

INTERPRETATION



The lead concentration in these tissues is well above normal levels, as would be expected from the history of exposure. The concentration in the brain is about four times the upper normal level. These findings, however, in themselves, do not justify the diagnosis of lead encephalopathy, since such results have been obtained repeatedly without relation to demonstrable clinical plumbism. On the other hand we have found lead concentrations of these magnitudes in association with well defined lead intoxication. The diagnosis, therefore, must be made on clinical grounds, the analytical results merely tending to demonstrate the absence or the occurrence of significant lead exposure. In the absence of evidence of significant lead exposure, the diagnosis of lead poisoning is untenable; when present, the evidence can only confirm a conclusion arrived at on clinical information.

Robert A. Kehoe, M. D.

I should be interested in having the clinical record.

*Pa. Gills
Dr. Evans
Dr. Rittenhoff*

INFORMATION REQUIRED ON CASES FROM WHICH TISSUES ARE
OBTAINED AT NECROPSY FOR KETTERING LABORATORY OF
APPLIED PHYSIOLOGY

Name *[REDACTED]* *See the complete record of*
a continued case in hospital
Necropsy number *180068* Date of Necropsy *1-28-43*
Hospital number *N-43-44* Date of Death *1-27-43*
Age *50* Sex *♂* Nutrition *Fair* Length of Body *160. cm.*
Clinical Diagnosis Approximate Duration of Illness *20 DAYS.*
HYPERTENSIVE ENKEPHALOPATHY, POSSIBLE LEAD ENKEPHALOPATHY
TERMINAL LEFT LOWER LOBAR PNEUMONIA.
Anatomical Diagnosis
1-8-43 ONSET OF STAGGERING & KNOWN HYPERTENSIVE FOR 1 YR.
1-16-43 PERSONALITY CHANGES & MENTAL CONFUSION & DYSPNOEA.
1-25-43 EXPLORATORY BURR HOLES - NEG. FOR SUBARACH.
Previous Medical History in Brief

Occupational History *Picker*
WORKED FOR EAGLE BRAND LEAD CO.
31 YEARS HIST. OF EXPOSURE TO LEAD.

History or Evidence of Exposure to Lead, Arsenic, Mercury

31 YRS.
NO CC.N. EVIDENCE OF LEAD POISONING.
Pertinent Remarks

TISSUES DESIRED

(Please obtain such of these as circumstances will permit,
giving weights of entire organs when available. Weight of
sample provided will be determined in Kettering Laboratory.)

Organ	Total Weight	Weight of Sample	Organ	Total Weight	Weight of Sample
✓ Lungs (R) —	515		Brain	1290 gms.	
✓ Heart (L) —	890		Spinal Cord		
✓ Liver —	415		Striated Muscle		
✓ Spleen —	1625		Adipose tissue		
✓ Kidneys —	190		Long Bone		
Suprarenals	270		Rib		
Stomach and	25 gms (1)		Testicle		
Intestines			Skin		
Prostate	35 gms.				
Thyroid					
PANCREAS	100. gms.				

KE 0016311

N19510.01

these pits then moved
to basement

1st floor -

age 50 years 20 days
making
soldering, lead pipes
molten lead area

making bullets for King's mills
for period of several months

Became ill - 3 or 4 months ago to 1 year
ago - vomiting, headache
Diagnosed as hypertensive encephalopathy

Took sick on 8th day of Jan
vomiting and headache
Doctor saw him on 9th

1 week later began to have a delirium
talking about family in England
feared losing his mind - spoke of it
to step son and neighbor

Talked constantly, became incoherent
and had to be restrained - moved
continuously - Dr. Matucha would
not send man to hospital

Not at odd foreman of E.P.
mentioned - went to see Dr. Matucha
Went to CH on 19th
Died on 27th

1-19-43. On 1-8-43, patient became dizzy and was seen to stagger. Since then the patient has had severe occipital headaches. Several hours after the onset of dizziness, he began to vomit. Vomiting continued for approximately three days. Patient complained of slight abdominal pain, and of double vision. Patient remained in bed until the time of admission. One week after the onset of his illness, he began to be irrational, and required physical restraint. Also suffered hallucinations and delusions. Food intake had been normal until three days before admission. Patient had been a known hypertensive for over one year. At this time, because of vomiting and bilateral abdominal pain, accompanied with abdominal swelling, he was studied in the clinic and numerous x-rays were taken at that time. Patient was not hospitalized, however.

Patient had pneumonia in 1927. Review of symptoms revealed that the patient had worn glasses for the last six or seven months because of diminution of acuity of vision. Nocturia 1 x. Occupational history revealed that he had worked at the Eagle Pitcher Lead Co. for approximately 30 years.

Examination revealed a well developed, well nourished, poorly oriented, 50 year old white male with some blurring of his speech. Pupils were small and reacted poorly. E.O.M. normal. The retinal fundi were not well examined, because of lack of cooperation. However, it was thought that there was some edema of the left nerve with graying of the fundi and some A.V. nicking. There was a coarse horizontal nystagmus. B.P. 195/110. No lead line on gums. Neurological examination negative except for bilateral plantar reversals.

Laboratory Work:

Urea N. 65 mgm. %, Wassermann and Gold curve negative.

BUN. 16 mgm. %.

Routine laboratory studies revealed no anemia and no stippling of red cells. Urine contained albumen and numerous WBC. Lumbar puncture yielded clear, slightly yellow fluid under initial pressure of 140 with ++++ Pandy, 2 WBC and protein of 95 mg. %.

On 1-21-43 patient developed urinary retention and a retention catheter was inserted. He had been running a daily temperature elevation between 100 and 102, since 1-20-43. X-rays of skull on 1-23-43 showed a few areas of hyperostosis in frontal region, but were otherwise negative.

Patient was transferred to surgery following negative exploratory bi-occipital and bi-subtemporal burr holes under local anesthesia. B.P. on day following was 140/90.

1-26-43. Patient noted to be much worse, dyspneic, with slight cyanosis. He was less dyspneic than previously with slight spastic twitching. T. 103.3 (rectal), pulse 132, B.P. 120/70. He roused to mutter unintelligibly when disturbed.

1-27-43. Patient's condition was progressively downhill and he expired at 3:35 P. M.

Pat case file

UNIVERSITY OF CINCINNATI
[INTERDEPARTMENTAL CORRESPONDENCE SHEET]

To Doctor Robert Kehoe
Kettering Laboratory
College of Medicine

From Doctor Charles D. Aring
Neurology Offices
Cincinnati General Hospital

Date February 26, 1943

Dear Bob,

Slides on [REDACTED] have not come through yet. I'll send a copy of our record as soon as it is complete, probably in about a week.

As ever,

Chas.

KE 0016814

N19510.03

[REDACTED]

Hypertensive encephalopathy -- Possible lead encephalopathy

31-year exposure to lead -- Eagle ^{Picher} Brand Lead Company - *Brooklyn*

Necropsy 1-28-43 -- Drs. Gibbs, Evans, and Ritterhoff

Analysis Number	Tissue	Weight Grams	Mg. Pb Found	Mg. Pb/100 g.
43A-245	Lung	30.7	0.03	0.098
43A-246	Heart	23.5	0.004	0.017
43A-247	Kidney	23.5	0.040	0.170
43A-248	Spleen	32.6	0.130	0.400
43A-249	Liver	27.0	0.32	1.18
43A-250	Brain	41.5	0.20	0.48
43A-251	Pectoral Muscle	28.0	0.07	0.25
43A-252	Pancreas	34.0	0.03	0.088
43A-253	Clavicle	7.5	1.14	15.20
43A-254	Rib	7.5	1.22	16.25
43A-255	Suprarenals	3.8	0.004	0.105

Samples Received: 1-28-43

Samples Reported: 2-2-43

KE 0016815

N19510.04