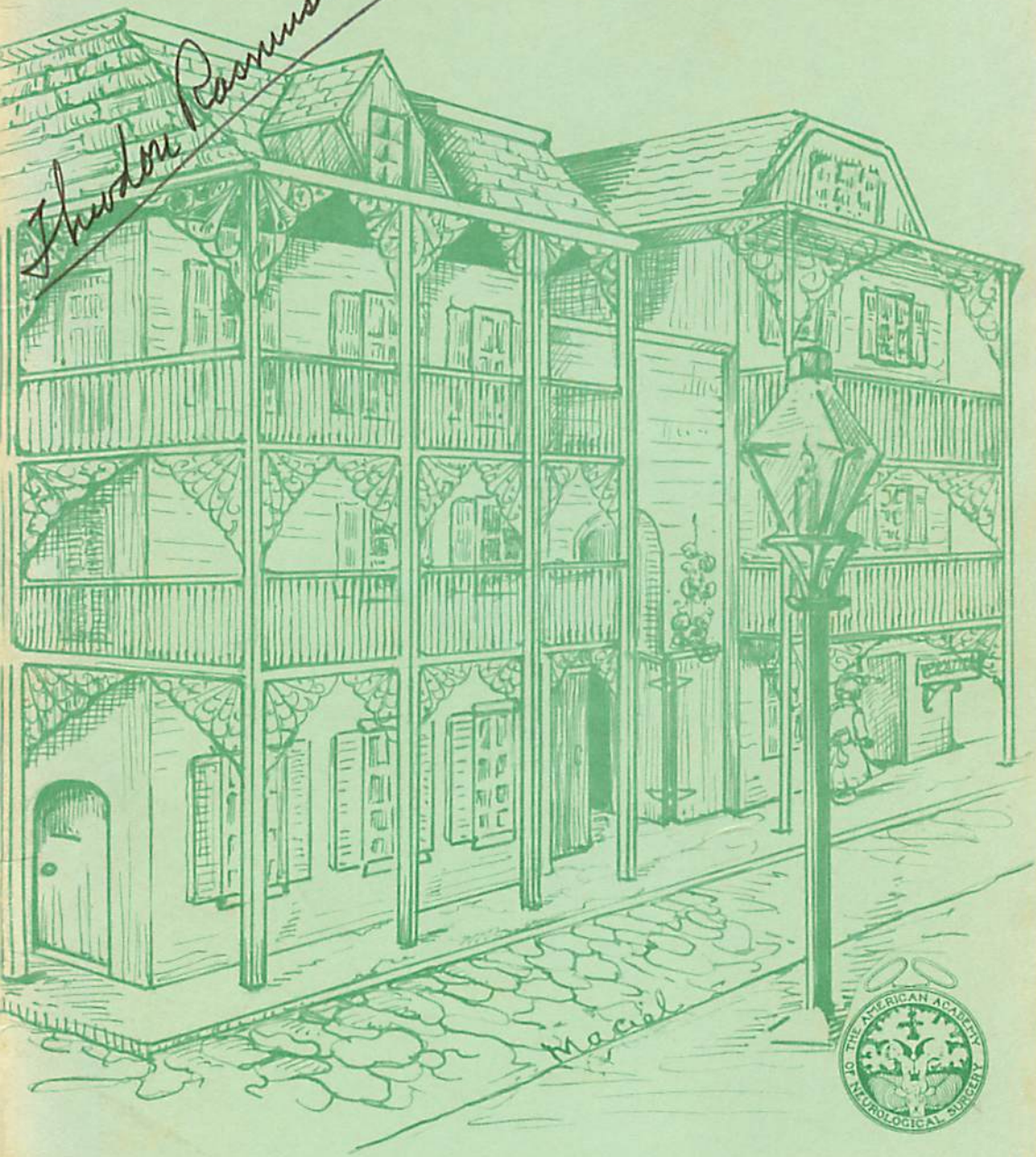
THE AMERICAN ACADEMY OF NEUROLOGICAL SURGERY

Theodore Rasmussen



TWENTY-THIRD ANNUAL MEETING
NEW ORLEANS, LOUISIANA
NOVEMBER 7-10, 1962

Royal Orleans Hotel

THE AMERICAN ACADEMY OF NEUROLOGICAL SURGERY

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ACADEMY MEETING

Wednesday, November 7.

	Registration, Academy Headquarters Suite.
Evening	Cocktail party.

Thursday, November 8.

8:30 A.M.	Registration
9:00 A.M.	Scientific Session
12:00 Noon	Presidential Address.
12:30 P.M.	Luncheon
2:00 P.M.	Scientific Session
5:00 P.M.	Executive Meeting
6:30	Cocktail party - Riveria Room - 6th floor

Friday, November 9.

9:00 A.M.	Scientific Session
1:00 P.M.	Executive Meeting

Saturday, November 10.

9:00 A.M.	Scientific Session

Galt$_2$ –

Hamby –

Murphey – 6 pt. (1 not cooled) – 2 of the 5 died – heart stopped. – rapid cooling + rewarming – bleeding after rewarming was the main problem – despite neutralization of the heparin –

Nofzinger – hemodilution induced ē Dextran – dehydration maintained for 24–48 hr. postop – no problems with electrolytes – acidosis resulted from inadequate perfusion of the muscle mass of the body –

Uihlein – cool pt to 30° before inducing deep hypothermia – about 30 min of circulatory arrest – closed chest technique: blood from both femoral veins is returned to 1 femoral artery – temps. fall not as steep as with open chest technique – mid oesophageal temp 12° gives brain surface temp. of 15° – aortic insufficiency is absolute contraindication to closed chest technique – operating time was 6–8 hr. for both open + closed chest techniques – mortality 28% for open chest + 22% for closed chest technique – used urea in 2/3 of the pts.

Drake – 8 cases – 2 deaths – principal complication was massive cerebral spasm –

Woodhall –

THURSDAY, NOVEMBER 8, 1962
8:30 A.M. – Registration at Academy Headquarters Suite
Morning Session

9:05

9:00 A.M.
1. ADVANTAGES OF 27° C. BODY HYPOTHERMIA, A CASE REPORT.

Eldon L. Foltz and Evan L. Frederickson, Seattle.

A number of authors have stated that 27-30° C. body hypothermia affords inadequate brain protection when cerebral artery occlusions are necessary in neurosurgical operations. Deep hypothermia (5-7° C.) has therefore been recommended. Certain of our own experiences with veno-venous shunt induced hypothermia (27° C.) in over sixty cases have supported this conclusion.

However, a patient with an intracranial aneurysm at the intracranial bifurcation of the internal carotid artery needed surgical treatment. Ligation of the cervical internal carotid artery by gradual occlusion clamp was attempted, but hemiplegia and coma ensued. Clinical and EEG recovery was prompt following emergency removal of the clamp. Three months later, progress studies showed progression of the aneurysm size. This time cervical carotid ligation was carried out under body hypothermia (27° C.), twenty-four hours duration. Her EEG and clinical status remained normal.

Certain conclusions may be inferred from this case which served as its own control. 27° C. body hypothermia is useful and gives adequate brain protection for artery occlusions when the bed irrigated by that occluded artery is not made totally ischemic by the occlusion. Permanent occlusions of such arteries under normothermic status may produce prompt or slightly delayed deficits. These can be avoided by temporary hypothermia (27° C.), presumably because of the protection afforded the brain while the collateral circulation recovers, or develops, to an adequate level.

9:15

9:10 A.M.
2. INTRACRANIAL SURGERY FOR ANEURYSM: THE EFFECT OF HYPOTHERMIA UPON SURVIVAL.

Wallace B. Hamby, Cleveland.

Separate consecutive series of 47 each, of patients having leaking aneurysms of the circle of Willis were operated upon intracranially by essentially the same group of surgeons in different time periods, one under hypothermia, the other at normal temperature. Data from the two series were analyzed and compared as to survival, according to a) vessel involved, b) time of operation after hemorrhage, c) clinical status gradation and 4) surgical technical variables.

The analysis indicates that in this series, operating under hypothermia conferred no protection.

Kerr – 50% of dogs die after brain temperatures of 8° C – a few with rectal temperatures of 25° C –NOTES–

Whitcomb – 3 yo craniostenosis – developed increased intracranial pressure – dilated rt. lateral ventricle – large left occipital apt – tumor arose from choroid plexus of lateral ventricle – 1 yr later there was mod. decrease in size of ventricles –

3 mo – slowly progressive hydrocephalus – temporal approach facilitates clipping feeding vessels –

Matson – 22 pt. – 5 had evidence of this 2 sided effect of CSF obstruction + increased production of CSF –

Alexander – 4 deaths in infants – due to using old blood (increased K) which was cold → ventricular fibrillation –

Woodhall – IV nitrogen mustard → 8th nerve degeneration – C14 labelled HN_2 localized in 8th nerve 30 times as much as in brain – good pain relief in 44 of 46 pt. – 1–14 months – injected into both temporal arteries or external carotid artery – position of catheter checked by injection of fluorescein + observing the area of fluorescence under Wood light – gave up methotrexate due to complications of bleeding + edema –

Baker – 29 pt. – 19 in 4th ventricle – 11 operated upon – 3 typical cases presented –

30 yo ♂ – headache + vomiting for 1 month – 2 cm tumor fell out of upper end of 4th ventricle –

34 yo ♂ – headache, vomiting + nystagmus for 6 mo – tumor arose from floor of 4th ventricle on a wide base –

9:30 A.M.

3. PROFOUND HYPOTHERMIA USING CLOSED CHEST EXTRA-CORPOREAL CIRCULATION.

Francis Murphey, John Nofzinger and Charles Ray, Memphis.

Description of apparatus used and discussion of metabolic and hematologic aspects of profound hypothermia.

9:50 A.M.

4. THE USE OF HYPOTHERMIA LESS THAN 15° CENTIGRADE FOR OPERATIONS ON INTRACRANIAL ANEURYSMS WITH THE AID OF OPEN AND CLOSED THORACIC PERFUSION.

Alfred Uihlein, Rochester, Minn.

We have operated upon ~~36~~ 40 intracranial vascular lesions with the aid of the open or closed thoracic perfusion technic with the naso-pharynegal thermistor temperature at an average of less than 15 degrees Centigrade during the definitive intracranial procedure and with periods of low flows or total circulatory arrest. Eighteen patients were operated upon with the open thorax perfusion technic and 18 with the closed thorax perfusion technic. The technic for the operative procedure will be briefly described and the results of our surgical endeavors analyzed. The advantages and disadvantages of each technic will also be outlined.

10:10 A.M.

DISCUSSION

10:30 A.M.

COFFEE BREAK

10:45 A.M.

5. THE JANUS EFFECT OF PAPILLOMA OF THE CHOROID.

Benjamin Whitcomb, Hartford.

This report concerns two cases of cysts in the occipital region associated with papillomas of the choroid. These huge cysts may be due secretion of the papilloma of the choroid which is giving a hydrocephalus on one hand and producing an intracerebral cyst on the other. Whether this cyst is a blocked off occipital horn of a ventricle as a result of a large papilloma or whether it is actually secretion of fluid from the tumor into the cerebral substance is a matter for conjecture.

11:00 A.M.

6. THE REACTION OF PERIPHERAL NERVE TISSUE TO MODERN ANTI-TUMOR AGENTS, WITH PARTICULAR REFERENCE TO RELIEF OF PAIN.

Barnes Woodhall, Durham.

biopsy, Torkildsen & X ray Rx — died 6 yrs. later of heart disease — ? secondary to central respiratory difficulty —

31 yr ♂ — menieres syndrome for 3 mo. — headache also — tumor filled 4th ventricle extending down to C2 — BP & pulse rose to 200 on removal of tumor — bilateral 10th + 12th paralysis — S.D. hemorrhage —

Greenwood — S.D. hemorrhage following brain stem head injury — good recovery after 2 laparotomies + 72 pints of blood —

Shelden —

Porter —
Hamlin —
French —

Kerr — 68 cats + 3 monkeys — anesthetized — BP, pulse & bladder pressures measured — 1 msec, 60/sec. 1-6 volts — microelectrodes for stimulation — positive responses lie in peripheral 1 mm of lateral third of cord circumference & in region of intermedio-lateral cell column of central gray matter — in cervical region most fibers lie between dentate & dorsal roots —

12:00 11:20 A.M.

7. SUBEPENDYMAL GLIOMAS OF THE FOURTH VENTRICLE.

George S. Baker, Rochester, Minn.

Tumors arising from the floor of the fourth ventricle present rather bizarre neurological findings until the mass obstructs the outflow of cerebrospinal fluid, or by gradual enlargement compresses the important nuclei located in this vital area. The neurosurgeon is faced with some important decisions at the time the tumor is identified, and the manner in which they are handled is a matter of life or death, or even a severe neurological deficit in the postoperative period. Our experience at the Mayo Clinic in 11 of these cases operated upon in the past ten years will supply the data for this presentation.

11:40 A.M.
DISCUSSION

12:20 **12:00 NOON**

8. PRESIDENTIAL ADDRESS

WAVE LENGTHS, RESONANCE, and NEUROSURGERY.

C. Hunter Shelden, Pasadena.

12:55

Afternoon Session

2:00 P.M.

9. NEURAL FACTORS IN THE ETIOLOGY OF CARDIAC DYSFUNCTION.

Robert W. Porter, Long Beach.

The importance of central neural mechanisms in the pathogenesis of some abnormal cardiac rhythms has been revealed experimentally in acute and chronic animal preparations. Investigation has shown that excitation of certain anterior brain stem and limbic lobe areas through direct electrical stimulation, by reflex stimulation through visceral afferent pathways, or by a combination of both, may induce such dysrhythmias as ventricular tachycardia and ventricular fibrillation. An unusual characteristic of stimulation of the ventral hippocampus was the fact that the threshold for cardiac abnormalities was markedly lowered for several hours following a short period of stimulation at low intensity which in itself had no overt effect. During this period of lowered threshold peripheral stimuli which normally had little effect upon the heart now induced severe abnormalities. It was also noted that the threshold for the induction of cardiac irregularities from hypothalamic and limbic sites was quite variable and was found to be intimately related to the functional status of the ascending reticular formation. An additional type of cardiac irregularity which resembled closely that reported to occur clinically with severe subarachnoid hemorrhage also could be experimentally induced.

2:20 P.M.

10. BRAIN STEM ELECTROSTIMULATION IN TRAUMATIC SUPPRESSION OF RETICULAR ACTIVATING SYSTEM.

Hannibal Hamlin, Providence.

Dysfunction of the reticular activating system (RAS) is the principal cause of loss of awareness in the usual type of closed head injury. Prolonged traumatic coma may be ameliorated by electrostimulation (EST) that delivers low amperage unidirectional current to the caudal brain stem through conventional bimastoid surface electrodes. The possible value of EST for alleviating suppression of RAS is derived from clinical trial and EEG evidence, which also serves to instigate a reanalysis of traumatic coma and its management.

2:40 P.M.

DISCUSSION

2:55 2:45 P.M.

11. EXPERIMENTAL OBSERVATIONS ON THE AUTONOMIC TRACTS IN THE SPINAL CORD.

Frederick W. L. Kerr, Rochester, Minn.

The location of fiber tracts in the spinal cord which mediate autonomic responses (vasoconstriction, piloerection, bladder and pupillary activity) is controversial. In this study, by employing stimulation techniques, the location of the corresponding pathways has been determined in the cat and in the monkey. Since the major portion of the tracts can be interrupted without significant impairment of other pathways, an anatomical study of the corresponding degeneration employing the Nauta Gyjax technique has been carried out.

3:15 3:00 P.M.

12. A CLINICAL AND EXPERIMENTAL (HISTOLOGICAL) APPRAISAL OF PHENOL-PANTOPAQUE IN THE TREATMENT OF PAIN AND SPASTICITY.

Herbert Lourie, Prabhundha Vanasupa, and William Stewart, Syracuse.

Sixty intraspinal phenol-pantopaque injections were performed in thirty patients suffering either from intractable pain or severe spasticity. Our observations indicate that 1:15 phenol-pantopaque was safe but would afford only fair relief of pain (7 of 10 injections). Stronger solutions (1:10) were unsafe except in treating perineal pain in patients who already had "ileal conduit" and colostomy. 1:10 concentrations gave fair to good relief in 6 of 9 patients. 17 of 19 patients treated with 1:20 concentration had no relief or suffered early recurrence of their pain. During the period of pain relief, no sensory loss could be demonstrated.

12. Continued

Spasticity of total paraplegia could be relieved with strong (1:15 and 1:10) solutions, but the clonus and spasticity of paraparesis was only briefly ameliorated with weaker (1:15 and 1:20) solutions. Stronger solutions could relieve these symptoms only by increasing the existing motor and sensory loss.

An explanation for the unpredictable clinical results with phenol-pantopaque was found by studying the patterns of degeneration in the roots and cord of cats injected subarachnoid with various concentrations of phenol-pantopaque. It was found that 1:10, 1:15 and 1:20 concentrations all worked in a qualitatively similar manner. The degeneration was not limited to small fibers, but rather there was an indiscriminate pattern of degeneration of all size fibers. In any root there could be found degenerated fibers of all sizes intermingled with intact fibers of all sizes. Degeneration was greatest at the periphery of the roots and was proportional to the strength of the injectate employed. The surviving small fiber population would account for the recurrence of pain and spasticity in our patients.

3:20 P.M.
DISCUSSION

3:45

3:30 P.M.
COFFEE BREAK

4:00

3:45 P.M.
13. EPILEPSY DUE TO GROSS DESTRUCTIVE BRAIN LESIONS: RESULTS OF SURGICAL THERAPY.

Theodore B. Rasmussen, Montreal.

Eighty-six patients with seizures due to gross destructive lesions involving more than one lobe of the brain have been operated upon at the Montreal Neurological Institute prior to January 1, 1961. There were 2 postoperative deaths and inadequate data in 1 patient. Eighty-three patients have been followed for periods ranging from 1 to 24 years with a median follow-up period of 6 years. Thirty-eight (45%) have become seizure-free and an additional 23 patients (28%) have shown a marked reduction in seizure tendency. Twenty-two (27%) have had a less marked reduction in seizure tendency and are classified as unsatisfactory results.

Forty-eight of these 83 patients were operated upon during the past decade. Twenty-three (48%) have become seizure-free and 14 (29%) have had a marked reduction in seizure tendency. Eight patients (17%) had unsatisfactory results.

In 16 of the 86 patients the entire cerebral hemisphere was removed. One of these patients died 2 months after operation. Complete follow-up data are available in the remaining 15. Ten patients (66%) have had no attacks since leaving the hospital and 4 patients (27%) have shown a marked reduction in seizure tendency. One patient (7%) had only a slight reduction in seizure tendency.

McLaurin –

–NOTES–

Ford – dogs –
1. factors necessary for formation –

4:15 4:00 P.M.

14. CAUSES OF FAILURE IN TREATMENT OF EXTRADURAL HEMATOMA.

Robert L. McLaurin, Cincinnati.

Forty-seven cases of proven extradural hematoma have been reviewed to ascertain the causes of failure of treatment. Of the 47 cases, 14 died and 5 others required custodial care; this results in a total of 40% failure to achieve satisfactory results.

The most frequent cause for failure is concomitant brain injury. Twenty-two patients had associated cerebral injury with a mortality rate of 50% and a morbidity rate of 55%. Of 8 patients with severe associated brain injury the mortality was 87%.

Excluding patients who had associated severe brain damage, and those who arrived at the hospital in extremis, there were 7 patients who, in retrospect, should have been satisfactory results but who died or became custodial patients. These cases are considered in detail and serve to illustrate errors in management. The principal causes of failure are: 1) failure to observe neurologic deterioration during the period shortly after admission, 2) lapse of excessive time between observation of deterioration and achievement of hematoma evacuation, and 3) failure to recognize recurrent extradural hematoma formation.

4:30 4:15 P.M.

15. ACADEMY AWARD PRESENTATION

MECHANISMS OF EXTRADURAL HEMATOMA.

Lowell E. Ford, University of Cincinnati College of Medicine, Cincinnati.

5:00 5:00 P.M.

EXECUTIVE MEETING

Matson - 38%, failures in Am Bd. exams this year - average failure rate over past 10 yr is 31% - 1015 certificates total - 28 deceased - 10 of present 12 members of Bd. are Academy members -

Snodgrass – 45 cases – much fever during past 2 years –

Welch – 1 microliter per mgm/min venous blood flow in choroid plexus of rabbit –

9:00 A.M.

16. EPENDYMAL RESPONSE TO INTRAVENTRICULAR CONTRAST MEDIA.

William F. Meacham and Sidney Tolchin, Nashville.

The effect of intraventricular contrast media for contrast ventriculography has been studied in the experimental animal over periods ranging from a few hours to several months. Histological study of the ependymal response in the normal as well as in the hydrocephalic animal was carried out.

9:15

9:15 A.M.

17. VISUALIZATION OF THE THIRD AND FOURTH VENTRICLES BY POSITIVE CONTRAST VENTRICULOGRAPHY.

Samuel R. Snodgrass and McClure Wilson, Galveston.

A method for visualizing the third ventricle, aqueduct of Sylvius, and the fourth ventricle with Pantopaque is described. The procedure has proved of definite value in some cases of lesions around the third ventricle and in the cerebellum. Its greatest value is in demonstrating lesions in the region of the midbrain and pons. Unequivocal localization of neoplasms involving the pons or mesencephalon has helped us to avoid unnecessary negative operations and has established the need for other therapeutic measures. Positive contrast ventriculography has been used only when gas studies failed to provide the necessary information.

9:35

9:30 A.M.

18. CARRIER TRANSPORT OF GUANIDINE BY THE CHOROID PLEXUS.

Keasley Welch, Denver.

The paper recounts studies of the accumulation of guanidine within excised, surviving choroid plexus of the rat and of its transcellular transport from a bathing solution into the venous blood of the plexus of the living rabbit.

In vitro, guanidine is accumulated unchanged in the plexus against a gradient of concentration. The accumulation exhibits saturation kinetics with a high maximum transport rate and a low affinity between the base and carrier. Several other organic bases competitively inhibit the transport.

The transcellular transport into the venous blood of the plexus exhibits features which are, to date, difficult to interpret.

Baldwin -

Pool -

9:45 A.M.

19. CEREBRAL DEPOSITION OF DRUGS AT LOW TEMPERATURES.

Maitland Baldwin, M.D., Robert Farrier, M.D., Frances MacDonald, R.N. and A. K. Ommaya, F.R.C.S., Bethesda.

According to recent observations, there is a relationship between cerebral temperature and permeability. At low temperatures, the cerebral reaction to sodium fluorescein is extraordinary. The dye stains the extravascular tissues as the brain temperature ranges and remains below 20 - 23° C. Within these limits, there is a thermal frontier beyond which permeability increases and electrical activity decreases.

Perhaps this cerebral permeability is such that drugs can be deposited in extraordinary amounts within the brain substance at low temperatures? In an effort to answer this question and test its basic assumptions, a series of experiments has been designed in which animals were subjected to regional or topical cooling so as to produce brain temperatures 20°. Once obtained, these temperatures were maintained for at least 30 minutes and then drugs were given by vein. Three drugs were empirically selected for intravenous administration. Dilantin, curare, and staphcillin were chosen because of differences in chemical configuration and pharmacological application. Dilantin and curare were labeled with C^{14} and given in doses comparable to therapeutic levels in the human. The specific activity was calculated and the quantity of the drug in the brain specimens at autopsy estimated in a Packard counter, using tissue homogenates from samples of known weight. Blood samples were also taken for estimation of drug levels. The staphcillin specimens were subjected to bio-assay and blood samples were also taken from these animals. In some cases, fluorescein was injected by vein and then the brain specimen was examined under Wood's lamp. Every effort was made to assure adequate ventilation and circulatory support of the animal during cooling. In some cases, electrographic observations were made, and a significant number of animals were subjected to intravenous administration of various drugs at brain and body temperatures higher than those considered relevant to changes in cerebral permeability.

The levels of drug depositions observed at various temperatures will be reported, with some attention to regional dispersion within the brain. The relationship between these levels and those expected at normal temperatures, as well as relevant electrographic findings are discussed.

10:00 A.M.
DISCUSSION

10:10

10:20 A.M.

20. EXCISION OF ARTERIOVENOUS MALFORMATION (AVM) OF ENTIRE CEREBELLAR HEMISPHERE.

J. Lawrence Pool, New York City.

Scoville –

Matson –

Fisher – hyperventilation prevented the rise in CSF pressure ~~that~~ otherwise follows 1-1½ hr after closed head injury in the dog –

20. Continued

With multiple sclerosis as a diagnosis, this girl of nineteen suffered progressive right ataxia and cranial nerve signs for seven years until seen by Doctor A. J. Berman of New York whose angiography showed of AVM of the right cerebellar hemisphere, fed largely by a dilated superior cerebellar artery. On admission to the Neurological Instute of New York the AVM was removed as shown in operative photographs, by first clipping this artery through a sub-temporal tic approach and then resecting the entire cerebellar hemisphere via a paramedian incision for suboccipital exposure. Continual ventricular drainage was necessary for two weeks. The patient is now home, improved.

10:30 A.M.

10:25 21. SIMPLIFIED SURGICAL APPROACH TO CRANIOSTENOSIS.

William B. Scoville, Hartford.

Present methods by Matson and others have now proved themselves of therapeutic benefit. Modifications of the original technique have continued but the length of time and epidural bleeding incurred still necessitate 2 stage procedures and such artificial suture formations still remain open a comparatively short number of years. The writer presents further modifications permitting 1 stage operations and benefits of longer duration. Such modifications include the procedure done in upright position with bilateral furrow formation and the wrapping of the central bridge of bone with plastic film. The results include a wider area of bone covered with plastic film thus preventing the formation of new bone bridging, as well as a saving of time and bleeding; thus permitting 3 sets of artificial suture furrows to be made at one setting.

10:45 A.M.
DISCUSSION

10:45 11:00 A.M.
COFFEE BREAK

11:25 11:15 A.M.

22. STUDIES OF THE ACID-BASE BALANCE OF THE SPINAL FLUID WITH PARTICULAR REGARD TO HYPERVENTILATION TECHNIQUES IN CEREBRAL INJURY.

Robert G. Fisher and A. P. McLaughlin, III, Hanover.

Basic studies on the acid-base balance of the spinal fluid and arterial blood will be presented. Cerebral injury is known to cause a state of acidosis with increase CO_2 tension in the spinal fluid. This mechanism is not known.

Closed head injuries were inflicted on a series of dogs. It was noticed that there was decrease in cerebral blood flow and 1½ hours after sustaining the injury there was a consistent rise in cerebrospinal fluid pressure which was aggravated greatly by increased CO_2 inhalation but not relieved by hyperventilation. If hyperventilation were applied prior to this rise in cerebrospinal fluid pressure, no secondary rise occurred. Application to man has not been instituted as yet.

Hayes – 26 pt. – 3 had recurrence of signs + symptoms –

–NOTES–

Alcock –

Feindel –

Greenwood – removal of injected areas resulting from accompanied surgery may convert an impending fatality into a reasonably successful result –

11:40

11:30 A.M.

23. EXTERNAL CAROTID - CAVERNOUS SINUS FISTULAS.

George J. Hayes, Washington, D. C. Walter Reed Hosp

One reason for the "perplexing surgical problem" of persistence of signs and symptoms after an adequate "trapping" procedure of a carotid-cavernous fistula has been carried out is offered. Three patients are discussed. Angiography demonstrated direct fistulous communication between branches of the external carotid system to the cavernous sinus in all three.

In addition, another shunt analogous to that occurring between the internal maxillary and ophthalmic arteries is postulated.

11:45 A.M.
DISCUSSION

12:05

12:00 NOON

24. POSTOPERATIVE ANGIOGRAPHY IN RUPTURED CEREBRAL ANEURYSM.

C. G. Drake and J. M. Allcock, London, Ontario. → radiologist

The aim of surgical treatment of ruptured intracranial aneurysm has been the obliteration of the sac. Postoperative angiography should be the basis for the accurate assessment of the results.

The records of 60 patients have been reviewed. There were no complications as a result of the procedure. A significant portion of the aneurysm, potentially dangerous, was patent in 5 cases where the operation had been considered technically successful.

In 16 cases the angiogram was performed because the patient was in postoperative difficulty. Three showed evidence of a fresh hematoma and in 4 a major vessel had been occluded. Of most importance, it was found that postoperative arterial spasm of major vessels accounted for catastrophic sequelae in 11 patients.

12:30

12:15 P.M.

25. SURGICAL PATHOLOGY OF INFARCTION RESULTING FROM CAROTID THROMBOSIS.

William Feindel, Montreal.

This report presents the findings in a patient who developed a post-traumatic occlusion of the internal carotid artery and intractable seizures. At craniotomy the parietal region showed extensive infarction. A striking feature was the presence of red arterial blood in the veins draining this area. The gross and microscopic appearance of the scar, the appearance of the leptomeningeal vessels, and the results of electrical stimulation and electro-corticography will be described.

Schatz – 210 cases studied – 60 in brain clinic & posterior fossa – 150 supratentorial cases, 32 small unidentified autopsy findings –

118 clinical cases – 38 sudden deaths –

80 cases c observation & symptoms – 9 died – 46 unsatisfactory course

29 operated

42 unoperated – 2 died of other causes –

151 supratentorial cases – 74 unsatisfactory course –

92 cases c angio diagnosis

39 surgical

53 conservative Rx – 22 unsatisfactory course

31 unchanged

9 worse

9 subsequent op – due to hem in 6 " " deterioration in 2

4 died

41 cases operated – 1 death –

27 urgent, due to pressure –

14 elective

12:55 12:30 P.M.

26. THE NATURAL HISTORY OF ARTERIOVENOUS MALFORMATIONS.

S. W. Schatz, W. M. Lougheed, and E. H. Botterell, Toronto.

One hundred and fifty (150) supratentorial arteriovenous malformations have been verified by angiogram, operation and autopsy during the past 15-year period at the Toronto General Hospital. For the clinically significant lesions as we could study them, death, severe disability or urgent surgical intervention have shown the natural history to be unsatisfactory in half the patients. The natural history was interrupted in several of the remainder by elective surgical procedures. In a specific review of those angiographically diagnosed cases treated initially by conservative measures and followed up to fourteen years, a similar proportion of bad results has been observed. The surgical procedures employed for the urgent or elective treatment of these patients have been analyzed with respect to their indications and results. The subsequent courses of the surgical patients have been considered in the light of the natural history demonstrated for the untreated lesions.

1:00 P.M.

EXECUTIVE MEETING.

9:00 A.M.

27. THE NEUROSURGICAL EVALUATION OF THE CHIASMAL SYNDROMES.

A. Earl Walker, Baltimore

The diagnostic procedures which the neurosurgeon may offer the ophthalmologist for the establishment of a diagnosis in the case of parasellar lesions are discussed in terms of their applicability and limitations.

Electroencephalography, roentgenology, both with and without contrast media (angiography and pneumoencephalography) and isotopic scanning have an important role in the diagnostic study of such cases.

The characteristic findings of each of these special techniques for the common sellar lesions – pituitary adenoma, sellar meningiomas, craniopharyngioma, glioma of the optic chiasm and aneuryms are discussed.

A series of 50 cases suspected of having a space occupying lesion in or about the sella turcica is analyzed.

9:15 A.M.

28. NASAL GLIOMA.

H. G. Schwartz, St. Louis.

9:30 A.M.

29. SURGICAL TECHNIQUE, INTRAMEDULLARY CORD TUMOR AND TRIGEMINAL GANGLION SURGERY, WITH PARTICULAR REFERENCE TO TWO-POINT COAGULATION TECHNIQUE.

James Greenwood, Jr., Houston.

The original description of intramedullary tumor surgery technique was reported in 1954 in a three-dimension movie. This presentation in 16 mm. movie illustrates the use of two-point coagulation technique in intramedullary cord tumor removal, showing the use of the miniature two-point coagulation forceps in surgery on the cord itself. The use of the forceps is also well illustrated in the trigeminal ganglion surgery in a moderately vascular case where differential section of the trigeminal root is carried out.

9:45 A.M.

30. NEUROSURGICAL OPERATIVE INFECTIONS. A SEVENTEEN YEAR SURVEY OF THE USE OF ULTRA-VIOLET RADIATION.

Guy L. Odom, Deryl Hart, Paul Johnson, Wirt Smith and Ivan Brown, Durham.

Ultra-violet radiation has been used in the operating room of Duke Hospital since 1936 and has definitely proven beneficial in decreasing the bacterial count in the operating room and the number of operative infections. A recent review of the neurosurgical operations revealed that there were seven infections in 907 clean laminectomies and six infections in 2111 clean craniotomies. Twelve additional infections were encountered in cases that were reopened or drained. The overall operative infection in laminectomies and craniotomies, including those that were reopened, aspirated or drained, was 0.76 per cent.

10:00 A.M.
DISCUSSION

10:15 A.M.
COFFEE BREAK

10:45 A.M.
31. CRANIOPHARYNGIOMA.

Donald D. Matson, Boston.

In the period since steroid replacement therapy has been available 31 patients have been operated upon for removal of craniopharyngioma. Improved operative and supportive management has made possible study of a particularly interesting group of children in whom either total or sub-total excision of the lesion has been accomplished. The techniques and results of radical surgical treatment in children, and the management of the chronic endocrine and metabolic disorders which accompany this type of surgery are discussed.

11:00 A.M.
32. TRIGEMINAL TRACTOTOMY: APPROBATIVE ANALYSIS.

Harvey Chenault, Lexington.

This presentation is prompted by a reluctance to see a splendid surgical procedure pass into disuse apparently due to unsupported criticism. Classic differential root section of Spiller-Frazier remains the proper operation for the majority of the patients with tic doloreux or major trigeminal neuralgia. The introduction in 1937 of intramedullary trigeminal tractotomy by Sjoqvist, to date the least empiric of all surgical procedures, offered great hope for the relief of trigeminal neuralgia without complete anesthesia, and for avoidance of other complications. Initially, much attention was focused on this procedure but in recent years, it appears to have received very little.

Review of the literature and personal case material shows that the modified trigeminal tractotomy has not presented the surgical hazard initially feared for it, and that it compares favorably with temporal rhizotomy in safety and favorably with suboccipital rhizotomy and decompression-compression operation in recurrence rate.

Neurologic complications of the originally placed incision are completely avoided by the modified placement of section at or below the lower end of the fourth ventricle. Certain situations very clearly and exclusively indicate trigeminal tractotomy. The anatomy and surgical technique will be briefly discussed.

11:15 A.M.

33. THE DIAGNOSIS OF COLLOID CYST OF THE THIRD VENTRICLE BY ARTERIOGRAPHY.

J. M. Meredith, Richmond.

Although for many decades third ventricular cysts have been localized usually very well by ventriculography, we have recently noted one or two findings in the venogram phase of the carotid arteriogram which may help identify at an *earlier* time the development of this lesion, leading to air injection in cases in which it might not be done with disastrous results. This paper is essentially a case report of a nineteen year old colored woman in which these findings were demonstrated. So-called "negative" arteriograms in a patient with complaints of headache may lull the clinician into an unwarranted sense of security. A careful look at the venogram phase may indicate insignificant findings around the foramen of Monro which would lead to ventriculography and salvage of a case that might otherwise be lost.

In our patient when the venogram phase was carefully studied an additional abnormality was clearly evident. It related particularly to the position and configuration of the venous angle and its relation to the posterior margin of the foramen of Monro. The diagnostic aid stressed in this paper may result in detection of these cysts prior to the development of full-blown hydrocephalus. It is not, however, the intent of this paper to discuss the staging or revisions in surgical technique necessary when contending with a colloid cyst before the development of significant hydrocephalus. It would appear that in these cases rather specifically the internal cerebral vein is projected forward and downward ahead of the cyst. It is not known whether this is an entirely reliable test in large numbers of cases, as yet; however, when they do occur they are certain enough to suggest this diagnosis, making it mandatory to obtain definitive air studies promptly, and therefore proceed with the indicated surgical treatment as soon as possible.

Academy Award

The high quality of papers presented for consideration for the Academy Award for 1962 prompts the Committee to name the following manuscripts for honorable mention, in addition to the prize winning paper listed elsewhere:

"CEREBROVASCULAR OCCLUSION IN AMBULATORY ANESTHETIZED DOG; CORRELATION OF ELECTROCEREBRAL AND NEUROLOGICAL CHANGES" – *Lyndon U. Anthony, Barnes Hospital and Washington University School of Medicine, St. Louis, Missouri.*

"CHANGES IN BRAIN TISSUE pH AND ONCOTIC PRESSURE IN EXPERIMENTAL CEREBRAL EDEMA" – *Elliott Blinderman, University of California at Los Angeles, California.*

"THE DETERMINATION OF INDIVIDUAL PROGNOSIS IN ANEURYSMS OF THE ANTERIOR COMMUNICATING ARTERY" – *John A. Jane, Duke University, Durham, North Carolina.*

"EFFECTS ON CELL GROWTH BY A SERUM FRACTION FROM PATIENTS WITH CENTRAL NERVOUS SYSTEM NEOPLASMS" – *Robert H. Wilkins, National Institute of Health, Surgery Branch, National Cancer Institute, Bethesda, Maryland.*

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1962

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The Palmer House, Chicago, Illinois	October 16-17, 1942
Hart Hotel, Battle Creek, Michigan.	September 17-18, 1943
Ashford General Hospital, White Sulphur Springs, West Virginia	September 7-9, 1944
The Homestead, Hot Springs, Virginia.	September 9-11, 1946
Broadmoor Hotel, Colorado Springs, Colorado.	October 9-11, 1947
Windsor Hotel, Montreal, Canada	September 20-28, 1948
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Mayo Clinic, Rochester, Minnesota	September 28-30, 1950
Shamrock Hotel, Houston, Texas	October 4-6, 1951
Waldorf Astoria Hotel, New York City . . .	September 29-October 1, 1952
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Broadmoor Hotel, Colorado Springs, Colorado	October 21-23, 1954
The Homestead, Hot Springs, Virginia.	October 27-29, 1955
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The Cloister, Sea Island, Georgia.	November 11-13, 1957
The Royal York Hotel, Toronto, Ontario	November 6-8, 1958
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Hotel Sheraton Plaza, Boston, Massachusetts	October 5-8, 1960

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