Bulletin of the

University of Minnesota Hospitals
and
Minnesota Medical Foundation

Biliary Stricture

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BULLETIN OF THE
UNIVERSITY OF MINNESOTA HOSPITALS
and
MINNESOTA MEDICAL FOUNDATION

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INDEX

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I. BILIARY STRICTURE

J. Bradley Aust, M.D.
Richard L. Varco, M.D.

I. Introduction

The concept of biliary stricture is one that is difficult of definition, for the anatomical varieties are numerous, ranging from localized stenosis, which the term 'stricture' first brings to mind, to a complete surgical absence of most of the extra-hepatic ductal system, including all variations between these extremes. Perhaps it is best regarded as a clinical concept, wherein obstruction of the extra-hepatic biliary system other than by calculus, provokes one or more of the symptoms of jaundice, cholangitis or pain.

The etiological factors responsible are listed as follows:

1. Congenital
2. Neoplastic
3. Inflammatory
4. Traumatic

As with most other writings on this subject, our interest centers on the benign varieties. Accordingly we shall omit a discussion of the neoplastic forms and dismiss the congenital ones by stating that there were but few such cases recorded during the years of this study. In this group, all, save one, were of the traumatic type and occurred following biliary surgery, either cholecystectomy, cholecystostomy, or choledochostomy. There was one case which had no prior surgery and which we have classified of inflammatory origin.

II. History

Although the first references to biliary stricture date to the French literature of the 1820's, when both Andral in 1824[1] and Bauillaud, 1827,[2] reported this clinical symptom complex secondary to inflammatory and neoplastic causes, it was not until cholecystectomy became popular that biliary strictures became a frequent surgical entity. The first successful cholecystectomy is attributed to Langenbuch[6] in 1882. The first end-to-end anastomosis of a divided common bile duct was performed by Doyen in 1892 a mere ten years later. Sprengel, in 1891, successfully anastomosed the common bile duct to the duodenum. Since then a wide variey of surgical techniques has been utilized to re-establish the continuity of the injured extra-hepatic biliary system with the intestine. An attempt to classify and evaluate the results of treatment in terms of the type of surgical repair was made in 1918[4] and again in 1936[5] by Eliot of New York. He collected the case reports in the literature. The experience at the Lahey Clinic was described in 1947 by Cattell,[3] and again in 1950 by Lahey,[7] who reported on 280 cases treated there with a 2 year follow-up on 229 cases. They report 73% favorable results for both end-to-end and choledocho-intestinal anastomoses. Walters,[9] of the Mayo Clinic, summarized their surgical accomplishments with 254 patients having biliary strictures. It is pertinent to note that choledocho-duodenostomy was the most common operation at the Mayo Clinic from 1924 - 1947. He stated that 82% of these repairs yielded satisfactory results.

III. Scope of Present Series

The present series consists of 56 patients diagnosed and undergoing surgery for biliary stricture at the University of Minnesota Hospitals between 1935 and the present time.

DISTRIBUTION OF SEX

Male	7
Female	49

From the sex and age distribution charts it is easily appreciated that the average patient was a woman between 40 - 50 years of age. We feel it is significant that 70% of these were under 50 years of age. The potential is hence strong, for a long survival period in individuals burdened by partial to major disablement.

DISTRIBUTION OF AGE

10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79
1	8	12	18	12	4	1

Of these 56 cases, 48 or 86% were adequately followed for 2 years following their last surgery. Some few have been lost to follow-up for many years and attempts to date to reach them have been fruitless. Others continue under observation, but their surgery has been performed within the past 2 years, placing them among the inadequate follow-up group. Letters of the type shown were sent to all patients. If returned unanswered, another message was written to the family physician to enlist his knowledge of this patient's current health.

IV. Analysis of Data

Any evaluation of end results in such a study must be necessarily quite arbitrary. For instance, in the classification below, the distinction in a given case between a satisfactory and an improved result was at times difficult. Moreover, a patient having had several previous attempts at surgical repair, with successive failures, often developed in conjunction recurrent infection and obstruction, and some associated degree of liver damage. An otherwise effective anatomical result conceivably would fail to resolve all lingering aspects of hepatic disease. The best result such an individual could attain, might therefore be scored as an improved result. The other categories usually were more easily determined; those patients with recurrent jaundice and/or cholangitis were self-evidently unsatisfactory results.

CLASSIFICATION OF RESULTS

(S) Satisfactory
(I) Improved but with residual symptoms
(U) Unsatisfactory
(L) Follow-up inadequate (less than 2 years or lost)
(E) Expired

The symptom complex of jaundice and/or chills and fever following biliary surgery is exemplified in this series. But 6 patients failed to exhibit jaundice on admission and three of these had total external biliary fistulas, while the other three gave histories of recurrent icterus. Twenty-six of the 56 patients (46%) had chills and fever prior to, or on admission.

In the accompanying chart listing the number of surgical procedures it can be noted that on the average each of these patients underwent 3+ operations. In addition to the original surgery, many persons had one or more repairs attempted prior to coming to the University of Minnesota Hospitals. The discrepancy between the number of operations performed here and the number of operations for stricture performed here arises from further surgery for complications or for the sequalae of the stricture operations. Gastric resection for duodenal ulcer, probably provoked by the stricture and its consequences, was required in three individuals.

OVERALL SURGERY PERFORMED

Patients	56	
Operations elsewhere	80	
Operations here	90	
Total operations	170	3.03/pt.
Operations for stricture here	74	1.32/pt.

The following classification of surgical procedures was devised to describe the numerous methods employed surgically for dealing with the biliary stricture problem.

I. Total External Biliary Fistula

II. Partial External Biliary Fistula with T-tube

A. Stricture dilated and T-tube

inserted
B. Stricture incised and closed over T-tube
C. Stricture excised T-tube bridging gap
D. Stricture excised T-tube exit in line of anastomosis
E. Stricture excised T-tube exit distal to line of anastomosis

III. Internal Biliary Fistula

A. Choledocho-gastrostomy
B. Choledocho-duodenostomy
C. Choledocho-jejunostomy

IV. Dissection Failure - i.e. failure to find stricture

V. RESULTS OF SURGERY

Results	I	II						III				IV
		A	B	C	D	E	TOTAL	A	B	C	TOTAL	
S		2	1	1	7	5	16		2	7	9	
I		1		1		2	4		1	2	3	
U	1	5			13	2	20	1	1		2	
L		1			5	1	7		1		1	
E	5				2		2		1		1	3
No. of operations	6	9	1	2	27	10	49	1	6	9	16	3

An analysis of the results of the methods of repair used by surgeons at the University of Minnesota Hospitals suggests certain considerations. The most common repair was end-to-end anastomosis with a T-tube exiting in the line of anastomosis. Recurrences were common after this procedure. A mere 26% or 7 of 27 exhibited a satisfactory end result. When the procedure was otherwise comparable but for the simple expedient of bringing the T-tube out distal to the suture line, the consequences to the patient were clearly more favorable (7 of 10 classified satisfactory or improved). To be sure, these types of reconstruction are practical only in persons with a localized stricture wherein a new union can easily be achieved without undue shortening and disruptive tension. One individual with a localized stenotic type of stricture had a longitudinal incision and transverse closure with a satisfactory result. However, mere dilatation of this type of stricture followed by insertion of a T-tube failed in five of nine attempts. The results of choledocho-intestinal anastomosis have been gratifying to note. Twelve of 16 (75%) persons so treated secured a satisfactory or improved result. The percentage of successes was even higher when the repair consisted of a choledocho-jejunostomy. Each of 9 consecutive cases had a favorable outcome. The result assumes additional significance when it is noted that this particular procedure (choledocho-jejunostomy) was often employed in the more difficult stricture problems. Dissection failures are self incriminatory and emphasize the deep obligation to master the problems at hand if the patient is to survive.

The operative mortality is listed on next page (9/90 - 10%)

The patient mortality of 25%, including both immediate post-operative deaths and those remote deaths brought about as a

MORTALITY

Operative:

Operations	Deaths	Per Cent
90	9	10.0
Patients:		
48 (adequate follow-up)	12*	25.0

*There were 3 late deaths considered due to stricture.

consequence of the stricture or surgery on it, is tragic testimony to the gravity of this affliction. This is often called "a benign" condition, yet as we have noted its greatest prevalence is in persons often young, with many of them doomed to all degrees of ill health, and one out of four has succumbed prematurely. A study of the causes of death reveals that they fit four main categories.

Both cases of fatal hemorrhage were prior to the advent of Vitamin K therapy. Also, the deaths from infection occurred despite combinations of antibiotic therapy. For the late deaths one seems attributable directly to the surgical procedure while the other three arose as sequalae of the unresolved stricture problem.

CAUSES OF DEATH

Type	Cases	Time	Cause
I. Dissection Failures	.	P.O.	Failure to find proximal duct
		P.O.	Failure to find stricture - biliary cirrhosis, hepatitis
	.*	P.O.	Failure to find stricture - thought to have ca. of pancreas
II. Hemorrhages**	.	P.O.	Hemorrhage
	.	P.O.	Hemorrhage and subphrenic abscess
III. Infection***	.	P.O.	Peritonitis, subphrenic abscess pancreatitis
	.....	P.O.	Liver abscess, biliary cirrhosis
		P.O.	Liver abscess
IV. Late		1 yr.	Hepatic artery injured and sutured at surgery - expired from ruptured aneurysm of hepatic artery
	.	13 yrs.	Expired following surgery for bleeding DU - extensive biliary cirrhosis
	.	6 mos.	Liver abscesses, suppurative cholangitis, recurrence of stricture
		6 mos.	Recurrence of stricture bleeding

* Only case not having had previous biliary surgery
** Both cases prior to 1936
*** All cases have been since 1942

OVERALL RESULTS

Satisfactory	25	45%
Improved	6	11%
Unsatisfactory	5	9%
Follow-up inadequate	8	14%
Expired	12	21%
Total	56	100%

VI. Discussion

From an examination of the recorded historical background of common duct strictures as well as through the hours spent reading the often voluminous hospital charts in this series of cases we have had impressed on us again the tragic aftermaths of this man-created affliction.

The experience might even be valuable enough, as a prophylactic, to urge a comparable endeavor for all surgeons operating upon the biliary system. And in any appraisal of this problem it is clear that effective prevention of this regrettable situation is surely far superior to the best possible reconstructive procedure. The latter will always entail a period of pain and an element of anesthetic and operative risk, that would not have been required, had the initial procedure gone well. The experience of many surgeons, each having done more than a thousand operations upon the biliary tract without provoking this grave outcome, confirms the belief that the standard type of operation on the gall bladder should be devoid of such disasters.

We wish to avoid knocking into tree after tree while trying to get out of the forest but do desire to attract the readers' notice to certainly undesirable features of the common duct stricture problem. This tragedy occurred to more than 70% of the patients, usually women under 50 years of age. The expense to someone with a young mother away from home for protracted periods, or worse, during the mid-period of life, could scarcely be less serious economically than if it were the father; the loss to the community and of the family is incalculable. Beyond the time spent in the hospital are often intervals of recurrent partial disability. In yet other instances the patient never quite regains full health. The undesirable residues of this condition are difficult to eliminate. Biliary cirrhosis, duodenal ulceration, portal hypertension from cavernomatous change, and yet other sequalae have developed in these people as a consequence of the common duct injury and operation for its correction. The gravity of this problem is pointed up by a patient mortality of 25%. These deaths, we believe, are premature and each ascribable to the stricture and to the subsequent operation(s) to correct it. There can hardly be any reasonable opposition it would seem, to emphasis on and devotion to, the practice of those surgical techniques that will effectively prevent the occurrence of a common duct stricture. This is surely a clear obligation of all centers training surgeons. The cautions to be observed are well described in the technical literature dealing with this area. Briefly, and but slightly oversimplified, the operator must be indoctrinated never to divide any duct structure presumed to be the cystic duct until the common duct proper and the common hepatic duct have been thoroughly exposed and unquestioably identified. Secondly, any untoward arterial bleeding from inadvertently divided vessels should be managed by digital compression via Winslow's foramen while the specific leak is carefully sought for forceps point hemostasis. Inadequate dissection followed by clamping, cutting, and ligation before complete identification of these ductal tributaries; indescriminate grasping for a bleeding site in the portal hilus, and a common duct stricture is conceived. When this offspring, disturbing to contemplate, comes to full growth, few would care to acknowledge its paternity.

The next phase of this problem to be considered is the matter of diagnosing the existence of a common duct stricture.

The condition is, often, on initial study of the history and the patient, self evident, although perhaps more so to those persons least involved.

There are certain lamp posts to light the way to a presumptive diagnosis of biliary stricture following cholecystectomy. The development of profuse persistant biliary drainage from wound or drainage site suggests that the duct may have been severed. Those patients who become unremittingly jaundiced with acholic stools from the day of surgery forth suggest that the duct may be tied off. There are those who recover from their immediate surgery but who later develop the symptom complex of chills, fever and right upper quadrant pain associated with icterus. Such late occurrences usually have an anatomic stenosis from scarring at the site of previous injury. It should be mentioned that this latter situation can be perfectly simulated by choledocho-lithiasis and operative exploration may be the only method of making a differentiation.

In the hope that individual patients might spontaneously improve with conservative management, undue procrastination in instigating effective therapy has occurred. This tendency was most pronounced following stricture repairs. Perhaps the surgeon responsible remembers only how satisfactory his repair seemed when he closed the abdomen and displaces from his mind the truth that recurrent chills, fever, and jaundice portend. This is indeed regrettable for the biliary cirrhosis which is produced from recurrent obstruction and cholangitis signifies irreparable liver damage. Recurrence of the above mentioned symptom complex following removal of T-tube or similar splint strongly suggests recurrence of the stricture and should give rise to appropriate therapy.

The obvious and traditional method of repair has been end-to-end anastomosis of the strictured duct. The normal anatomy is thereby restored. This is often difficult when a large portion of the duct is absent. However, Lahey and his colleagues at the Lahey Clinic have shown that it is possible to expose the proximal common bile duct in the substance of the pancreas and by mobilizing the duodenum, approximate the duct ends in a high percentage of cases. It has become evident that bringing the T-tube out the line of anastomosis is unsatisfactory and one must bring the T-tube out through an additional stab wound in the duct for best anastomotic healing.

Proponents of end-to-end anastomosis contend that the sphincter of Oddi is essential for the prevention of intestinal content regurgitation into the biliary tract, and subsequent cholangitis. They, therefore, reserve choledocho-intestinal anastomosis for individuals in whom end-to-end anastomosis is not technically feasible. Evidence against this concept is the occurrence of spontaneous, asymptomatic, internal biliary fistulas which cause no symptoms as long as they remain unobstructed. The experience at the Mayo Clinic with choledocho-intestinal anastomosis has been that reflux was only of academic importance if unassociated with obstruction.

In defense of choledocho-intestinal as compared to end-to-end anastomosis, one may contrast the facility with which the dissection can be performed, having only to find the proximal duct, as well as the ease of the actual repair. The difficulties of end-to-end anastomosis of duct ends of unequal diameter is well known.

We approached this subject without preconceived ideas as to which might be the most satisfactory method of repair. The evidence at hand convinces us that results of the highest order can be expected from choledocho-intestinal anastomosis. The reported statistics from both the Mayo and Lahey Clinics revealed comparable results with both methods but expressed the opinion that choledocho-intestinal anastomosis should be reserved for the more formidable of stricture types, in fact those in which end-to-end anastomosis was not feasible. Perhaps, since the results are at least comparable,

and the procedure more easily performed, choledocho-intestinal anastomosis should be the procedure of choice rather than the one used only when end-to-end anastomosis is not easily accomplished or is recurrently unsuccessful. However, there are certain disadvantages of this type procedure, particularly the Roux-en-Y type of choledocho-jejunostomy which in effect is a Mann-Williamson ulcer abetting operation. Three of our patients in this group were treated for duodenal ulcers, one requiring gastric resection. For this reason, perhaps a choledocho-duodenostomy is the choledocho-intestinal operation of choice for biliary stricture.

VII. Summary

(1) The results of surgery for biliary stricture on 56 patients seen at the University of Minnesota Hospitals since 1935 have been reported.

(2) It has been emphasized again that this is essentially a preventable disease, which is responsible for significant morbidity, in terms of multiple operations, frequent and often prolonged hospitalizations, and occasional permanent disability, as well as a mortality rate higher than many forms of malignancy.

(3) The traditional concept of end-to-end anastomosis with preservation of the sphincter of Oddi as the ideal form of treatment, is questioned. Our results, as well as the statistics of others, show that equally satisfactory results can be obtained with choledocho-intestinal anastomoses. The advantages of the latter procedure being technical ease, universal applicability, and lack of the need for partial external biliary decompressive measures.

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BILIARY STRICTURE

	NAME	OPERATION ELSEWHERE	OPERATION HERE	OPERATION TYPE	RESULT	CHILLS & FEVER	JAUNDICE	OVERALL RESULT
1.	. .	1	1	II-D	L	+	+	L
2.	. .	1	1(D)	IV	E	O	+	E
3.	. .	2	1	II-E	I	O	+	I
4.	.	1	3	II-D, II-D, III-B	UUL	O	+	L
5.	.	1	1	III-C	S	+	+	S
6.	.	2	1	II-D	L	+	+	L
7.	. .	2C	1	II-C	S	O	+	S
8.	. .	2	1(D)(B)	I	E	+	+	E
9.	. .	1	2(D)	III-B	E	+	+	E
10.	. .	1	1(DL)	II-D	E	O	+	E
11.	.	1	1	III-C	S	O	+	S
12.	.	1	2(D)	II-D	E	O	+	E
13.	.	1	3(U)(GR)	II-D, III-A, III-B	UUI	O	+	I
14.	.		2(D)(B)	I	E	+	+	E
15.	.	1	2	II-D, II-C	UI	+	+	I
16.	.	1	1	II-D	U	O	+	U
17.	.	1	2(U)(GR)(DL)	I	E	+	+	E
18.	.	3	1	III-C	S	+	+	S
19.	.	1	2	II-D, III-B	US	+	+	S
20.	.	1	1	II-D	S	O	+	S
21.	.	1	1	II-D	S	O	+	S
22.	.	1	1	II-D	S	+	+	S
23.	.	1	2	II-D	L	O	+	L
24.	.	2	6(SR)	II-D, II-E II-B	UIS	+	+	S
25.	.		2	III-B	S	O	+	S
26.	.	2(B)	2	I	U	O	+	U

27.	2	2	II-D, III-C	UI	+	+	I
28.	2	1(U)	III-C	S	+	+	S
29.	1	2	II-A, II-D	US	0	+	S
30.	4	1	II-E	L	+	0	L
31.	1	1	III-C	I	0	+	I
32.	1	1	II-E	S	0	0	S
33.	1	1	II-D	S	0	+	S
34.	3	4(D)(GR)	I	E	+	+	E
35.	6	2	II-D, II-A	US	+	+	S
36.	1	1	II-D	L	0	+	L
37.	2	3	II-D, II-E, II-D	UUS	+	0	S
38.	1	1	II-A	L	0	+	L
39.	1	1	II-E	S	+	+	S
40.	2	1(U)	III-C	S	+	+	S
41.	2(B)	2(GE)(DL)	I	E	+	+	E
42.	2	2	II-E, III-C	US	+	0	S
43.	2	1	II-D	L	0	+	L
44.	1	1	II-D	U	0	+	U
45.	1	1	II-E	S	0	0	S
46.	1	2(DL)	III-B	UE	+	+	E
47.	1	2(FB)	II-D	S	0	+	S
48.	1	2	II-D, II-E	US	+	+	S
49.		1(D)	IV	E	0	+	E
50.	2	1	III-C	S	0	+	S
51.	2(B)	1(DL)	IV	E	+	+	E
52.	2	4(B)	II-D, II-A, II-A, II-A	UUUU	+	+	U
53.	1	1	II-E	S	0	+	S
54.	1	1	II-D	U	0	+	U
55.		2	II-A	S	0	+	S
56.	1	1	II-A	I	0	0	I

U = ulcer
B = bleed
D = died p.o.
DL = died later
SR = spleno renal
C = cholecystostomy
FB = foreign body

GE = gastroenterostomy
GR = gastric resection
S = satisfactory
I = improved
U = unsatisfactory
L = lost - follow-up inadequate
E = expired

UNIVERSITY OF MINNESOTA
The Medical School
Minneapolis 14

Department of Surgery

Dear Mrs. X:

Sometime ago you underwent an operation at the University Hospitals for obstruction of your common bile duct. We are most interested in how you are getting along, and would appreciate it if you would write us a letter answering in particular the following questions.

1. Do you have any chills or fever?

2. How is your appetite?

3. Have you lost any weight? If so, how much?

4. Are you now or have you been jaundiced since your surgery?

5. Do you still wear a tube or drain? If so, do you have any symptoms when it is clamped?

6. Have you had any further operations?

If you desire you may indicate the answers, opposite the questions; or elaborate on your present condition on the reverse of this letter. If at all possible we would like to have you come into the clinic any Wednesday morning of your choice before April 15, 1954. There are several blood tests which should be done to better evaluate your present state of health.

We appreciate your cooperation in this matter and hope to hear from you in a few days.

Sincerely yours,

J. R. Aust, M.D.
Department of Surgery

II. MEDICAL SCHOOL NEWS

Coming Events

May 10 - 15	Continuation Course in Electrocardiography for General Physicians
May 12	Special Lecture; "The Enzyme Machinery of the Cell;" Dr. David E. Green, Professor of Enzyme Chemistry and Director of Institute for Enzyme Research, University of Wisconsin; Owre Amphitheater; 4:00 p.m.
May 13	Special Lecture; "Comparative Studies on Cultured Strains of Normal and Malignant Cells;" Dr. George O. Guy, Johns Hopkins University, Baltimore, Maryland; Museum of Natural History Auditorium; 8:00 p.m.
May 17 - 22	Continuation Course in Proctology for General Physicians
May 20	Medical Six O'Clock Dinner; Main Ballroom, Coffman Memorial Union; 6:30 p.m.
June 3	Luncheon for Senior Medical Students sponsored by the Minnesota Medical Alumni Association; Junior Ballroom, Coffman Memorial Union; 12:30 p.m.

* * *

Dr. Campbell Awarded Horsley Memorial Prize

Announcement was recently made by Dr. Thomas H. Hunter, Dean of the Medical School of the University of Virginia, that the annual John Horsley Memorial Prize has been awarded to Dr. Gilbert S. Campbell, Medical Fellow, Department of Surgery. The award, which amounts to $600, was made in recognition of Dr. Campbell's paper entitled "The Effect of pH Changes on Vagal Inhibition of the Heart." Dr. Campbell was recently recipient of a Markle scholarship. The faculty joins in congratulating Dr. Campbell on these two recognitions of his work.

* * *

Faculty News

On March 27 Dr. C. J. Watson, Professor and Head, Department of Medicine, addressed the California Academy of Medicine on "The Significance of the Porphyrins in Clinical Medicine." From March 31 to April 2 he served as a visiting Professor at the University of Oregon Medical School in Portland.

The recent meetings of the Federation of American Societies for Experimental Biology in Atlantic City attracted a number of our faculty members. Minnesotans attending included: Doctors Maurice B. Visscher, Nathan Lifson, Ernest B. Brown, Victor Lorber, H. Mead Cavert, Ruth McClintock, Charles Heath, Alan M. Thompson, John K. Love, Jr., Franz Halberg, and Oleg Jardetzky of the Department of Physiology, Dr. W. G. Kubicek, of the Department of Physical Medicine and Rehabilitation, and Doctors C. J. Watson and Samuel Schwartz, of the Department of Medicine. Doctors Lorber and Jardetzky also attended the meeting of the American Association for Cancer Research in New York City.

Recent distinguished visitors to our campus were Dr. H. A. Krebs, Professor of Biochemistry, University of Sheffield, Sheffield, England, and Dr. Herbert S. Ripley, Professor and Head of the Department of Psychiatry at the University of Washington.

Doctors A. B. Baker, Maynard Cohen, Fae Tichy, and Charles Van Buskirk attended the recent meeting of the American Academy of Neurology which was held in Washington, D. C.

(Continued on next page)

Among faculty members attending the American Psychiatric Association meeting in St. Louis were Doctors Donald Hastings, B. C. Schiele, Richard Anderson, Frank Kiesler, Clarence Rowe, Philip Margolis, and Joyce Lewis. Dr. Starke R. Hathaway and Miss Shirley Holt attended the Midwestern Psychological Association meeting in Columbus, Ohio, on April 30 and May 1.

Mr. George S. Michaelsen, Assistant Professor of Public Health and Industrial Health Engineer for the Students' Health Service, attended the 1954 Industrial Health Conference in Chicago from April 24 to 30.

* * *

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III. UNIVERSITY OF MINNESCTA MEDICAL SCHOOL

WEEKLY CALENDAR OF EVENTS

Physicians Welcome

May 10 - 15, 1954

Monday, May 10

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, Moore and Stenstrom; Todd Amphitheater, U. H.

11:30 - 12:30 Physical Medicine Seminar; O.T. and P.T. in Treatment of Hemiplegia; M. Lepley, M. Mundele, and R. Rabideau; Heart Hospital Auditorium.

12:15 - Obstetrics and Gynecology Journal Club; Staff Dining Room, U. H.

12:30 - 1:30 Physiology Seminar; Some Effects of Maternal Nutrition on the Young; Max Schultze; 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.

4:30 - Infectious Disease Rounds; Station 43, U. H.

4:30 - Public Health Seminar; 15 Owre Hall.

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

8:30 - 10:00 Tuberculosis and Chest Conference; Auditorium.

2:00 - 3:00 Surgery Journal Club; Classroom.

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.

Monday, May 10 (Cont.)

Minneapolis General Hospital (Cont.)

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, Zinneman, Lubin and Sherman.

1:30 - Cardiac Conference; Drs. Berman, Smith, Hoseth, and Wexler; Conference Room, Bldg. I; Rounds immediately following conference.

Tuesday, May 11

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; 102 Institute of Anatomy.

12:30 - 1:30 Bacteriology Seminar; 214 Millard Hall.

3:30 - Pediatric Seminar; Reports of Meetings; Staff Members; Sixth Floor, U.H.

3:30 - Biophysics- General Physiology Seminar; 323 Zoology Building.

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 Veterans Hospital; Drs. Jorgens, Tucker, et al; Eustis Amphitheater, U. H.

Ancker Hospital

8:00 - 9:00 Fracture Conference; Auditorium.

9:00 - 10:00 Medical X-ray Conference; Auditorium.

Minneapolis General Hospital

9:30 - Pediatric Rounds; Elizabeth Lowry; Station J.

10:00 - Psychiatry Grand Rounds; R. W. Anderson; Station H.

10:00 - Cardiac Rounds; Paul F. Dwan; Classroom, Station I.

11:00 - 12:00 Medicine - Surgery Conference; Classroom, Station I.

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; Conference Room, Bldg. I.

8:30 - Surgery Staff Seminar; Conference Room, Bldg. I.

9:30 - Surgery-Pathology Conference; Conference Room, Bldg. I.

10:30 - Surgery-Tumor Conference; L. J. Hay, J. Jorgens and Donn Mosser; Conference Room, Bldg. I.

1:00 - Review of Pathology, Pulmonary Tuberculosis; Conference Room, Bldg. I.

Tuesday, May 11 (Cont.)

Veterans Administration Hospital (Cont.)

1:30 - 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.

Wednesday, May 12

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 Radioisotope Seminar; Summary of Thyroid Function Determinations by Iodine Uptake Studies; Joseph Ryan; Underground Cobalt Unit, U. H.

12:30 - 1:30 Physiology 114C--Respiration; E. B. Brown; 214 Millard Hall.

1:00 - 2:00 Dermatology Clinical Seminar; F. W. Lynch; 300 North Clinic.

1:30 - 2:30 Physiology 114B--Transport Seminar; Nathan Lifson and M. B. Visscher; 271 Lyon Laboratories.

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.

*4:00 - Special Lecture; "The Enzyme Machinery of the Cell;" Dr. David E. Green, Professor of Enzyme Chemistry and Director of Institute for Enzyme Research, University of Wisconsin; 15 Owre Hall.

4:30 - 5:50 Dermatology-Infectious Disease Seminar; J. D. Krafchuk; 3rd Floor, Conference Room, Heart Hospital.

5:00 - 5:50 Urology-Pathological Conference; C. D. Creevy and Staff; Eustis Amphitheater, U. H.

5:00 - 6:00 Residents' Lecture; The Retrospectroscope; Leo G. Rigler; Todd 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; Auditorium.

12:30 - 1:30 Medical Journal Club; Library.

Minneapolis General Hospital

8:30 - 9:30 Obstetrical and Gynecological Grand Rounds; William P. Sadler and Staff; Station C.

9:30 - Pediatric Rounds; Henry Staub; Station I.

10:30 - 12:00 Medicine Rounds; Thomas Lowry and Staff; Station D.

12:30 - Pediatric Staff Meeting; Classroom; Station I.

1:30 - Pediatric House Staff Seminar; Erling Platou; Station I.

1:30 - Pediatric Rounds; Erling Platou; Classroom, Station I.

Wednesday, May 12 (Cont.)

Veterans Administration Hospital

8:30 - 10:00 Orthopedic X-ray Conference; E. T. 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, Hay, Brakel, Nesbitt and O'Leary.

11:00 - Gastroenterology Conference; Conference Room, Bldg. I.

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, Schultz and Brown.

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, May 13

Medical School and University Hospitals

9:00 - 11:50 Medicine Ward Rounds; C. J. Watson and Staff; E-221, U. H.

11:00 - 12:00 Cancer Clinic; K. Stenstrom, A. Kremen and B. Zimmermann; Todd Amphitheater, U. H.

12:00 - 1:00 Medical Journal Club; Infectious Mononucleosis; George Dorsey; 116 Millard Hall.

12:30 - 1:30 Electrocardiography Conference; Ernst Simonson; Staff Room, Cardiac Clinic, Heart Hospital.

12:30 - Physiological Chemistry Seminar; Biochemical interrelations between Sperm and Egg Cells; August Ruthmann; 214 Millard Hall.

1:30 - 4:00 Cardiology X-ray Conference; Heart Hospital Theatre.

5:00 - 6:00 Radiology Seminar; Recent Studies on the Anatomy of the Bronchial Tree; E. A. Boyden; Eustis Amphitheater, U. H.

*8:00 p.m. Special Lecture; "Comparative Studies on Cultured Strains of Normal and Malignant Cells;" Dr. George O. Guy, Johns Hopkins University, Baltimore, Maryland; Museum of Natural History Auditorium.

Ancker Hospital

8:00 - 10:00 Medical Grand Rounds; Auditorium.

Minneapolis General Hospital

9:30 - Neurology Rounds; Heinz Bruhl; Station I.

9:30 - Pediatric Contagion Rounds; R. B. Raile; Station K.

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.

Thursday, May 13 (Cont.)

Veterans Administration Hospital

8:00 - Surgery Grand Rounds; Conference Room, Bldg. I.

8:00 - Surgery Ward Rounds; Lyle Hay and Staff; Ward 11.

8:30 - Hematology Rounds; Drs. Hagen and Fifer.

11:00 - Surgery-Roentgen Conference; J. Jorgens; Conference Room, Bldg. I.

1:00 - 3:00 Parasitology Conference; Amebae; F. G. Wallace; Conference Room, Bldg. I.

4:00 - Medical-Surgical Conference; Conference Room, Bldg. I.

Friday, May 14

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 Staff Meeting; The Role of the Temporal Lobe in Medical Practice; V. R. Zarling, I. A. Brown, and Lyle A. French; 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.

3:30 - 4:30 Dermatology-Physiology Seminar; 3rd Floor Conference Room, Heart Hospital.

4:00 - 5:00 124 Advanced Neurophysiology Lecture; Werner Koella and Ernst Gellhorn, 111 Owre Hall.

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

1:00 - 3:00 Pathology-Surgery Conference; Auditorium.

Friday, May 14 (Cont.)

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; Dr. Zierold, Dr. 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.

1:00 - Chest Pathology Follow-Up Conference; E. T. Bell; Conference Room, Bldg. I.

2:00 - Autopsy Conference; E. T. Bell; Conference Room, Bldg. I.

Saturday, May 15

Medical School and University Hospitals

7:45 - 8:50 Orthopedic X-ray Conference; W. H. Cole and Staff; M-109, U. H.

9:00 - 10:30 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. Wangensteen and Staff; Todd Amphitheater, U. H.

10:00 - 11:30 Surgery Conference; Todd Amphitheater, U. H.

10:00 - 12:50 Obstetrics and Gynecology Grand Rounds; J. L. McKelvey and Staff; Station 44, U. H.

11:30 - Anatomy Seminar; The Use of Fluorescein in the Study of Hepatic Excretion in Mice; Joseph Eusterman; 226 Institute of Anatomy.

Ancker Hospital

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

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. B. 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.

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*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.