear infections and their complications that began with the introduction of the sulfonamides in 1937 and has continued through the antibiotic era.

Today, it seems reasonable to make the statement that any acute middle ear infection can be cured without complication if the following requirements are met:

1. The infection is treated promptly and adequately with an antibiotic to which the causative organism is sensitive.
2. The middle ear drains of its exudate.

The incidence of complications of acute middle ear suppuration has of course decreased with the control of acute otitis media. In 1936, one hundred and one operations were performed in the University Hospital for acute mastoiditis. In recent years the incidence has dropped to one or two such cases each year. Likewise, the other complications of acute middle ear and

mastoid suppuration have become rare; and when the occasional case is encountered, usually from an acute exacerbation of a chronic suppuration, the chances of a cure are excellent. This is in sharp contrast to my personal experience with the complications seen when I was a resident in training 25 years ago. At that time phlebitis and thrombosis of the lateral sinus, a common complication of acute mastoiditis, carried a 25 per cent mortality.³ Meningitis was invariably fatal, and brain abscess carried a very high mortality.

Chronic middle ear disease is still very common because of these facts:

1. There are many adults who were afflicted with measles or scarlet fever, or other severe illnesses involving the upper respiratory tract prior to the sulfonamide-antibiotic era and who suffered severe necrosis of their middle ear structures which did not heal spontaneously. In some such instances there subsequently developed an ingrowth of epithelium into the middle ear to produce an cholesteatoma.⁴

2. Poor or absent pneumatization of the temporal bone favors chronicity when an acute inflammation of the middle ear occurs. Studies have indicated that approximately 14 per cent of the population possess this poor or absent pneumatization from hereditary factors or infection in infancy or early childhood.⁵

3. The common practice today of treating acute otitis media with an antibiotic without consideration for drainage seems to be an important factor in the development of certain types of chronic middle ear disease, particularly attic disease.

The use of sulfonamides or antibiotics parenterally or locally has little effect on chronic middle ear suppuration. Acute exacerbations of chronic infections of the mucoperiosteal lining of the middle ear and mastoid may be improved temporarily by the use of these agents. The underlying disease is not eliminated, however, probably because the blood supply to the site of the chronic infection is limited through

fibrosis and the detritus that accumulates in chronic disease.

The surgical management of chronic middle ear disease has undergone almost revolutionary changes in recent years. This has been due largely to the original contributions of Lempert who attracted the otological world to his endaural approach to the temporal bone in 1938 when he introduced a successful fenestration operation for otosclerosis.⁶

This approach with its simplified access to the epitympanic space and the facility with which plastic flaps can be constructed provided a new perspective for students of otology. Aided with magnification from binocular loupes and the microscope, the otologist surgeon has developed techniques that promise a high degree of success in attacking chronic suppuration of the temporal bone in its numerous variations.

HEARING LOSS

In spite of the change that has occurred in the incidence of acute suppurations of the middle ear, hearing loss in its total incidence has seemingly not decreased. When drainage of acute middle ear suppuration was common, most of those afflicted recovered normal hearing in the case of ordinary suppurative otitis media even when complications occurred, if the latter were successfully treated.

Conduction Hearing Loss

The two major problems today in conduction hearing loss are those connected with acute or chronic middle ear disease and clinical otosclerosis.

Middle ear exudates and transudates

There seems to have been a sharp increase in recent years in the number of patients, predominantly children, who suffer a moderate hearing loss due to the presence of a sterile exudate or transudate in the middle ear. An exudate occurs there as a result of an inflammatory process

reaching the middle ear through the tube. In the days before sulfonamide or antibiotic therapy, a virulent infection reaching the middle ear usually took care of its own drainage through spontaneous rupture of the ear drum or was drained surgically by the simple procedure of myringotomy. Today, one afflicted with acute otitis media more often than not receives antibiotic therapy and no consideration of the value of drainage. The middle ear exudate becomes sterile and in some instance is neither absorbed nor drained, leaving a residuum in the middle ear space and sometimes is connecting cavities - the cells of the mastoid and petrosa. From this residue, chronic changes in the mucoperiosteum lining the cells may occur, which we suspect in time become irreversible causing adhesive processes and possibly undergo metaplastic changes.

Simple transudates occur from the mechanical effects of Eustachian tube blockage resulting from limited inflammation at the pharyngeal end of the tube, allergic swelling, and sudden changes of atmospheric pressure as in air flight. What may start out as a simple transudate obviously can end with the exudation of mucus into the fluid accumulation in the middle ear.

Relief and prompt restoration of hearing function follows the aspiration of these exudates or transudates from the middle ear space. Exudates are usually thick with a heavy mucoid content, and myringotomy and aspiration with a special suction cannula is necessary. Some prefer to remove transudates by needle puncture.

Permanent relief from recurrences may require a consideration of such etiologic factors as chronic tonsil and adenoid disease, chronic disease in the nasal space, and allergic phenomena in the upper respiratory tract.

A few years ago irradiation of nasopharyngeal lymphoid tissue adjacent to the pharyngeal end of the Eustachian

tube, with the use of a radium applicator, was widely advocated for treating acquired hearing loss in children resulting from the type of disorder dependent on mal-functioning of the Eustachian tube. As so often happens with a new therapy, the use of radium in the nasopharynx was overdone and all types of hearing loss have been subjected to nasopharyngeal irradiation by careless observers. Today, critical students of otology believe that there is a very limited place for irradiation of nasopharyngeal lymphoid tissue. More important are skillful surgical removal of abnormal lymphoid tissue and consideration and adequate management of possible allergic factors.

Otosclerosis

Otosclerosis is a osteodystrophy originating in the bony capsule surrounding the membranous labyrinth. It is similar but not identical with Recklinghausen's and Paget's diseases. The etiology is unknown. One of the most recent theories is that advanced by Lempert and Wolff⁷ who believe that it is related to an inadequate terminal blood supply to portions of the labyrinthine capsule and that this inadequacy is familial.

Otosclerosis apparently occurs in all civilized races but is less common in the negro than in the white race. It is more common in the female. It may exist as a silent lesion found only in a microscopic study of a temporal bone. Therefore, we speak of "histologic otosclerosis" and "clinical otosclerosis."

Modern otologists believe that any deafness of a conduction type that is progressive and not accounted for by evidence of middle ear disease is caused by an otosclerotic lesion interfering with the movement of the footplate of the stapes. The principal symptom, which is the hearing loss, begins insidiously usually in young adult life. Instances of clinical otosclerosis have been seen in children (our youngest

patient, proved at surgery, was 11 years of age) and the disorder does become manifest as late as the fifth and sixth decades.

A majority of patients with clinical otosclerosis complain of tinnitus, and about half of them give a history of familial deafness.

In a small percent, the manifestation is unilateral. The rate of progression varies a great deal, and in a small number the defect remains stationary.

The fenestration operation is the only treatment that will restore practical hearing to a patient with otosclerosis suitable for this form of treatment. In this operation a window is made with a dental polishing burr in the ampullated end of the lateral semi-circular canal to expose the membranous labyrinth. A plastic flap from the membranous posterior canal wall continuous through Shrapnel's membrane with the ear drum is laid over this newly created window. An attempt is made to invaginate a thin portion of the flap into the window. The middle ear space is sealed off when this flap is properly placed. This is facilitated by a removal of the incus and amputation of the head of the malleus.

The creation of this window offers a bypass for air conducted sound the impulse of which had been excluded from reaching the inner ear because the stapes was fixed by the disease at the margin of the oval window.

Failures to produce a successful restoration of practical hearing have been due to:

1. Closure of the fenestra through osteogenesis.
2. Labyrinthitis following the surgery and
3. Selection of cases that are not suitable for this procedure.

With improvements in technique, osteogenesis and postoperative labyrinthitis have practically been eliminated. Experience has established the

criteria for the ideal cases. An ideal case is a patient with air conduction impairment at or near the 50 decibel line through the speech frequencies of 500, 1000 and 2000 cycles, normal bone conduction, a healthy ear drum, and a normal external canal and one whose age is between approximately 20 and 40 years, but preferably in the younger end of this age span. Occasionally patients younger than 20 years are encountered (mention was previously made of our experience with an 11 year old), and many are operated on who are older than 40. Some of these present all of the criteria for an ideal case but many show some beginning nerve impairment and therefore cannot be expected to get as good a result as one with no nerve impairment. Our oldest patient was 60 years of age when she was operated upon. She was "physiologically" younger than her years and had excellent bone conduction and no evidence of presbycusis. An excellent improvement was obtained and the patient was happy to avoid a hearing aid for the present. She was promised that her improved hearing could only be expected to last until age changes became a factor.

Our first successful fenestration operations were done more than 9 years ago. More than 400 fenestrations have been performed since then. At the present time in the ideal case, with sound surgical technique, I would prophesy a 90 per cent chance of the permanent restoration of practical hearing in the ear operated upon.

Surgical therapy for otosclerosis is not new. An opening in the bony capsule of the labyrinth to allow sound waves to bypass the fixed stapes and reach the membranous labyrinth was tried by Passow in 1896. Other attempts were made by Jenkins in 1912, Holmgren in 1916 and Barany in 1924. Failure was due to postoperative infection of the labyrinth or closure of the opening from osteogenesis. In 1937 Sourdille reported some success with a two stage operation.

In 1938 Lempert⁸ offered a one stage operation performed through an endaural

approach. The most important contribution in his new technique was the creation of a tympanomeatal flap which is placed over the fenestra. Refinements of technique followed. Others have modified some of the procedures, but to Lempert must go the credit for all of the basic improvements that have made the operation a highly successful one in suitable cases.

The most important improvements contributed by Lempert over his original technique have been the making of the window in the bony ampulla of the horizontal semicircular canal, his invagination of the flap into the fenestra and the creation of the fenestra by removing a cupula of bone.⁹

Perception Hearing Loss (nerve deafness).

In most instances of injury to the neural elements concerned with hearing, the impairment is permanent. Perception (nerve) type of hearing impairment may occur from a toxic neuritis of the acoustic branch of the auditory nerve, from trauma in the form of noise or concussive blasts, as well as concussion or fractures of the skull, from the effect of certain drugs and poisons and from any type of meningitis. Also, perception deafness occurs normally to a varying degree as an aging process beyond the 5th decade of life. This is known as presbycusis. It may occur in a more marked degree in the presence of cerebral arteriosclerosis. Neural damage occurs in an advanced stage of endolymphatic hydrops. Miscellaneous causes of nerve deafness include tumors involving the 8th nerve, otosclerotic foci involving neural elements within the bony labyrinth, and multiple sclerosis. Severe forms of neural damage causing congenital absence of useful hearing or complete deafness may occur in utero, from damage at birth, or in the immediate postnatal period from anemias, particularly when associated with kernicterus.

Obviously, the only treatment for nerve deafness lies in prevention. The

scope of this presentation will not allow a detailed consideration of these possibilities but one example of a modern attack is concerned with the problem of trauma in the form of industrial noise. It has long been known that continuous exposure to noise of a certain intensity will produce permanent hearing loss of varying degree. An old example of this is "boilermaker's deafness." Mechanization of the modern age has produced innumerable situations in which the human acoustic mechanism can suffer from the effects of exposure to noise. An example of severe exposure can be found in the airplane industry associated with the noise from jet engines. A much more familiar circumstance is the farmer riding in the seat of a tractor. Documented studies have shown that tractor noise can be the cause of a nerve type of loss.

A Wisconsin Supreme Court decision in 1953 in favor of a plaintiff seeking compensation for hearing loss from industrial noise stimulated some insurance carriers to support extensive research that is now being carried on by the Committee on Conservation of Hearing of the American Academy of Ophthalmology and Otolaryngology.

This research in addition to its motive of prevention should answer the following questions:

1. What is a damaging noise level?
2. How long must an individual be exposed to this noise to acquire permanent damage?
3. Is one with a pre-employment level of impaired hearing more vulnerable to hearing loss from noise?
4. Is there more vulnerability to hearing loss from noise in the age group of presbycusis?

In addition, research is being carried on in the matter of the construction and effectiveness of defenders (ear plugs) to screen out noises. Putting cotton in an ear offers no protection.

REHABILITATION OF THE DEAF WHO CANNOT BE

HELPED BY MEDICAL AND SURGICAL MEANS

The subject of rehabilitation of those with a handicapping loss who cannot be helped by medical or surgical means was presented at one of these staff meetings in 1953, by Dr. Frank Lassman under the title of "Audiology."¹⁰ The importance of this activity is apparent when it is realized that surveys have shown that two per cent of a population have a handicapping hearing loss. That means that in the state of Minnesota there are over 60,000 individuals with this handicap.

The Committee on Conservation of Hearing of the Minnesota State Medical Association has been active in surveys to register those with a handicapping loss. The state has been divided into 8 districts according to concentration of population and an otologist member of this Committee has been enlisting the aid of local public school nurses, school physicians, and other physicians to accomplish this registration. The otologist who supervises the survey in a particular district also acts as an advisor to the general physician who seeks his counsel on the matter of rehabilitation of his deafened patients. In recent weeks mimeographed information has been mailed from Association headquarters to all members of the State Medical Association supplying factual information on what can be done for the hearing handicapped.

VESTIBULAR DYSFUNCTION

The symptom of vertigo is very common. In its most severe form of modern occurrence this symptom is usually part of a triad of symptoms, the other two of which are tinnitus and hearing loss. This constitutes a clinical entity first described in 1861 by Meniere. The modern belief is that the course of this disorder is a hydrops of the endolymphatic system of the inner ear. Meniere's original description still stands as a classic and it is difficult to improve on it.

The diagnosis of "pseudo-Meniere's disease" should be abandoned. It only confuses the thinking in regard to vertigo as a symptom. The diagnosis of Meniere's disease can only be made when all three of the symptoms occur. Vertigo should be designated by that name alone when it is a single symptom and an attempt should be made to explain its occurrence. When vertigo occurs the patient usually experiences a sensation of objects turning about him or that he is turning in relation to objects. In limited form this movement may only be a latero-pulsion.

The sensations of lightheadedness or faintness should not be called vertigo. The occurrence of the latter are often included by the patient under a complaint of "dizziness." As commonly used, the term dizziness applies to both vertiginous experiences, and lightheadedness and faintness, which means that all patients who complain of dizziness do not have vestibular dysfunction in the form of vertigo.

Endolymphatic hydrops may occur without vertigo. This is comparatively uncommon. In this occurrence it is apparently limited to the cochlea. The symptoms are hearing loss and tinnitus, both of which fluctuate in intensity. The onset is usually sudden. The hearing curve for air conduction shows a relatively good preservation of high tones.

Vertigo is usually present with endolymphatic hydrops and is characterized by sudden spasmodic attacks. Nausea and sometimes vomiting often occur with the severe forms.

The etiology of endolymphatic hydrops is now considered by many to be an expression of a physical allergy based on autonomic dysfunction. The contributions of Hilger¹¹ of our faculty and Williams¹² of the graduate faculty at the Mayo Clinic have influenced the thinking in this regard. Lempert and Wolff¹³ and their associates believe that it is due to a

herpetic neuritis involving the vestibular nerve causing vesiculation in the lining of the endolymphatic lumen, and that rupture of these vesicles causes the hydrops.

In some patients the disease undoubtedly resolves spontaneously. The medical treatment at present includes a low sodium diet, the use of vasodilating agents, diuresis with ammonium chloride and in some instances the use of autonomic blocking agents.

Fortunately, the involvement is usually unilateral. In severe instances, uncontrolled by medical therapy and in which the patient is incapacitated by the disease, a labyrinthotomy with destruction of the membranous labyrinth will invariably effect a cure. The hearing is usually lost completely in the ear operated upon but rarely is the operation indicated when the disease has not progressed to a state in which there is not a profound hearing loss.

This operation is comparatively simple, carries little morbidity and has apparently replaced the intracranial operation for sectioning the 8th nerve. We have now performed it in more than 30 patients with satisfactory results.¹⁴

Vertigo as a single inner ear symptom is a common complaint. In a majority of cases it is not a serious symptom. The cause may be located far from the end-organ or central nervous system. Simple transient vertiginous experiences are probably on a vasomotor basis. These are rather common in the asthenic hypotensive who fatigues easily. Anemia, cerebral anoxia as may occur in severe cardiac states, vasomotor changes related to psychosomatic disturbances, hypothyroidism, hypoglycemia, and cerebral arteriosclerosis have all been linked to this symptom as an etiologic explanation when it occurs alone.¹⁵ Paroxysmal attacks of vertigo in the absence of tinnitus or deafness or any obvious ear disease may be neurogenic in origin from some toxic

cause such as drug sensitivity, syphilis, multiple sclerosis, etc. This emphasizes the importance of a thorough general medical study in addition to a complete otologic examination and neurologic consultation when indicated, in that there is the possibility of an early diagnosis of serious lesions.

TINNITUS

This is a common symptom found in many conditions but is most often associated with a disorder in the ear. The only cause that is amenable to a considerable success in treatment is some form of middle ear disorder. It is often present with exudates in the middle ear and is relieved when the middle ear function returns to normal. It is usually present with otosclerosis and is relieved as a rule with successful fenestration surgery. It is often part of the symptomatology of neurovascular phenomena affecting the inner ear and if these are acute and respond to modern therapy, relief can be expected.

At a staff meeting in 1946, we reported a limited experience with 10 patients with tinnitus who had been subjected to a tympanosympathectomy according to the method of Lempert. Three obtained relief. These had had chronic hyperplastic changes in the mucoperiosteum of the middle ear. We now believe that it is only patients of this type that will respond to this surgery and that it is ineffective when the etiology of the tinnitus is from some other source.

The onset of tinnitus justifies a thorough otologic examination. This may reveal degenerative change in the ear in the form of early middle ear or inner ear deafness. In the absence of middle ear disease, a thorough general physical study is indicated inasmuch as tinnitus may be the first warning of degenerative arteriosclerotic change.

EXTERNAL EAR DISEASE

A majority of the diseases of the external ear and auditory canal are within the special province of the dermatologist as much as of the otologist. Conditions limited to the external canal are usually encountered first by the otologist. His familiarity with the diagnosis of possibly associated disease such as might be present in the middle ear in some conditions involving the deeper parts of the external canal places him in a position of advantage to care for certain of these conditions.

The recent contributions of Senturia¹⁶ have clarified our knowledge of the difficult problems of external otitis and with the advantage of modern drugs most of these annoying and painful problems of the external auditory canal are responding rapidly to modern treatment.

DEVELOPMENTAL ANOMALIES OF THE SOUND CONDUCTING APPARATUS

The modern operations to improve hearing in congenital atresia of the external auditory canal as proposed by Pattee,¹⁷ Shambaugh¹⁸ and others are successful in the improvement of hearing in children with this affliction when it is a cause of their deafness. These operations are principally indicated when the disorder is bilateral.

BELL'S PALSY

This subject was presented by Dr. Jerome Hilger¹⁹ at a staff meeting in 1949. At that time he proposed that this disorder, as we ordinarily encounter it, is due to an ischemic neuritis resulting from segmental arteriolar spasm and he urged that early emergency medical therapy should be directed toward the relief of vasospasm and that surgical decompression should be instituted with the first sign of axon necrosis. To date we have not had a series of cases large enough to justify reporting, but the impres-

sion is general among otologists that early emergency medical therapy has reduced the number requiring surgical decompression, and that the latter further reduces the number destined to permanent paralysis.

HEMIFACIAL SPASM

Decompression of the descending portion of the facial nerve in the mastoid was proposed by Woltman and Williams in 1951 for the relief of hemifacial spasm.²⁰ A second report in 1952 covered 8 cases.²¹ In six of these patients the portion of the nerve decompressed had abnormal findings in the form of a roughening or thickening of the sheath, and in one a fibrous nodule was attached to the inner sheath. Most patients reported considerable relief from the procedure although the spasm did tend to recur.

We have decompressed the facial nerve for spasm in 3 patients in this hospital. In two, the sheath seemed thicker than normal. The first had considerable improvement, the second one was only improved temporarily and the third one has now gone over a year without recurrence.

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II. MEDICAL SCHOOL NEWS

Coming Events

December 2 - 4 Continuation Course in Obstetrics for Specialists
December 2 Special Lecture; Sir Lionel Witby, Regius Professor of Physic,
Cambridge University; Mayo Auditorium; 4:30 p.m.

* * *

Meeting of Minnesota Medical Foundation Board of Trustees

The Board of Trustees of the Minnesota Medical Foundation met on Wednesday, November 17, at 6:00 p.m. in the Jade Room of the Leamington Hotel. Those present included Dean Diehl, Mr. M. E. Herz, Mr. Gerald T. Mullin, and Doctors J. R. Aurelius, Moses Barron, Charles Rea, Leo G. Rigler, Charles Sheppard, R. S. Ylvisaker, Francis Lynch, Wesley W. Spink, Erling S. Platou, William F. Maloney, and Robert B. Howard.

Election of officers was held with the following results: President - Dr. Wesley W. Spink; Vice-President - Dr. R. S. Ylvisaker; Secretary-Treasurer - Dr. Robert B. Howard. They will serve two-year terms, succeeding Doctors O. H. Wangenstein, Francis Lynch, and Wesley W. Spink, respectively.

The financial report was given by Dr. Spink, retiring Secretary-Treasurer. The Board took note of the recent publication of the Minnesota Medical Alumni Directory and voted approval of the expenditure of funds to aid the Medical Alumni Association in mailing out the directories and in keeping the alumni files up to date. The Board also approved a contribution of \$250.00 to the National Society for Medical Research.

Mr. Herz announced that for the second successive year Lancet Publications, Inc. has made a \$3,000 contribution to the Minnesota Medical Foundation. The Trustees gratefully acknowledged this most generous gift.

Dean Diehl reported briefly on the status of the request for a Medical Library, following which the meeting adjourned.

* * *

Faculty News

Fall has been a busy time this year for members of the staff of the Department of Physical Medicine and Rehabilitation. Dr. F. J. Kottke, Professor and Head, attended the American Congress of Physical Medicine and Rehabilitation in Washington, D. C. last September 4 to 11. Dr. W. G. Kubicek, Miss Mildred Olson, and Miss Helen Hislop attended the American Physiological Association Convention in Madison, Wisconsin. Washington D. C. was also the site of the Occupational Therapy Association Convention on October 11 to 22 which Miss Borghild Hansen, Mrs. Winifred Johnson, and Mr. Marvin Lepley attended. The Rehabilitation Team of the U. S. Public Health Service met in New York City on November 11 to 15. Dr. F. J. Kottke, Dr. Frank Lassman, Miss Borghild Hansen, Mrs. Ruby Overmann, Miss Claire Censky, and Mr. Robert Walker attended this meeting. Recent guests of the Department include Doctors Frank H. Krusen, Professor and Head of the Section of Physical Medicine and Rehabilitation, Mayo Clinic, Rochester; and James Perkins, Director, National Tuberculosis Association; and Miss Mary Switzer, Rehabilitation Office of the National Department of Health, Education and Welfare, U. S. Public Health Service, Washington, D. C.; and Miss Mary Haskell, Associate Executive Director, American Physical Therapy Association, New York City. Congratulations are in order for Mrs. Ruby Overmann who has been promoted to Assistant Professor and Director of the Course in Physical Therapy and to Miss Borghild Hansen who has been promoted to Assistant Professor and Director of the Course in Occupational Therapy.

III.

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL
WEEKLY CALENDAR OF EVENTS

Physicians Welcome

November 29 - December 4

Monday, November 29

Medical School and University Hospitals

- 9:00 - 9:50 Roentgenology-Medicine Conference; L. G. Rigler, C. J. Watson and Staff; Todd Amphitheater, U. H.
- 9:00 - 10:50 Obstetrics and Gynecology Conference; J. L. McKelvey and Staff; W-612, U. H.
- 10:00 - 12:00 Neurology Rounds; A. B. Baker and Staff; Station 50, U. H.
- 11:30 - Tumor Conference; Doctors Hitchcock, Zimmermann, and Stenstrom; Todd Amphitheater, U. H.
- 12:15 - Obstetrics and Gynecology Journal Club; Staff Dining Room, U. H.
- 12:30 - 1:30 Physiology Seminar; The Rate of Absorption of Water from the Stomach and small bowel in Humans; Charles F. Code; 214 Millard Hall.
- 1:30 - 2:30 Pediatric-Neurological Rounds; R. Jensen, A. B. Baker and Staff; U. H.
- 1:30 - 3:30 Dermatology Hospital Rounds; H. E. Michelson and Staff; Dermatology-Histopathology Room, M-434, U. H.
- 4:00 - 6:00 Anesthesiology Conference; F. H. Van Bergen and Staff; Room 100, Mayo Memorial.
- 4:30 - Pediatric-Medicine Infectious Disease Rounds; Station 33, U. H.
- 5:00 - 6:00 Physiology-Surgery Conference; Todd Amphitheater, U. H.
- 5:00 - 6:00 Urology-Roentgenology Conference; C. D. Creevy, O. J. Baggenstoss and Staff; Eustis Amphitheater.

Ancker Hospital

- 8:00 - 9:00 Pediatrics Contagion Rounds; L. R. Critchfield; Contagion 5.
- 8:30 - 10:30 Medical and Surgical Chest Conference; Dr. Gehlen and Staff; Auditorium.
- 10:00 - 12:00 Surgery Grand Ward Rounds; Begin Floor E4.
- 11:00 - 12:00 Medicine Resident Rounds.
- 11:00 - 12:00 Pediatric Rounds; Harry Orme; Contagion 1.
- 12:30 - 2:30 Surgery Out-Patient Clinic; Room 8.
- 2:00 - 3:00 Routine EKG Interpretation; Dr. Sommers and House Staff; Medical Record Library.
- 2:30 - 3:00 Discussion of Problem Case; Auditorium.
- 3:00 - 4:00 Surgery Journal Club; Classroom.
- 3:00 - 4:00 Lectures on Electrocardiography; Ben Sommers; Auditorium.

Monday, November 29 (Cont.)

Minneapolis General Hospital

- 9:30 - Pediatric Rounds; Richard Raile; Station K.
- 10:30 - 12:00 Medicine Rounds; Thomas Lowry; Station F.
- 11:00 - Orthopedic and Fracture Rounds; Drs. John Moe and Arthur Zierold; Station B.
- 11:00 - Pediatric Seminar; Erling Platou; Classroom, Station M.
- 12:30 - Surgery Grand Rounds; Dr. Zierold, Station E.
- 1:30 - 2:30 Tuberculosis Conference; J. A. Myers; Station M.
- 2:00 - Pediatric Rounds; Stations I and J.

Veterans Administration Hospital

- 9:30 - Infectious Disease Rounds; Drs. Hall, Zinnemann, and Middlebrook.
- 1:30 - Cardiac Conference; Drs. Smith, Berman, Hoseth, Simonson, Swerdlow, Shapiro, and J. Brown; Conference Room, Bldg. I.; Rounds immediately following conference.

Tuesday, November 30

Medical School and University Hospitals

- 9:00 - 9:50 Roentgenology-Pediatric Conference; L. G. Rigler, Irvine McQuarrie and Staffs; Eustis Amphitheater, U. H.
- 12:30 - 1:20 Pathology Conference; Autopsies; J. R. Dawson and Staff; 104 Jackson Hall.
- 12:30 - Physiology Seminar: Transport; Nathan Lifson; 129 Millard Hall.
- 12:30 - Bacteriology and Immunology Seminar; The Endospore; Josephine Smith; 1050 Mayo Memorial.
- 12:30 - Anatomy Seminar; Structure of Anterior Pituitary Gland as Revealed by Electron Microscopy; Marilyn G. Farquhar; 226 Jackson Hall.
- 3:30 - General Physiology Seminar; 323 Zoology Building.
- 3:30 - Pediatric Seminar; Anomalous Pulmonary Venous Return; Walter Wilder; 1450 Mayo Memorial.
- 4:00 - 5:00 Pediatric Rounds on Wards; Irvine McQuarrie and Staff; U. H.
- 4:30 - 5:30 Clinical-Medical-Pathological Conference; Todd Amphitheater, U. H.
- 5:00 - 6:00 X-ray Conference; Presentation of Cases from Northwestern Hospital; Drs. C. O. Hansen, Baggenstoss, and Frank Anderson; Eustis Amphitheater, U. H.

Ancker Hospital

- 8:00 - 9:00 Pediatric Rounds; Edward Strem; Contagion 1.
- 8:00 - 10:00 Visiting Staff Rounds.

Tuesday, November 30 (Cont.)

Ancker Hospital (Cont.)

- 9:00 - 12:00 Practical Diagnostic Clinic; Harry Orme; Out-Patient Department.
11:00 - 12:00 Medical X-ray Conference; Auditorium.
4:00 - 5:00 Medical-Pathological Conference; W. F. Mazzitello; Auditorium.

Minneapolis General Hospital

- 9:30 - Pediatric Rounds; Elizabeth Lowry; Station J.
10:00 - Psychiatry Grand Rounds; R. W. Anderson, Station H.
11:00 - 12:00 Medicine-Surgery Conference; Classroom, Station M.
12:30 - 2:30 Dermatology Rounds on Clinic; Carl W. Laymon and Staff.
12:30 - ECG Conference; Boyd Thomes and Staff; 302 Harrington Hall.
1:00 - Tumor Clinic; Drs. Eder, Coe, and Lipschultz; Classroom.
3:30 - Pediatric-Psychiatry Rounds; Jack Wallinga; Station I.

Veterans Administration Hospital

- 7:30 - Anesthesiology Conference; Surgical Conference Room, Bldg. 43.
8:30 - Hematology Rounds; Drs. Hagen and Wexler.
8:30 - Surgery Journal Club; Conference Room, Bldg. I.
9:30 - Surgery-Pathology Conference; Conference Room, Bldg. I.
10:30 - Surgery-Tumor Conference; D. Ferguson and J. Jorgens.
1:00 - Review of Non-TBC Chest Pathology Conference; E. T. Bell; Conference Room, Bldg. I.
2:00 - Combined Medical-Surgical Chest Conference; Conference Room, Bldg. I.
2:00 - 2:50 Dermatology and Syphilology Conference; H. E. Michelson and Staff; Bldg. III.
4:00 - Thoracic Surgery Problems; Conference Room, Bldg. I.
5:00 - Fluid Balance Conference; Conference Room, Bldg. I.
5:30 - Physiology Seminar; Surgical Conference Room, Bldg. 43.

Wednesday, December 1

Medical School and University Hospitals

- 8:00 - 9:00 Roentgenology-Surgical-Pathological Conference; Paul Lober and L. G. Rigler, Todd Amphitheater, U. H.
11:00 - 12:00 Pathology-Medicine-Surgery-Pediatrics Conference; Todd Amphitheater, U. H.
12:30 - 1:20 Radio-Isotope Seminar; W. N. Sheldon; Betatron Room in Cobalt Underground Section.
1:00 - 2:00 Dermatology Clinical Seminar; F. W. Lynch; 300 North Clinic.

Wednesday, December 1 (Cont.)

Medical School and University Hospitals (Cont.)

- 1:30 - 3:00 Pediatric Allergy Clinic; Albert V. Stoesser and Lloyd Nelson; W-211, U. H.
- 3:30 - 4:30 Dermatology-Pharmacology Seminar; 3rd Floor Conference Room, Heart Hospital.
- 4:30 - 5:50 Dermatology-Infectious Disease Seminar; 3rd Floor, Conference Room, Heart Hospital.
- *4:30 - Public Health Seminar; "Public Health Aspects of the Zoonoses;" Dr. Martin Kaplan, Chief Veterinary Officer, World Health Organization, Geneva, Switzerland; 15 Owre Hall.
- 5:00 - 6:00 Residents Lectures; Training of Radiology Residents--Michigan vs. Minnesota; Alexander Margulis; Todd Amphitheater, U. H.
- 5:00 - 5:50 Urology-Pathological Conference; C. D. Creevy and Staff; Eustis Amphitheater, U. H.
- 5:30 - 7:30 Dermatology Journal Club and Discussion Group; Hospital Dining Room.
- 7:30 - 9:30 Dermatology Seminar; Review of Interesting Slides of the Week; Robert W. Goltz; Todd Amphitheater, U. H.

Ancker Hospital

- 8:30 - 9:30 Clinico-Pathological Conference; J. Noble; Auditorium.
- 9:00 - 10:00 Contagion Rounds; L. R. Critchfield; Contagion 5.
- 11:00 - 12:00 Medicine Resident Rounds.
- 1:30 - 2:30 Pediatric Rounds; Ray Anderson; Contagion 1.
- 3:00 - 5:00 Infectious Disease Rounds; Wesley W. Spink; Auditorium.

Minneapolis General Hospital

- 9:30 - Pediatric Rounds; Henry Staub; Station I.
- 10:30 - 12:00 Medicine Rounds; Thomas Lowry and Staff; Station D.
- 12:00 - Surgery Seminar; Arthur Zierold; Classroom.
- 12:15 - Pediatrics Staff Meeting; Classroom, Station I.
- 1:30 - Pediatric House Staff Seminar; Erling Platou; Station I.
- 1:30 - Pediatric Rounds; Erling Platou; Classroom, Station I.

Veterans Administration Hospital

- 8:30 - 10:00 Orthopedic X-ray Conference; E. F. Evans and Staff; Surgical Conference Room, Bldg. 43.
- 8:30 - 12:00 Neurology Rehabilitation and Case Conference; A. B. Baker.
- 9:00 - Gastro-Intestinal Rounds; Drs. Wilson, Zieve, Ferguson, Brakel, Konig and Swenson.
- 10:30 - Psychosomatic Conference; C. K. Aldrich; 7th Floor, Bldg. 43.

Wednesday, December 1 (Cont.)

Veterans Administration Hospital (Cont.)

- 12:30 - Medical Journal Club; Doctors' Dining Room.
12:30 - X-ray Conference; J. Jorgens; Conference Room, Bldg. I.
1:30 - 3:00 Metabolic Disease Conference; Drs. Flink and Latts.
3:30 - Urology Pathology Slide Conference; Dr. Gleason; Conference Room, Bldg. I.
7:00 - Lectures in Basic Science of Orthopedics; Conference Room, Bldg. I.

Thursday, December 2

Medical School and University Hospitals

- 9:00 - 11:50 Medicine Ward Rounds; C. J. Watson and Staff; Room 3.148; Mayo Memorial.
11:00 - 12:00 Cancer Clinic; K. Stenstrom, A. Kremen, and B. Zimmermann; Todd Amphitheater, U. H.
12:30 - Physiological Chemistry Seminar; DNA in the Transformation of Pneumococcal Types; Malcolm Steinberg; 214 Millard Hall.
12:30 - 1:30 Endocrine Seminar; Hyperglycemic Factor; Bernard Zimmermann; 271 Lyon Laboratories.
1:30 - 4:00 Cardiology X-ray Conference; Heart Hospital Theatre.
4:00 - 5:00 Anesthesiology Seminar; F. H. Van Bergen and Staff; Room 100, Mayo Memorial.
*4:30 - Public Health Seminar; "Concepts of Administration in an Agency Providing Multiple Professional Services;" Ruth Freeman, Associate Professor of Public Health Administration, Johns Hopkins University; 15 Owre Hall.
*4:30 - Special Lecture; Sir Lionel Witby, Regius Professor of Physic, Cambridge University; Mayo Auditorium.
5:00 - 6:00 Radiology Seminar; Preliminary Evaluation of Cobalt Beam Therapy in: Carcinoma of the Lung -- Robert Kasper; Carcinoma of the Esophagus -- John R. Amberg; Eustis Amphitheater, U. H.
7:30 - 9:30 Physiology 114A Seminar; Hemodynamic Problems; M. B. Visscher and Robert Evans; 271 Lyon Laboratories.

Ancker Hospital

- 8:30 - 9:30 Medical Grand Rounds; Auditorium; Visiting Staff Rounds immediately following Grand Rounds.
11:00 - 12:00 Medicine Resident Rounds.
2:00 - 3:00 Routine ECG Interpretation; Ben Sommers; Medical Record Library.

Minneapolis General Hospital

- 9:30 - Neurology Rounds; Heinz Bruhl; Station I.
9:30 - Pediatric Contagion Rounds; R. B. Raile; Station K.

Thursday, December 2 (Cont.)

Minneapolis General Hospital (Cont.)

- 10:00 - Psychiatry Grand Rounds; R. W. Anderson and Staff; Station H.
- 11:30 - 12:30 Clinical Pathological Conference; John I. Coe; Classroom.
- 12:30 - 2:30 Dermatology Rounds and Clinic; Carl W. Laymon and Staff.
- 1:00 - Fracture X-ray Conference; Drs. Zierold and Moe; Classroom.
- 1:00 - House Staff Conference; Station I.

Veterans Administration Hospital

- 8:00 - Experimental Surgery Laboratory Meeting; Conference Room, Bldg. I.
- 8:30 - Hematology Rounds; Drs. Hagen and Williams.
- 9:00 - Surgery Grand Rounds; Conference Room, Bldg. I.
- 9:00 - Surgery Ward Rounds; D. Ferguson and Staff; Ward 11.
- 11:00 - Surgery-Roentgen Conference; J. Jorgens; Conference Room; Bldg. I.
- 1:00 - Infectious Disease Conference; Wesley W. Spink; Conference Room, Bldg. I. (Rounds immediately following conference.)
- 4:00 - 5:00 Medical-Surgical Conference; Conference Room, Bldg. I.

Friday, December 3

Medical School and University Hospitals

- 8:00 - 10:00 Neurology Grand Rounds; A. B. Baker and Staff; Station 50, U. H.
- 9:00 - 9:50 Medicine Grand Rounds; C. J. Watson and Staff; Todd Amphitheater, U.H.
- 10:30 - 11:50 Medicine Rounds; C. J. Watson and Staff; Todd Amphitheater, U. H.
- 10:30 - 1:50 Otolaryngology Case Studies; L. R. Boies and Staff; Out-Patient Department, U. H.
- 11:00 - 12:00 Vascular Rounds; Davitt Felder and Staff Members from the Departments of Medicine, Surgery, Physical Medicine, and Dermatology; Eustis Amphitheater, U. H.
- 11:45 - 12:50 University of Minnesota Hospitals Medical Staff Meeting; Psychiatric Aspects of Obstetrics and Gynecology; Irving C. Bernstein; Powell Hall Amphitheater.
- 1:00 - 2:50 Neurosurgery-Roentgenology Conference; W. T. Peyton, Harold O. Peterson and Staff; Todd Amphitheater, U. H.
- 1:30 - 2:30 Dermatology Grand Rounds; Presentation of Cases from Grouped Hospitals (University, Ancker, General and Veterans) and Private Offices; H. E. Michelson and Staff; Eustis Amphitheater, U. H.
- 2:30 - 4:00 Dermatology Hospital Rounds; H. E. Michelson and Staff; Begin at Dermatological Histopathology Room, M-434, U. H.
- 3:00 - 4:00 Neuropathological Conference; F. Tichy; Todd Amphitheater, U. H.

Friday, December 3 (Cont.)

Medical School and University Hospitals (Cont.)

- 3:30 - 4:30 Dermatology-Physiology Seminar; 3rd Floor Conference Room, Heart Hospital.
4:30 - 5:20 Ophthalmology Ward Rounds; Erling W. Hanson and Staff; E-534; U. H.
5:00 - Urology Seminar and X-ray Conference; Eustis Amphitheater, U. H.

Ancker Hospital

- 8:00 - 9:00 Pediatric Rounds; Edward Strem; Contagion 1.
11:00 - 12:00 Contagion Rounds; Harry Orme; Contagion 5.
3:00 - 4:00 Medical-Surgical-Pathological Conference; Auditorium.
4:00 - 5:00 Medical Journal Club; Conference Room, E5.
4:00 - 5:00 X-ray Surgery Conference; Auditorium.

Minneapolis General Hospital

- 9:30 - Pediatric Rounds; Elizabeth Lowry; Station J.
10:30 - Pediatric Surgical Conference; Tague Chisholm and B. Spencer; Classroom, Station I.
12:00 - Surgery-Pathology Conference; Drs. Zierold and Coe; Classroom.
1:00 - 3:00 Clinical-Medical Conference; Thomas Lowry; Classroom, Station M.
1:30 - Pediatric Contagion Rounds; L. Wannamaker; Station K.

Veterans Administration Hospital

- 10:30 - 11:20 Medicine Grand Rounds; Conference Room, Bldg. I.
12:30 - Urology X-ray Conference; X-ray Department.
1:00 - Autopsy Conference; E. T. Bell; Conference Room, Bldg. I.
2:00 - Pathology Slide Conference; E. T. Bell; Conference Room, Bldg. I.

Saturday, December 4

Medical School and University Hospitals

- 7:45 - 8:50 Orthopedic X-ray Conference; W. H. Cole and Staff; M-109, U. H.
9:00 - 9:30 Pediatric Grand Rounds; Eustis Amphitheater, U. H.
9:00 - 11:50 Medicine Ward Rounds; C. J. Watson and Staff; Heart Hospital Amphitheater.
9:15 - 10:00 Surgery-Roentgenology Conference; L. G. Rigler, J. Friedman, Owen H. Wangenstein and Staff; Todd Amphitheater, U. H.
10:00 - 11:30 Surgery Conference; Todd Amphitheater, U. H.
10:00 - 12:50 Obstetrics and Gynecology Rounds; J. L. McKelvey and Staff; Station 44, U. H.

Saturday, December 4 (Cont.)

Ancker Hospital

8:30 - 9:30 Surgery Conference; Auditorium.

9:30 - 11:00 Medicine Grand Ward Rounds.

Minneapolis General Hospital

8:00 - Urology Staff Conference; T. H. Sweetser; Main Classroom.

9:00 - Psychiatry Grand Rounds; R. W. Anderson; Station H.

9:30 - Pediatric Rounds on all Stations; R. P. Raile.

11:00 - 12:00 Medical X-ray Conference; O. Lipschultz, Thomas Lowry and Staff;
Main Classroom.

Veterans Administration Hospital

8:00 - Proctology Rounds; W. C. Bernstein and Staff; Bldg. III.

8:30 - Medical X-ray Conference; Conference Room, Bldg. I.

*Indicates special meeting. All other meetings occur regularly each week at the same time on the same day. Meeting place may vary from week to week for some conferences.