Staff Meeting Bulletin
Hospitals of the » » »
University of Minnesota

Besnier-Boeck-Schaumann's Disease

Volume X | Friday, March 24, 1939 | Number 22

STAFF MEETING BULLETIN
HOSPITALS OF THE . . .
UNIVERSITY OF MINNESOTA

Volume X | Friday, March 24, 1939 | Number 22

INDEX

Published for the General Staff Meeting each week during the school year, October to May, inclusive.

Financed by the Citizens Aid Society.

William A. O'Brien, M.D.

I. LAST WEEK

Date: March 17, 1939

Place: Recreation Room
Powell Hall

Time: 12:15 to 1:20 p.m.

Program: Movie: "Ski Rhythm"

Announcements

Seasonal Pollinosis
R. V. Ellis

Discussion
H. B. Sweetser
R. V. Ellis

Present: 130

Gertrude Gunn
Record Librarian

II. MOVIE

Title: "Hunting Thrills"
A Grantland Rice Feature

Released by: Paramount Picture Corp.

III. ANNOUNCEMENTS

1. DAVID B. DAVIS, M.D.

Suite 320 Westlake Professional Building
Los Angeles
Practice limited to Infants and Children.
Fairfax 1416

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2. THOMAS LOWRY, M.D.

Internal Medicine
1147 Medical Arts Building
Minneapolis Br.8530

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3. PROGRAM FOR BALANCE OF THE YEAR 1938-1939

March 31	Vacation
April 7	Good Friday
April 14	Laboratories
April 21	Medicine
April 28	Surgery
May 5	Diagnostic Roentgenology
May 12	Irradiation Therapy
May 19	Obstetrics and Gynecology
May 26	Physical Therapy
June 2	Pediatrics
June 9	Laboratories
June 16	Administration

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4. POSTGRADUATE COURSE IN ROENTGENOLOGICAL DIAGNOSIS

will be offered at the Center for Continuation Study from March 27 to April 1 by the following staff men:

Leo G. Rigler, Professor of Radiology, Chr.
J. R. Aurelius, Instructor in Radiology
Chauncey N. Borman, Assistant in Radiology
John D. Camp, Assistant Professor of Radiology, Mayo Foundation
A. B. Greene, Assistant in Radiology
M. B. Hanson, Instructor in Radiology
Oscar Lipschultz, Instructor in Radiology
J. P. Medelman, Assistant in Radiology
H. O. Peterson, Instructor in Radiology
R. W. Morse, Instructor in Radiology
Ames W. Naslund, Assistant in Radiology
Charles Sutherland, Assistant Professor of Radiology, Mayo Foundation
Walter H. Ude, Assistant Professor of Radiology
Harry Weber, Instructor in Radiology, Mayo Foundation

See Page 322 for Program

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5. VACATION

For the next two weeks.
Next meeting will be April 14, 1939.

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6. THE NEXT COURSE

At the Center for Continuation Study will be in General Surgery, April 10 - 15, 1939.

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IV. DIVISION OF DERMATOLOGY

REPORT -- 1937-1938

The annual registration figures for the various dermatologic out-patient services associated with the University of Minnesota Division of Dermatology were recently reviewed. It was thought that these statistics might be of sufficient interest to the general staff to justify their presentation today. In the study are included only those clinics whose material is regularly used for undergraduate teaching.

Clinic Registrations
(July 1, 1937--June 30, 1938)

	Dermatology		Syphilis	
	New	Total	New	Total
Ancker	655	3528	262	14,718
Wilder	428	1491		
Minneapolis General Hospital	1931	10,334	222	20,461
University of Minnesota Hospitals	890	4816	123	5883
Total:	3903	20,169	607	41,062

Clinical care of this large number of patients place a considerable load on a relatively small number of staff members, all of whom are on a part-time basis and most of them in non-salaried appointments. The amount of clinical work may best be realized when it is recalled that practically every dermatologic patient-visit represents actual consultation with a staff member.

The number of visits to the Syphilis Clinics is great but the actual work in these clinics is done chiefly by the students and interns under the supervision of fellows and staff.

The annual admissions to the various hospital services is also tabulated:

Ancker Hospital	415
Minneapolis General Hospital	273
University of Minnesota Hospitals	172
Total dermatologic Admissions	860

This large volume of clinical material can be utilized to advantage only because of the close relationship between the various institutions. That this relationship works to the advantage of both the Medical School and the clinics is illustrated by the fact that biopsy material from all interesting cases and diagnostic problems of all the clinics is centered at the University for preparation, study and permanent filing. A total of 819 specimens were studied last year.

Required and optional clinics for the senior students are conducted at the source of the material in the four out-patient departments. A selection of the best cases is then made and these patients are brought to the University Hospitals each Friday for the junior class clinic. During the past school year 217 cases were presented to the junior students. Of these cases, 33 were clinical examples of syphilis, chiefly cutaneous. The sources of this material are indicated by the following table:

Ancker Hospital	76
Minneapolis General Hospital	56
University of Minnesota Hospitals	85
Total:	217

Eight members of the faculty are regularly required for the conduct of

these various clinical services and are directly concerned with the teaching of the junior and senior undergraduates. Two additional faculty members assist with clinical care of patients and two are active in the State Board of Health in the program of syphilis control.

With the size of the clinical load as indicated in this report, it is natural that most of the research activity in the department must be clinical in nature. That such work is being performed is best indicated by the fact that in each of the past five years the division has been represented on the annual program of both the American Dermatological Association and the American Medical Association. The graduate students are urged to work in the more basic fields and in recent years their theses have reported on work in anatomy, bacteriology and immunology.

It is hoped that this review of the activities of the Division of Dermatology may demonstrate to the staff and faculty that the work of a minor division may often be greater than is suspected and that the terms "small, part-time and clinical" as applied to such divisions may be somewhat misleading.

F. L.

V. BESNIER-BOECK-SCHAUMANN'S DISEASE

John F. Wilson

For the past fifty years there have been described what were thought to be diseases related to tuberculosis but not fulfilling Koch's postulates. Among the first of these was the description of a disease in 1889 by Besnier called "lupus pernio". In 1899 Boeck described a condition which he thought resembled the changes in the skin found in the leukemic diseases. The popular conception of the latter conditions at that time was that they were blood sarcomata. He, therefore, titled the disease "multiple benign sarcoid."

In 1875 Hutchinson described a case similar to Besnier's lupus pernio. His description of Mortimer's Malady in 1898 proved this to be the same condition reported by Boeck. Hutchinson, therefore, was the first to report Sarcoid in the literature.

In 1915, Kuznitsky and Bittorf described a case of sarcoid with lung changes, lymphadenopathy and splenomegaly. Leucopenia and eosinophilia were also present. This was the first recognition given to the disease as a generalized condition, although Kreibich in 1904 associated certain cystic changes in the bones with the skin changes of lupus pernio.

It remained to Schaumann to correlate these various confusing findings. In 1917, he identified lupus pernio and multiple benign sarcoid as the same disease. He described at the same time the histopathologic changes found in the lymph nodes as being similar to those in the skin.

Jungling in 1919 described the cystic bone changes noted by Kreibich. He examined these lesions microscopically and found the picture similar to that described by Boeck. Jungling called the condition "osteitis tuberculosa multiplex cystica." He stressed the fact that these changes could be found in patients without skin lesions.

Heerfordt described a rare condition in 1909 which he called uveoparotid fever. It had first been reported in 1899 by Daireaux. The syndrome consists of bilateral enlargement of the parotid glands and uveitis. Fever, neuritis with palsy, toxic eruptions and regional lymphadenopathy are frequent accompaniments. Microscopic examination of the parotid glands, iris and adjacent lymph nodes reveal the typical sarcoid picture.

There have been various names ascribed to this disease which render a formidable obstacle to general dissemination of knowledge. It has been known in the literature as:

1. Multiple benign sarcoid or lupoid
2. Lupus pernio
3. Hutchinson's disease
4. Mortimer's or Mabey's Malady
5. Besnier's disease
6. Boeck's disease
7. Sarcoidosis
8. Miliary lupoid
9. Schaumann's disease
10. Benign lymphogranulomatosis
11. Tuberculosis indurativa lupoides (type Boeck)
12. Angiolupoid

Various combinations of these names were also used, and it was not until the 1934 French Conference at Strasbourg that any attempt was made to standardize the nomenclature. At that meeting the name "Besnier-Boeck's disease" was decided upon.

Because of the great part played by Schaumann in bringing about the realization of this disease as a generalized condition, we prefer to use the term Besnier-Boeck-Schaumann's disease.

Clinical Review

Besnier-Boeck-Schaumann's disease is indeed a syndrome of protean manifestations. The skin, lungs, bones, and lymph nodes are the organs most commonly affected. In the light of recent reports, however, it has become apparent that no tissue of the body is spared. Because of the presence of skin lesions in approximately 90% of the cases reported, it is of special interest to the dermatologist.

Although it is difficult to estimate the number of these patients with changes in the lungs, there are unquestionably a great majority showing the typical roentgen picture. As the exact diagnosis of this condition without microscopic examination of the tissues affected is not only difficult but almost impossible, we can readily understand that positive clinical findings in the chest alone may easily be mistaken for the manifestation of some other disease. There are a number of descriptions in the literature that in retrospect are probably examples of sarcoid. These have been reported under various names, the most common of which are: banal tuberculosis; non-caseating tuberculosis (Pinner); chronic or benign miliary tuberculosis; granulie froide and tramite of the French; sclerosing, tuberculous, large-celled hyperplasia (Mylius and Schurmann).

In a number of cases of Besnier-Boeck-Schaumann's disease lesions of the bones are present. About 20% of patients with this disease, especially those with the so-called lupus pernio type show these characteristic changes. The phalanges are most commonly affected although all of the bones may show these lesions. They appear as cysts of the bones on roentgenologic examination. Jungling in 1919 demonstrated conclusively by microscopic examination of these areas that they are caused by epithelioid cell infiltrates similar to those found in the other organs.

According to Schaumann, the lymphatic system is affected in all cases. The superficial lymph nodes, tonsils, hilar lymph nodes, and the spleen are all affected in varying degrees and are the only portions of this system practically available at the present time to antemortem examination.

Lesions have been reported less frequently in the parotid glands, iris, myocardium, endocardium, pancreas, testis, kidneys, and thyroid. It seems to be, in fact, but a matter of time alone until infiltrates shall be reported as present in all portions of the body.

Those skin lesions described by Besnier as lupus pernio and those by Boeck as sarcoid, we have finally determined to be manifestations of the same disease. These lesions are due to the infiltration of the skin with closely packed epithelioid cells. Because of this, it is readily apparent that papules, nodules, and plaques will be formed by these accumulations.

The lesions are found most commonly on the face, shoulders, and the extensor surfaces of the arms. They may, of course be few or great in number according to

the extent of involvement in each case. These cell infiltrates are firm and elastic to the touch and are felt to be within rather than under the skin. They are, however, not attached to the underlying structures. In size and shape, these infiltrations are limited only by the physical possibilities of the regions of the skin surface in which they are located. They vary from pin-point papules to nodules and plaques several centimeters in diameter. The confluence of lesions may produce even larger tumors or plaques.

Variations in the color of these skin changes are thought to be explained by the age of the lesions. Early lesions are of a shiny, purplish-red hue which become in time a dull, dark brown. Papules on the face have a bluish center and a yellow border. Residual lesions show healing with scar following complete cell absorption.

Besnier's lupus pernio was really a manifestation of this disease with the same infiltrations of epithelioid cells. The difference in appearance of the lesions is due to their location on the extremities of the body. Physical variations in the skin surface and differences in its blood supply cause the clinical picture described by Besnier as lupus pernio.

A rather typical clinical test is the demonstration of the described miliary lupoid lesion. Upon pressure directly over the area with a glass slide grayish-yellow foci are distinctly visible.

Pulmonary changes may be present with or without observable lesions of the skin or other organs of the body. The infiltrative appearance of the lungs on roentgen examination is explained by Snapper as being due to the presence of epithelioid cells in the periadventitial cells of the smaller arteries in the interalveolar septa. These cells are therefore considered to be elements of the reticulo-endothelial system.

While these lesions produce no symptoms during their active stage, they may at a later date produce more serious consequences. With healing and fibrous tissue contraction, the location of these lung changes may result in emphysema (Schaumann, Hudelo and Rabut) or polycythemia (Schaumann and Bloch).- Snapper has reported a case of right heart insufficiency and death following healing in Besnier-Boeck-Schaumann's disease.

Complications produced by healing may also result in changes in other organs. Blindness and seventh nerve palsy may result from the healing of uveoparotid infiltrations. Diabetes insipidus has followed infundibulohypophyseal involvement. In fact, it is readily seen that such changes are but limited by the distribution of the units of the reticulo-endothelial system.

Roentgenologic Findings

The roentgenogram is sometimes helpful in the diagnosis of this disease. Lesions apparent upon roentgen study are those of the bones and those within the chest.

The intrathoracic lesions were first described by Kuznitzky and Bittorf in 1915. These changes consist of hilar node enlargement and diffuse infiltration of the lung parenchyma. They are not specific, however, and resemble pictures seen in many diseases. Chronic tuberculosis, carcinomatosis, pneumoconiosis, fibroid tuberculosis, and Hodgkin's disease may all, in some degree, simulate these lesions.

Osseous lesions may also be present. In 1921 Jungling described these changes as "osteitis tuberculosa multiplex cystica." They are most common in the phalanges where they appear as punched-out areas on the roentgenogram. They are also present but less commonly so in the metacarpals and metatarsals.

In other bones often the lesions are more diffuse. A uniform thinning of the bones results with the appearance of osteoporosis.

Laboratory Findings

Various immunologic, hematologic, and chemical changes of the body have been reported as being characteristic of this disease. Probably the most important, although certainly not the most easily explainable of these, is the reaction of the tuberculin test in Besnier-Boeck-Schaumann's disease.

For many years it has been noticed that in spite of the suggested etiologic agent (the tubercle bacillus) the tuberculin reaction was usually negative. In order to make this result consistent with the theory of tuberculosis as the etiologic factor, it was decided, therefore, that this failure of response of the body tissue to the test was due to a low degree of tuberculin allergy, known in that disease as positive anergy. This absence of reaction is similar to the phase of negative energy found in terminal cases of tuberculosis but is due, not to failure of resistance of the body tissues, but inversely to a very high titer of so-called "anticutins."

Monocytosis has been found in varying degrees. Although it is absent in many cases, this is explained by Pinner as an indication of the activity of the process. He explains: "Since the monocytosis is obviously the hematological manifestation of a monocytic proliferation leading to the epithelioid granulomata, it can be expected to occur only during the actively proliferating phase, hence the irregularity of this phenomenon."

A skin test has been reported by Williams and Nickerson. It has had no verification. The workers point out that the disease like lymphogranuloma venereum is probably due to a filterable virus.

An increase in total blood proteins because of increased serum globulin has been reported in some cases. This, in addition to a leucopenia, with a predominance of non-segmented forms are considered to be quite important findings by Snapper. Eosinophilia is an occasional finding. These have not been observed with any degree of consistency by us.

Histopathologic Changes

The tissue changes occurring in sarcoid are considered characteristic. The various organs of the body are all affected by the presence of varying numbers of infiltrations of epithelioid cells. These are scattered throughout the otherwise normal tissue of these organs. They are tuberculoid in appearance with the arrangement of several layers of epithelioid cells in thickness and with the occasional presence of giant cells. They are surrounded by a thin margin of lymphocytes.

In the skin these tuberculoid foci are usually present in the corium. Their appearance here, although typical of the disease, may often be confused with other conditions of the skin. Foreign body, tuberculosis, syphilis, and leprosy produce tissue reactions similar to sarcoid.

The lungs, lymph nodes, bones, and other organs contain these epithelioid cell accumulations. These are not ordinarily available for antemortem examination. If at all possible, they should be examined, however, as the finding of tuberculoid cluster in these organs is less suggestive of other conditions.

Because of this tuberculoid structure, it is important to differentiate these changes from those found in tuberculosis. Lack of caseation is the most prominent of these differences. The tubercle bacillus has not been sufficiently demonstrated in proved cases to consider its presence seriously as the etiologic agent in this disease. Polymorphonuclear neutrophiles are absent.

Etiology

The cause of this disease is unknown. There have been many theories advanced. Probably the most popular and certainly the most fanciful of these is that the

condition is an unusual manifestation of tuberculosis. This was first considered by Boeck and gained strength with the report of the finding of the tubercle bacillus in very early lesions by Kyrle and others.

This theory is considered to bs substantiated by the finding of a negative response to the tuberculin test in these patients. These patients, without any other explanation, are then said to be "positively anergic" to tuberculosis, i.e., having an extremely high degree of resistance to the tubercle bacillus without the cutaneous reaction to the tuberculin test.

According to this theory, the tubercle bacillus passes into the blood stream from a primary focus and is carried to all the organs of the body. Here it lodges in the tissues and is killed by the overpowering resistance of the tissues causing the formation of the typical "sarcoid" clusters of cells.

French dermatologists, especially Darier, Pautrier, and Gougerot, believe that the term sarcoid should include clinical and histologic syndromes of diverse etiology, and that in cases in which the etiology is unknown, one is not justified in accepting a single etiologic cause. Jordan and Oliver in this country also share this belief.

Prognosis and Treatment

The prognosis in sarcoid is generally good. Few fatalities as a direct result of the disease itself have been demonstrated.

Because of fibrous tissue contraction consistent with the healing of the disease, complications arise which are due to the presence of the lesions in the interalveolar septa of the lungs. Pulmonary fibrosis with concomitant emphysema and even polycythemia have resulted. Snapper has reported a case in which the fibrosis was so marked that death resulted from insufficiency of the right heart.

It is because of the usually benign nature of the disease, however, that evaluation of therapy becomes so difficult. This almost complete absence of subjective symptoms coupled with a wide variation in the length of the condition make adequate records most difficult to obtain.

The arsenicals, because of their traditional use in skin conditions, have attained almost universal favor in the treatment of Besnier-Boeck-Schaumann's Disease. There is, of course, no way in which improvement in the lesions can be estimated accurately, and clinical observations, therefore, vary widely.

Destruction of the lesions locally by means of carbon dioxide snow has been recommended. This measure, of course, makes no attempt to treat the condition as a constitutional disease. Because of the fact that healing with atrophy is the usual course, however, this procedure is justified.

University of Minnesota Cases

Several cases have been observed by the members of the Department here and at the Minneapolis General Hospital. One of these cases was first observed at the latter hospital and has been followed here over a period of some months. It is a typical example of this condition.

Case I

A white woman, aged 65, was first seen at the Minneapolis General Hospital, where the diagnosis of sarcoid was made by Dr. S. E. Sweitzer. She was admitted to the University Hospitals on April 11, 1938 for observation and study.

For the past three years she has suffered from diabetes which has been controlled by diet. Two years ago she developed reddish spots on her forearms which gradually began to appear over her entire body. There have been no subjective symptoms.

On December 22, 1937 she suffered from a severe nasal hemorrhage which recurred on December 25, 1937. She became very weak and went to the Minneapolis General Hospital for treatment, following which incident the diagnosis was made.

There are numerous reddish-brown to dark-brown plaques covering the entire body. These plaques seem to extend to the depth of the epidermis but are freely movable over the underlying tissues.

The liver edge is palpable two fingers below the costal margin.

Albuminuria was constant. There was a moderate anemia but the leucocyte count differential was normal. The blood Wassermann was negative. The total protein was 5.99 (Albumin - 3, Globulin - 2.99). The blood sugar was 148. The sedimentation rate was 115 mm. in one hour.

Roentgen studies showed a typical picture of sarcoid changes in the bones and lungs.

Microscopic examination of the skin and tonsils both were consistent with the histopathologic changes found in sarcoid.

The patient was given ferrous sulfate, yeast and cod liver oil for therapy and has shown marked improvement since that time. The skin lesions have healed with atrophy. Roentgenograms show regression of both the lung and bone lesions.

* * *

In addition it is worthy of mention that a number of these cases with typical dermatological changes have been seen in offices of the members of the staff. These cases were diagnosed on the strength of the biopsies taken. These cases numbered 27 over a period of approximately 10 years.

Another case brought to our attention by the Roentgenologic Department of this hospital is worthy of mention because of the absence of typical skin changes. However, x-ray and some physical findings point to a diagnosis of sarcoid.

* * *

Case II

A woman, aged 47, came to the University Hospitals on May 8, 1937 complaining of painful lumps on both shins for two weeks, pain in the heels for seven months, and pain on respiration following a fall three weeks ago.

She had suffered from "flu" in January, 1937 and since that time had slight dyspnea on exertion, a non-productive cough, and had lost 16 pounds.

She was seen on three occasions by the Dermatology Staff. On May 10, 1937, a diagnosis of probable involuting erythema nodosum was made. She was seen on May 14, 1937 and June 12, 1937 by two other members of the Department with the notation that the lesions had healed completely. No biopsy was taken.

There is no cervical nor axillary adenopathy. Upon percussion the liver is thought to be enlarged but could not be felt. The spleen is palpable.

Hematologic studies were normal. The blood Wassermann was negative. The sedimentation rate was 76 mm. in 60 minutes.

Roentgenologic studies of the chest revealed marked enlargement of the hilar lymph nodes and diffuse infiltration of the lungs.

* * *

It can well be seen, however, that from our experiences with this disease no accurate diagnosis can be made without microscopic study of the lesions produced by this disease. Although the skin changes in this case are certainly not typical of Besnier-Boeck-Schaumann's disease, the unusual roentgen findings,

the respiratory symptoms, weight loss, hepato- and splenomegaly seem to point to such a diagnosis in this case. Follow-up in this case has been as yet unsuccessful.

Summary

1. Besnier-Boeck-Schaumann's Disease is a generalized disturbance of the reticulo-endothelial system.
2. Lesions of the skin are the most common findings.
3. The etiology is undetermined.
4. The prognosis is usually good.
5. Treatment is of little avail.
6. Two cases at the University of Minnesota Hospitals are reported.

* * *

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   Weiner Medizinischen Wochenschrift, Nr35, 1937
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   Noncaseating Tuberculosis
   Am. Rev. of Tub., XXXVI, #6, June, 1938.
5. I. Snapper
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   Haarlem, 1938.

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VI.

UNIVERSITY OF MINNESOTA
Center for Continuation Study

Program,
Postgraduate Course in Roentgenologic Diagnosis March 27 - April 1, 1939

Hour	Monday March 27	Tuesday March 28	Wednesday March 29	Thursday March 30	Friday March 31	Saturday April 1
9:00 to 10:00	Introduction - The Scope of Roentgen Diagnosis Dr.Rigler	Diseases of Pleura Dr.Rigler	The Normal Lungs Dr.Hanson	Non-tuberculous Chronic Pulmonary Diseases Dr.Ude	The Normal Stomach and Duodenum Dr.Morse	Roentgen Diagnosis in Obstetrics & Gynecology Dr.Borman
10:00 to 11:00	Normal Bones & Joints Dr.Lipschultz	Diseases of Spine Dr.Peterson	Pulmonary Tuberculosis Dr.Hanson	Non-tuberculous Chronic Pulmonary Diseases Dr.Ude	Tumors of the Stomach Dr.Morse	Roentgen Technique Mr.Greene
11:00 to 12:00	Traumatic Lesions of Bones Dr.Lipschultz	Diseases of Heart Dr.Medelman	Acute Pulmonary Diseases Dr.Lipschultz	Tumors of Lung and Mediastinum Dr.Rigler	Ulcer of Stomach & Duodenum Dr.Naslund	Round Table Conference Mr. Greene Dr. Borman
2:00 to 4:00	Diseases of the Skull, Paranasal Sinuses, Mastoids Dr.Camp	Tumors & Infections of Bones Dr.Sutherland		The Small Intestine and Colon Dr.Weber	The Gallbladder Dr.Aurelius The Urinary Tract Dr.Aurelius	
4:30 to 6:00	Round Table Conference Dr.Camp	Round Table Conference Dr.Sutherland		Round Table Conference Dr.Weber	Round Table Conference Dr.Aurelius Dr.Morse	
7:30 to 8:30			Round Table Conference Dr.Rigler			
8:30 to 9:30			Round Table Conference Dr.Hanson Dr.Medelman			

Round Table Conferences are a question and answer period, with analysis of actual films presented for diagnosis. Participants are urged to bring with them problem films.

All sessions will be held in the Chapel of the Center unless otherwise announced.

VII. GOSSIP

According to the Hospital Number of the Journal of the American Medical Association, the University of Minnesota Hospitals have 450 beds and 25 bassinets. 487 babies were born here last year, and the average census was 351 with 9,347 admissions. The Minneapolis General Hospital, with 616 beds and 55 bassinets, had 1,469 births, an average census of 610 and 13,203 admissions. The largest hospital in Minneapolis is the Veterans Administration Facility with 642 beds and an average daily census of 582 with 3,888 admissions. For many years the University Hospitals have had in excess of 70% autopsies (70.2 in 1937, 81.3 in 1938). We are sixth in hospitals approved for internship. Ancker Hospital, St. Paul with 81.7 is the only Minnesota institution with a higher percentage.. In computing rates all deaths are considered except still births. No attempt is made to distinguish between institutional and non-institutional deaths. It is interesting to note that coroner's cases may not be included in the hospital figures if no educational purpose is served by the examination. This method of calculation may explain differences in reported figures and the results which are announced. In Minnesota in' 1937, 144 hospitals had clinical laboratories; in 1938, 153 institutions had them. In 1937, there were 98 medical directors; in 1938, 109. The radiological figures for Minnesota show 176 hospitals in 1937 with departments, and 179 in 1938. In 1937 there were 124 medical directors; in 1938, 133. It is assumed that there are duplicates in both lists. The University of Minnesota Hospitals have the largest number of places for training of medical technologists (50 in the Senior year). When the school was established in Minnesota in 1922, it was one of the very few of its kind in this country. Now there are 141 accredited schools. In 1938, Minnesota reported 39 Schools of Nursing; in 1926, we had 67. There were 2,541 nursing students enrolled in 1938; in 1926 there were 3,403. Approved residencies and fellowships are offered in 30 branches of medicine (this is the same classification used in arranging courses in post-graduate medical training). There are schools for occupational therapy and physical therapy. Minnesota has 4.2 beds per 1000 of population with 70% occupancy. Hospital facilities are most used where they are most abundant and where the ratio of beds to population is lowest, the rate is lowest. There are 734 hospitals in the United States approved for the training of interns. In spite of the fact that there are 7,373 internships, only 6,100 positions are available each year, and 900 positions are left vacant because of insufficient numbers of graduates from our own medical schools. Of 7,354 internships, 5,700 are rotating, 442 are straight, 475 are mixed, and 737 are combination. There are 3,499 residencies available. General Surgery with 625, has the largest number. General Medicine is next with 454. These residencies are offered in 451 approved hospitals. Recent additions bring the total number of institutions to 503 and individual residencies and fellowships to 3,977. If all of these residencies and fellowships were vacated every year, there would be good opportunity to obtain graduate training. The slowness in turnover gives some idea of why the crowding is taking place. Hospital facilities are constantly expanding. There is an increase in beds which is out of proportion to the advance in population. In 1938, 9,421,075 patients were admitted to registered hospitals, the equivalent of one person to every 14 of the entire population. More than a million (1,026,771 to be exact) babies were born in hospitals in 1938. The average hospital stay in general hospitals is 12.5 days. These figures, 1 in 14 and 12.5 days provide the basis for computing the risk in hospital insurance. If similar figures were available on illness, prepayment plans for medical service could be developed. The growth of specialization and organization in hospital facilities (nursing, technology, records, pharmacy, and so forth) with the majority of these fields tending toward the college level has changed the practice of medicine. Many of the duties of the Hospital family are the medicine of yesterday and physicians with their newfound freedom should avail themselves of opportunity for continued study, and better understanding of their patients....