CASE SUMMARY

[redacted]
7719 Harshmanville Road
Dayton, Ohio 45424

A. Introduction:

It is pertinent to consider the most recent admission to Good Samaritan Hospital, in Dayton, Ohio, on October 22, 1969, which led to the diagnosis of Chronic Plumbism, i.e., chronic Lead Poisoning.

B. History:

This 43 year old white female presented with the chief complaint of colicky left lower quadrant abdominal pain. This particular episode began rather suddenly, two to three days prior to admission, with increasing point tenderness in the LLQ, and was associated with nausea and vomiting. The patient was seen in the office one day prior to admission and it was feared that she may have an Acute Diverticulitis; it was felt that she should be admitted for further evaluation.

C. Physical:

The physical examination demonstrated the following physical findings: This middle-aged, white female was noted to be in acute distress, with the general appearance of being chronically ill. However, she was alert, cooperative, and oriented.

HEENT; The patient was noted to be normocephalic. The hair texture and distribution were normal except for some thinning. The scalp was negative for disease. The tympanic membranes bilaterally were intact and normal. The pupils were noted to be equal and round, and reactive to L & A.

The funduscopic examination was within normal limits. The sclerae and conjunctivae were noted to be somewhat injected but otherwise negative. EOM was normal. Mucous membranes of the buccal, oral, and pharyngeal surfaces were noted to be dry and somewhat injected, with a generally pale appearance. Recession of gum lines, commensurate with her age, was noted. The tongue was dry and somewhat fissured. The dentition was in fair repair.

Skin: The skin was noted to be somewhat pale, but no specific lesions were noted.

Neck: Supple, without thyroid enlargement, venous distention, carotid bruit, or adenopathy.

Chest: Clear to A&P.

Heart: PMI was noted to be present in the left fifth intercostal space in the MCL. There was no cardiac enlargement, no murmur, thrill, rub, precordial heave, bulge, or other abnormality. A-2 was noted to be greater than P-2.

Abdomen: Slightly protuberant. There were several well healed surgical scars without hernial defect or other abnormality. Generally there were decreased bowel sounds, and the LLQ was noted to be quite tender to palpation with some suggestion of rebound tenderness to that area. Some epigastric tenderness and LUQ tenderness was also present, but without rebound.

Pelvic: There was a thick leukorrhea in the vaginal vault. Uterus, cervix, and adnexae were noted to have been removed previously. The BS&U glands were within normal limits.

Rectal: Within normal limits.

Extremities: Essentially normal at this time.

Neurologic: Fairly physiological, even though there had been ramifications of peripheral neuritis involving the left sciatic destribution on

previous examinations. No significant neurological findings were noted at this time, representing clearing of the previous involvement. No pathological reflexes were elicited.

Impression: At the time of admission the impression was that the patient may have an Acute Diverticulitis or possible left ureteral colic.

D. Review of Progress Notes:

The patient had previously presented with evidence of Pylorospasm, Gastritis, and post-stress Gastric Ulcer Syndrome.

During this admission, it was also felt that Gastric Ulcer associated with possible Acute Diverticulitis should be ruled out. Dr. John Brown, a general surgeon, saw the patient in consultation on a number of occasions and did not feel that there was any surgical problem.

The patient had some pus cells in the urine, raising the question of a left Pyelitis. She began to evidence some fever, and did have some pain in the left CVA, with tenderness radiating along the left flank and into the LLQ. A pelvic examination was again performed, and a thick vaginal leukorrhea was again noted to be present; the patient was accordingly treated.

In an effort to leave no stone unturned, consultation was also requested of Dr. Sylvan Weinberg, an Internal Medicine specialist. He examined the patient and felt that he would follow the patient along during her admission, and order what seemed to be appropriate in further diagnostic testing. In regard to this, it was felt that studies should be done for presence of heavy metals or other poisons, to rule this out as a possible cause for abdominal pain. Therefore, samples were taken of her urine, hair, and nail clippings. A general toxicological survey was performed with the astonishing result that an extremely high level of lead was found to be excreted in the urine. As a further effort to determine whether or not this could be the cause of

her abdominal pain and discomfort, the patient was placed on specific therapy for elimination of total body lead, that of treatment with Virsinate.

During her actual IV therapy with Virsinate, and for several days thereafter, the patient's abdominal colic increased. However, within a few days all of her pain disappeared and she seemed to be essentially normal. The repeat urine lead levels showed a definite increase due to the decomplexing of lead within her bone. Serial lead levels done on 24 hour urine collections then demonstrated a drop below what had originally been present after the patient had reveived a full course of Virsinate therapy.

The patient had negative urine porphyrins, even though this was expected to increase with lead toxicity.

The patient was then thoroughly questioned about the possibility of her having inadvertently ingested lead from known possible sources, and it was determined that the patient did have in her possession a Chinese teapot which was purchased at a five and ten cent store approximately five to ten years ago, and from which she began to drink regularly since the beginning of 1969. This teapot was taken to the WPAFB Toxicology Laboratory by the Montgomery County Public Health officials. It was found that the glaze within the interior of the teapot was indeed a lead base, and this was the primary, if not the only source, of lead that the patient was receiving. Therefore, it was felt that the diagnosis was established, and that lead poisoning <u>was</u> the patient's problem, and had been so all during 1969. She was then dismissed, to be followed as an out-patient.

E. <u>Case Summary</u>:

This diagnosis explains many mysterious happenings as far as this patient's clinical course has gone over the past year. This included a sciatic neuritis with foot drop, which cleared spontaneously with basic discontinuance

of the patient's lead source, when she was placed in the hospital for treatment of same. The intoxicating factor, that of lead, would be responsible for many GI symptoms, including the stress ulcer, etc. She had been drinking tea out of this teapot after each hospitalization, and would get recurrent symptoms and would be re-hospitalized. Treatment with high calcium diet, antacids, etc., would clear her symptoms, then she would go back home, drink more tea laced with lead, then would reappear with another episode of acute symptomatology.

F. Review of Other Pertinent Hospitalizations:

On June 4, 1969, when she was having symptoms of left sciatic neuritis, it was thought to be due to a degenerated herniated nucleus pulposus in the L 4-5 area. At this time she had developed, during her admission, a Cushing's stress gastric ulcer with acute GI colic. The developement of this secondary GI problem, in retrospect, could be laid to the fact that between admissions she had drunk more tea from the teapot and developed lead toxic symptomatology.

The next admission was on August 15, 1969, again to Good Samaritan Hospital; the final diagnosis was possible Acute Reflux Pancreatitis, secondary to Sphincter of Oddi-spasm, associated with a severe anxiety state, with the usual GI symptomatology. In retrospect, all these gut symptoms were recreated by the repeated ingestion of tea from the teapot between admissions. The gastric ulcer did demonstrate healing at this time, and she still was suffering from some mild left sciatic neuritic symptoms.

G. Out-patient Follow-up:

Since these admissions the patient has had intermittent abdominal colic, much reduced since the patient had been advised that she was being poisoned from drinking tea from the lead glazed teapot. With the source of lead being eliminated, it is felt the patient will eventually do much better in this regard,

although, of course, some toll has been taken of normal GI function from this past year's exposure to lead.

The most recent complication has been that of an optic neuritis, which has been bilateral, and progressive. The symptoms that the patient complains of are progressive retro-orbital headache accociated with intermittent severe episodes of blurring of vision, and with reduction in visual fields (to the point where the patient felt as though she were looking out through gun barrels). The patient was seen in regard to this by an osteopathic physician, Dr. Wilson, who specializes in ophthalmology. The chief finding at that time was that of reduced peripheral vision, which in his opinion, most probably was due to lead toxicity. In conjunction with this, the patient was seen by Dr. David Bernie, and Dr. John Bockoven, ophthalmologists and M. D.'s, with the findings demonstrating bilateral concentric contractions in the central and peripheral visual fields. The patient also was suffering from amaurosis fugax (fleeting loss of vision). Concentric contraction of the visual fields, in their opinion, was due to optic atrophy which was felt could be due to toxicity, but the single examination and field tests were insufficient to give a conclusive opinion. The patient did not have sufficient objective findings to confirm the subjective complaints. The possibility of there being a Conversion Hysteria present was raised.

Due to the fact that the patient is known to have Functional Hypoglycemia and latent Diabetes Mellitus, it was felt that possibly her optic disorder was secondary to the developement of frank diabetes. The patient had a fasting blood sugar and a two hour post prandial blood sugar done in the office which demonstrated no abnormality. This being ruled out, the patient was then sent to the University Hospital at Ohio State University to see Dr. Martin Lubow, who is assistant professor in ophthalmology and neurology there. In his

opinion, her medical problem was: 1) lead poisoning, and 2) a functional visual complaint manifested by tubular visual fields. He agreed with the opinion that possibly the patient was suffering from a Converstion Hysterical Reaction, however, the visual field examinations that he performed were consistent with those done by the other ophthalmologists. He noted specifically her visual acuity had diminished since her previous examinations and the visual fields were grossly abnormal, with constriction to a central 5° without a central scotoma in each eye to all targets on the Goldman perimeter and tangent screen. The central 5° seeing area did not expand appropriately when she was moved back to two and three meter distances, but remained consistent in tubular fashion. Her fixation reflexes for motility testing were also inconsistent. Except for subjective responses her neurological-ophthalmological examination was essentially normal. However, on telephone conversation with the same physician, he did not rule out entirely the possibility of her suffering from an optic neuritis from lead poisoning. He did indeed recommend that the patient be re-evaluated from the point of view of her possibly having symptoms due to lead, and referred me to an article on treatment of lead toxicity and poisoning with Penicillamine. The patient was placed on oral Penicillamine but evidenced adverse reaction to the drug, and this had to be discontinued without its having produced any significant effects.

Several lead levels have been obtained on the patient since then, and these lead levels were found to be within normal ranges. No further treatment with Virsinate, Penicillamine, or any other specific agent has been instituted recently, and not since her previous admission.

H. Report Summary:

Background-wise, this patient has had multiple surgical procedures. Pres-

ently she is without gallbladder, uterus, tubes, ovaries, appendix, and has had removal of a single herniated nucleus pulposus at the level of L 4-5 many years ago. The only associated problem that she has at present is that of a Parasagittal Meningioma which is calcified and has not changed over the past fifteen years. It is not felt that any of her symptomatology at the present time or in the recent past has been due to this meningioma.

The patient has, over the past year, been suffering recurrently from signs and symptoms of lead toxicity induced by intermittent lead poisoning from drinking tea from a Chinese teapot purchased in a dime store. These signs and symptoms have been primarily gastrointestinal; that of acute, recurrent, colicky distress. Also noted are Functional Hypoglycemia, some evidence of mild Pancreatitis, definite Stress Ulceration in the stomach, occasional bouts of Colitis, and on two occasions, signs and symptoms of a neuritis, in the first case involving a left sciatic nerve distribution, and in the second case, the optic nerves.

At the present time, even though the source of lead toxicity is removed and the patient has no further exposure to such, it is known that high levels of lead may still be deposited in her bone structure complexed with the bone. Whether or not this will become an unstable chemical imbalance and eventually start coming out of the bone again is unknown.

As far as her eyes are concerned, it is prognosticated that she will recover; the degree of recovery at the present time in unknown (but if one can be guided by the fact that the peripheral sciatic neuritis spontaneously went into remission, then possibly the same will occur with her optic nerves).

Needless to say, this patient has suffered tremendously, with protracted illness, much loss of work creating severe psychic stress; the natural fear that she was going to die was ever present.

Her outlook at the present time is somewhat guarded prognostically, simply because I do no know whether she will have further symptomatology, nor do I know whether or not her vision is going to continue to deteriorate.

Organ systems which have been involved are those of the Central Nervous System and Peripheral nerve roots, the Musculoskeletal System (which in addition has been aggravated somewhat by the natural Osteoarthritis which occurs with advancing age and in a surgically menopausal patient), the Gastrointestinal System, and that of at least one organ of sense--the eyes.

Therefore, she has had a Protean illness, protracted and prognostically guarded, due to lead poisoning and toxicity, which occurred because of recurrent ingestion of tea from a teapot which was contaminated with lead glaze.

Gerald H. Dennis, II, M. D.

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