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LIVER DAMAGE IN CHRONIC FLUORIDE INTOXICATION

Cases of chronic fluoride intoxication due to industrial hazards are rarely reported in the medical literature. The following brief case report of chronic fluoride poisoning is of special interest because of liver involvement, a rarely described feature of the disease. It was presented to the editor in a letter by D. M. Gumprecht, M. D. of Coeur d' Alene, Idaho

On October 7, 1952, J. R. S. age 32, consulted Dr. Gumprecht because of vague pain and abdominal distress, of a few days' duration, in the region of the liver and gall bladder. It had been preceded for approximately three months by episodes of "indigestion", flatulence, loss of appetite and general malaise.

The patient had previously been in perfect health. On examination he was slightly icteric. Tenderness was elicited in the right upper quadrant, in the liver and gallbladder region. The teeth exhibited a distinctly brownish discoloration. The gallbladder X-ray showed poor concentration of the dye without evidence of stones. The patient was given a diet low in fat, bile salts and a high potency vitamin B preparation.

The patient, a waterworks employee, had been adding sodium fluoride to the water supply of a pipeline during the summer months. He had to sift out the powder before adding it to the machine because of contamination by stones and other gross impurities. His health improved after a new shipment of the chemical arrived and it was no longer necessary to sift it.

However, the vague abdominal pains and general malaise persisted. Additional X-rays of the stomach, taken in April 1953, revealed a slightly enlarged duodenal loop above the head of the pancreas. The gallbladder X-ray showed improvement in the concentration of the dye. Again there was no evidence of stones. The "indigestion" and marked general malaise continued.

On November 10th the patient experienced another episode of severe pain in the liver area with slight fever and night sweats, jaundice, anorexia, "staining of teeth" and marked general fatigue. The white blood count was slightly elevated. The symptoms subsided gradually. A consultant W. Myhre, M. D. of Spokane concurred with the diagnosis of fluoride poisoning. With increasing water demands during the summer months, the patient had to handle more fluoride which aggravated the condition.

On May 22, 1954, upon his physician's advice, the patient was transferred to an outside job and avoided all further exposure to fluoride. This change of occupation finally cleared up the disease, although occasional vague pains in the liver area tended to recur.

A legal settlement was made by the water company for damages incurred as the result of the occupational hazard.

Liver damage in chronic fluoride intoxication was reported by Fradà et al. among persons with endemic skeletal fluorosis in Northern Sicily (Fradà, G., Montesana, G. and Nalbone, G.: *Minerva Medica* 54:45-59, 1963). Another reference to liver damage in chronic fluoride poisoning was made at an air pollution District trial in an Oregon court (Reynolds Metals Company versus Paul Martin et al. in U.S. Court of Appeals, June 1958). Testimony was presented on liver damage in three individuals and on the occurrence of sudden acute abdominal episodes.

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