Polio 1947

[redacted]

[redacted]

Buffalo. N.Y.

Punch for note-book

CHILDREN'S HOSPITAL

219 BRYANT STREET

BUFFALO 9, N. Y.

November 28, 1947

Dr. Albert Sabin
Cincinnatti Children's Hospital
Cincinnatti, Ohio

Dear Dr. Sabin:

This is a summary of the case o[redacted]w a patient on our Isolation Service, who you saw when you were in Buffalo, and whose three day stool specimen we sent to you earlier in the week.

Admitted: 11/15/47 Age: 1 year
Past History: Diphtheria-Tetanus toxoid shot in right arm two weeks before admission

Present Illness: 11/9/47 cough, fever
11/11/47 vomitted once, fever, diagnosis of bronchitis made by local doctor. Fever ceased that day,
11/14/47 Mother noticed that the child was not using his right arm, but that the fingers moved.
11/15/47 Admitted to B.C.H. Polio cases from same residential area as patient reported.

Physical Exam: Pharynx - moderately injected.
Neuro-Muscular - Paralysis, flaccid of the right arm , with motion of the fingers preserved and motion at the shoulder joint partially present , but inability to move against any slight resistance. No other findings.
11/16/47 after L.P. stiff neck and spine with hamstring spasm on the left.
11/18/47 no stiffness of neck or back, but weakness of lower extremities. Right arm the same.
11/20/47 Seen by Dr. Sabin - Weakness of lower extremeties although all reflexes present equally bilaterally. The arm, right showed marked weakness with absence of biceps and triceps reflexes, but with some power preserved in the suppinators, flexors, and deltoid muscles. Fingers can be moved by child with some strength.
11/21/47 Stool collection started.
11/28/47 Status has been the same throughout the hospital stay. The child has been afebrile, taking fluids and infant diet adequately and been treated with Kenny packs to arm and legs since 11/20/47: packs to arm alone since 11/17/47. Arm still shows same degree of paresis as do the legs, as on 11/20/47.

Laboratory: L.P. on 11/15/47 showed 42 WBC/cu.mm., 100% were lymphocytes, Glucose - 48mg%, Protein - 41mg%. Culture - sterile.

I believe that these are the essential data of positive nature that we found. Thank you very much for your interest in the case.

Yours truly,
Charles L. Mache
Charles L. Mache, M.D.
Intern

December 1, 1947

Dr. Charles L. Mache
Children's Hospital
219 Bryant Street
Buffalo 9, New York

Dear Dr. Mache:

Many thanks for the history on your patient, [redacted]. Should you be able to contact the patient's private physician who administered the diphtheria-tetanus toxoid, I would appreciate it very much if the information he may give you could be forwarded to me.

The information that would be especially worthwhile is as follows:

(1) Precise date of inoculation

(2) Dose and type of diphtheria-tetanus toxoid used, including name of manufacturer, and preservatives

(3) Number of other patients to whom the same lot of toxoid was administered and indication as to whether unusual reactions were observed

As I informed Dr. Spragins in a recent letter, I hope to inoculate monkeys with the stools of this patient within about a week, and we will let you know in due time whether or not poliomyelitis virus was recovered.

With many thanks,

Sincerely yours,

Albert B. Sabin, M.D.

[redacted]

LABORATORY DATA: continued

NP Culture: 11-15-47 Pneumococci and staph aureus.
12-16-47 Staph aureus.
1-4-48 Many hemolytic strep.

Spinal Fluid Culture: Negative on 11-15-47.

Ear Drainage Culture: 1-10-48 Staph aureus hemolyticus
Coagulation test negative.

Right ear culture: 1-30-48 B. pyocyaneus overgrowing
Gr. positive cocci.
1-23-48 No growth. Final: H. Influenzae
type 1.

Serology negative.

X-RAY EXAMINATION:12-6-47

Slight increase in the linear markings of the chest particularly at the right base. No foreign body.
12-27-47 X-ray for foreign body negative.
1-5-48 Slight degree of bronchitis, the markings are somewhat increased.
1-11-48 X-ray examination of the mastoids:
There is very little cellular development on either side. There is, however some pneumotization. The two sides appear symmetrical and equal.
1-23-48 There is no change in the mastoids. The two sides are symmetrical. We see no breakdown.
2-2-48 There is apparent bony breakdown in the right mastoid at this time, which we have not been able to visualize on earlier exams.
2-12-48 The left mastoid is clear. The right mastoid shows again the bony breakdown. There is some density over the entire mastoid area with marked increase in density in the region of the antrum in the mastoid tip.

COURSE AND TREATMENT:

The child was quite irritable on admission and a lumber puncture was down, which showed clear fluid, but 40 cells. The neck became quite stiff and there was quite a good deal of ham-string spasm shortly after the lumber puncture was performed. This disappeared by the next day and the child continued to act irritable and refused to use the right arm. There was a good deal of paresis in the arm muscles. However, the fingers were not paralysed to a great degree The child's early course in the hospital was afebrile. He was treated with Kenny packs to the region of the right arm and to the region of the legs. The child was seen by Dr. Albert Sabin of Cincinnati , who pointed out that there was a weakness of both lower extremities, which showed hypotonia. The arm, he said also was quite paralytic. A three day stool specimen was collected, frozen, and sent to Dr. Sabin for analysis for the poliomyelitis virus. The analysis came back with a result of being negative for the polio virus. On 11-4-47 the child was transferred to the medical floor from the isolation building. Except for the weak right arm he appeared to be well. He was taking his diet well and was afebrile. He was being seen regularly by the physiotherapy department for muscle grading

#12 Name [redacted] m-w-1yr Birth [redacted] Admitted 11-15-47 Discharged 2-18-48

PAST HISTORY:
Non-contributory.

FAMILY HISTORY:
Non-contributory.

PRESENT ILLNESS:
Three weeks before admission the child received a diphtheria tetanus toxoid injection in the right arm. Six days before admission the child began to cough. This cough continued for two days. The child was then seen by a doctor after one episode of vomiting. At this time a diagnosis of bronchitis was made. The cough continued, but the child was eating well. The fever subsided. The day before admission however, the mother noticed that the child was not using the right arm, although he could move his fingers. His shoulder seemed to be painful. The weakness persisted until admission. There have been several recent cases of polio in the same vicinity as in which the patient lives.

PHYSICAL EXAMINETION:
General Appearance: A well-developed, well-nourished, white male, who does not appear acutely ill. Temperature 99.8°.
Head: Fontanelle closed.
Neck: No stiffness.
Throat: Moderate injection. Tonsillar pillars of the pharynx on the left.
Extremities: Marked paresis of the right arm with absent tendon reflexes on this side. The child can move the arm somewhat and can use the fingers pretty well. The arm cannot be moved against resistance and the fingers do not function toowell against resistance. The lower extremities seem weak and have a partial paresis of the muscles. The abdominal reflexes are absent. The biceps and triceps tendon reflexes are active on the left. The knee jerks and ankle jerks are active bilaterally of the lower extremities.

LABORATORY DATA:
Urine: Entirely negative.
Blood Count: Hemoglobin ranging from 11.6 to 12.5 grams; WBC on admission 13,000, Fil. 28%, Bands 10%, L. 62%, RBC show no hypochromia. On 1-15-48 WBC 16,650, Fil. 65%, Bands 9%, L. 24%, B. 1%, Mono. 1%.
Spinal Fluid: 11-15-47 Clear, WBC 42, L. 100%, Gluc. 48%, T.P. 41mg%.
1-15-48 Clear, WBC 2, RBC-0, Gluc. 48%, T.P. 58 mg%.

Throat Culture: 11-15-47 Micrococcus catarrhalis and pneumococci.
12-4-47 Pneumococci and staph aureus.
1-4-48 Many hemolytic strep.
1-15-48 B. coli.

[redacted]

COURSE AND TREATMENT: CONTINUED

Exercise. Gradually the power of the right arm seemed to be returning. On 12-6-47 the child developed a mild infection of the upper respiratory tract, as well as a mild myringitis, which apparently disappeared. On the 3rd of January, 1948 the child's febrile course started. He spiked a temperature to 102° on this day and it went up to 103° on the 4th of January, 102° on the 5th of January, down to normal on the 6th of January, back up to 102° on the 9th of January, and was 102° on the 10th of January. After this it was normal. The left ear showed slight inflammation with a diffuse slight reflex. The right ear also showed a diffuse slight reflex, the land marks were present however. The throat was slightly inflamed. On the 4th of January the child was reported to have a red throat. A chest x-ray was recommended, which showed only bronchitis. On the 10th of January, it was noted that there was a discharge from the right ear as well as a cough, fever, and runny nose. The nose showed congestion and a mucoid purulent discharge. The pharynx was injected and red. The right drum was quite thickened and there was a perforation in the lower quadrant. There was exudating serous fluid. The left drum was injected along Schrapnel's membrane, but no bulging was noted. The child was placed on penicillin, 30,000 units q.3.h. and this was continued until the 21st of January. In the meantime it was noted that the child was using his right arm and the fingers of the right hand, although they showed some weakness he could raise the arm actively, but could not move it very well against resistance. He favored his left hand, but could move the fingers of the right hand and hold things with the right hand, but they were weaker then the fingers of the left hand. The right ear drum stopped draining the by 15th of January and the drum appeared thick, although no bulging was apparent. On the 18th of January the child's temperature went to 102° again, and the drum of the right ear showed bulging of the superior posterior quadrant. The left ear was clear. On the 23rd of January a myringotomy was performed and a large amount of mucoid yellow secretions were obtained. The child ran an afebrile course for a week. The draining did not stop until the 3rd of February and at this time it was noted that there was a breakdown in the right mastoid by x-ray. After the myringotomy of 1-23-48 the ear showed improvement by the 28th of January, but on the 30th the drum showed bulging again and another myringotomy was performed. On the 15th of February the right drum again showed bulging. This however, subsided in a period of two days. The last x-ray on February 12, 1948 still showed bony breakdown. However, since the bulging of the ear subsided in a period of two days it was decided that surgical proceduse would not be needed and that a conservative course of close observation would be carried out. The child had been carried on penicillin on the 31st of January and February 1st, but when the culture came back pyocyaneus streptomycin was started and continued until the 6th of February. Both the penicillin and streptomycin were discontinued. The rest of

[redacted]

COURSE AND TREATMENT: continued

child's course in the hospital was an afebrile one. He looked much better, much more cheerful, smiled, played. The lower extremity weakness had apparently completely subsided. The child would stand aside the crib with help and with support would even walk. The right arm was used by him, although ~~as~~ not as much as the left. It was slightly weaker than the left arm. The fingers could be used to hold objects, but did not show ~~as~~ much strength when resistance was offered to them. The child had been followed by the physiotherapy department with passive and active muscle exercises.

CONDITION ON DISCHARGE:

Improved.

RECOMMENDATION:

To be given the benefit of physiotherapy treatment to the right arm, so as to develop more active movement of the fingers. To have frequent observations of the condition of the right ear drum and check-ups on the right mastoid by x-ray.

DISPOSITION:

To the care of Ear, Nose, and Throat Department, OPD, and Orthropedic's Out-Patient Department.

FINAL DIAGNOSIS:

Poliomyelitis, acute
Otitis media, purulent, acute-right side.
Right mastoiditis.
Negative tuberculin.

Summarized from the record

Charles L. Mache, M.D.

Ediph:bg
cc: Dr. Jacobsen
Dr. Marchand
Dr. Mache

DEC 1 1947 [redacted] (BUFFALO)

Stools Only -

Anit Solid Present	=	105 gms.
Fluid present	=	150 cc.
Water (Dist.) Added	=	830 cc.

Blended at low speed for one minute.

For Centrifugation	±	300 cc.
For Refrezing	±	300 cc. (in 2 cartons; in cold vaccine box)
Discarded	±	400 cc. 12-16-47

Discarded

First Supernatant	=	200 cc.
Ether Added	=	40 cc.
Sediment (Untreated)	=	40 cc. (For Intranasal Use)

12/2/47. - Final Amount of Treated Stool Suspension =

Cult: (Prior to Final Centrifugation) — ✓✓✓

(After Final Centrifugation) — ✓✓✓

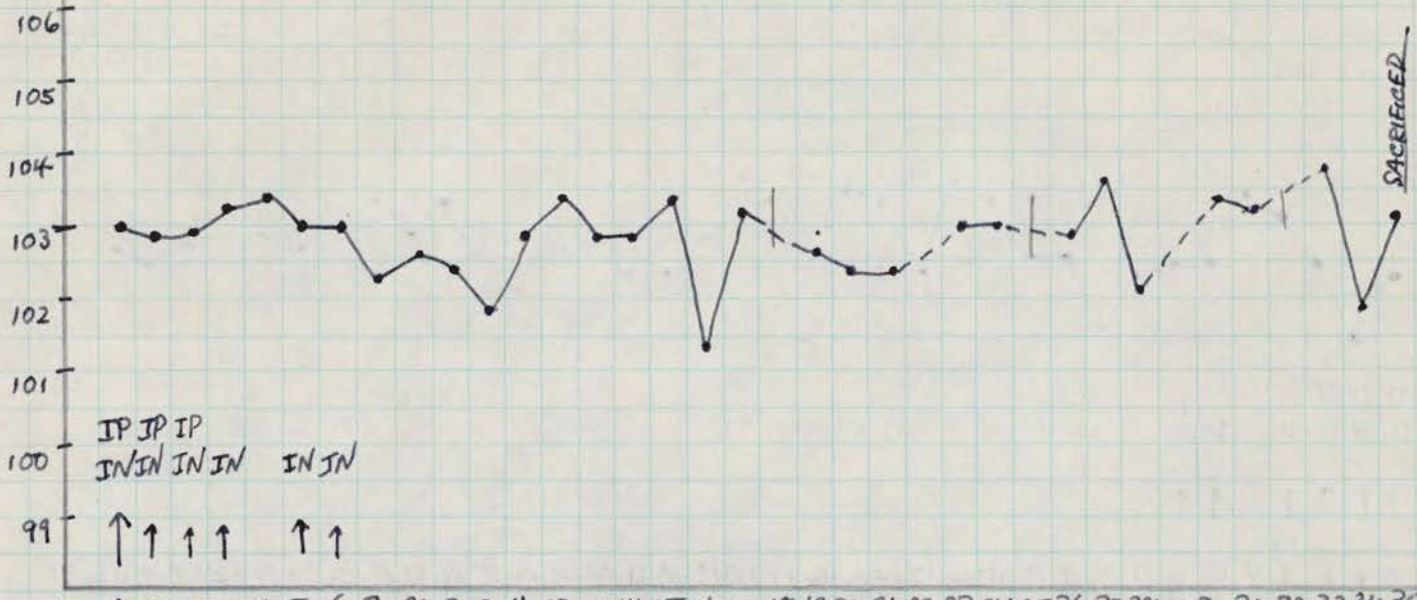
DEC 3 1947

[redacted]

Treated Stools — IP.
Untreated Stools — IN.

Cat: ✓✓✓

Rhesus # 31



12/3/47 - Inoculated 20.0 cc IP, and 1 cc per nostril IN.

1-7-48 - Sacrificed (Chloroform - exsanguination) - AUTOPSY: no gross tuberculosis. TISSUES; cord levels; medulla. Thalamus; hypothalamus; olfactory bulbs. (ZA.)

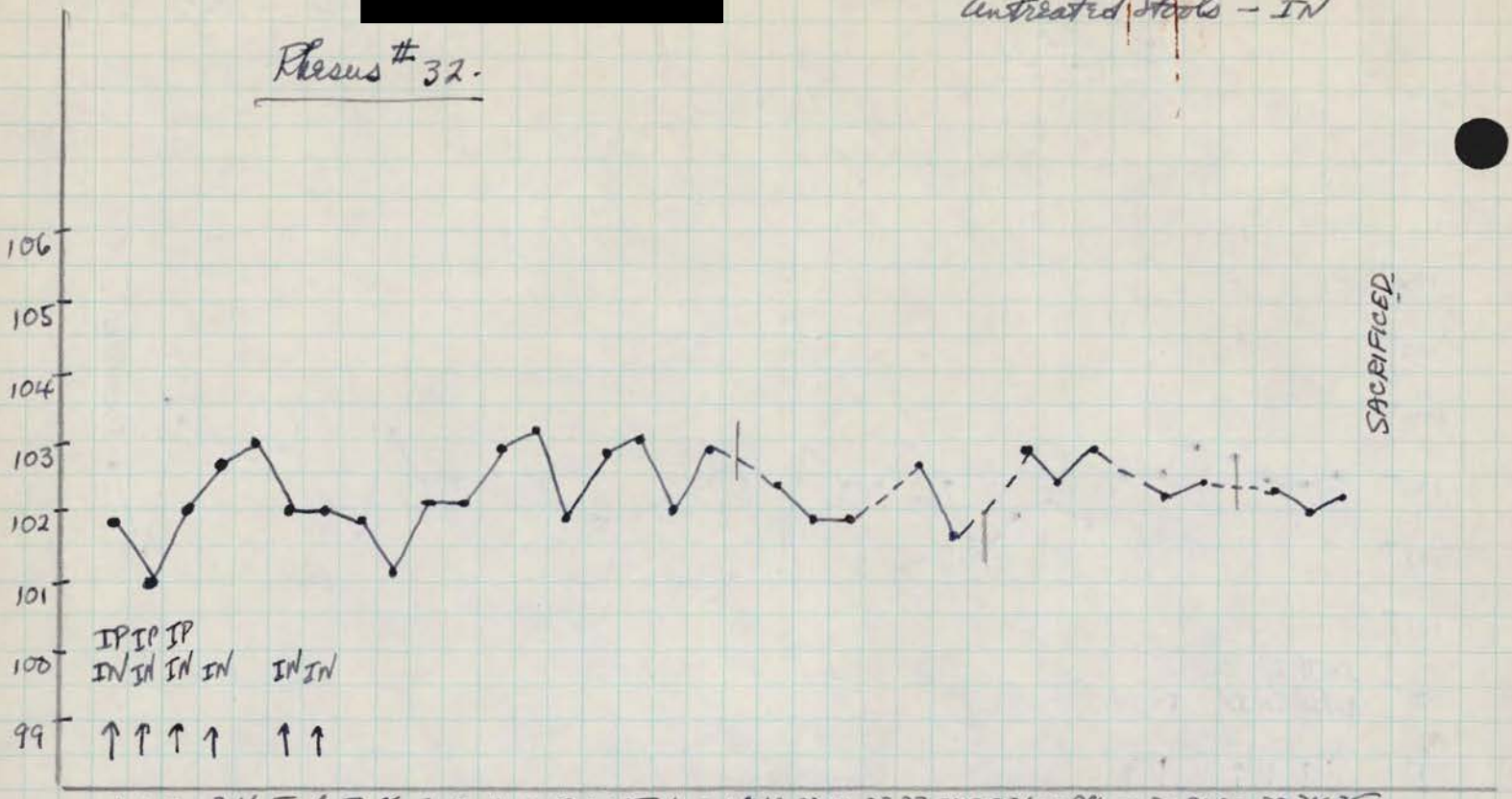
Histology - No Polio

DEC 3 1947

[redacted]

Treated Stools — IP
Untreated Stools — IN

Rhesus # 32.



12/3/47. Inoculated 20.0 cc IP and 1 cc IN per nostril.

1-8-47- Sacrificed (chloroform-exsanguination) - for histopathology.

AUTOPSY: no gross tuberculosis.

TISSUE FOR PATHOLOGY: - cord levels; medulla; thalamus; hypothalamus; olfactory bulb. (Z-A.)

Histology - No Polio

[redacted]

POLIO - 1947 — MONKEY HISTOLOGY.

MK.#	Lumbar-	Thoracic-	Cervical	Medulla.	Midbrain	Thalamus	Hypothalamus.	G.G. Bulbs	DIAGNOSIS
Rh. 31	0	0	0	0	—	—	0 (2 sect.)	0	NEG.
Rh. 32.	0	0	0	0	—	—	0 (2 sect)	0	NEG.