

April 16, 1936

Dr. M. M. Van Sandt
Wewoka Hospital
Wewoka, Oklahoma

Dear Dr. Van Sandt:

I am very glad that you wrote to me about your patient who had swallowed gasoline and I hasten to reply not only because it is easy to be mistaken about cases of this sort, but also because it is necessary not to do the wrong thing by way of therapy.

The illness of your patient is primarily due to the effects of gasoline. Because of the fact that gasoline is not swallowed frequently, it is not generally appreciated that it is a very irritating material and that it does extensive damage to the gastro-intestinal mucosa. Even small quantities of gasoline such as may inadvertently be mixed with drinking water produce a gastro-intestinal disturbance which results in variable amounts of damage to the mucosa more or less in proportion to the quantity ingested. The mucosa may be badly eroded and as in your instance there may be considerable hemorrhage. (It is possible, of course, that your patient may have had a gastric or duodenal ulcer to begin with, but it is not necessary to have such a lesion in order to have intestinal hemorrhage). Usually, however, there is a nausea, vomiting, rather intensive diarrhea, weakness and prostration, and sometimes nervous system symptoms similar to those seen when gasoline is inhaled in relatively high concentrations.

As to the influence of lead in this picture, you may dismiss it entirely from your mind. Not only is Ethyl Fluid less irritating in its effects than is gasoline, but also the quantity involved in this type of case is negligible. A simple calculation will show you that this is a factor of no consequence. Let us suppose that this man swallowed as much as 100 cc. of gasoline. It is entirely unlikely that he swallowed this much but that is almost certainly the maximal quantity which he could have swallowed. Tetraethyl lead is present in gasoline in quantities not in excess of 3 cc. per gallon and in most instances the quantity is considerably less than this, being on the average something under 2 cc. per gallon and in the second grade gasolines being about one or less cc. per gallon. At the maximal concentration the ingestion of 100 cc. of leaded gasoline would result in the ingestion of over 1 grain

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(actually about 80 mgs.) of tetraethyl lead. Granting that the entire quantity was absorbed, it is not to be expected that any symptoms would result since the toxic dose of tetraethyl lead even for small experimental animals is greater than this when administered orally.

I should imagine that what happened is that your patient developed an erosion of the mucosa of the stomach, and perhaps of the duodenum. This resulted in a certain amount of oozing of blood from a fairly considerable surface of the gastro-intestinal mucosa. This would account for the bloody stools, the rather considerable anemia and the general symptomatology. Barring further hemorrhage, I should expect him to make an uneventful recovery. I should treat such patient with a very bland diet entirely free of raffage until the gastro-intestinal symptoms have entirely subsided. If any further transfusions are indicated, this is undoubtedly the best way of restoring his blood to its normal picture, but unless there is further hemorrhage, I should not consider transfusions as necessary.

I should appreciate it very much if you will let me know a little later any further details in the course of this man's illness. We have been very much interested in cases of gasoline intoxication because for some queer reason not many of them have been described in the literature, and such experimental observations as have been made have been confined almost exclusively to the effects of the inhalation of gasoline.

Sincerely yours,

RAK:is

Robert A. Kehoe, M.D.