

A fatal case of poisoning by nitric acid / by Sir Dyce Duckworth.

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A Fatal Case of Poisoning by Nitric Acid. By Sir DYCE DUCKWORTH, M.D. Read November 13, 1885.

A. B., a city merchant, æt. 29, was admitted into John Ward at St. Bartholomew's Hospital during my visit on February 11, 1885. He was brought in with the history that he had swallowed about an ounce of strong nitric acid shortly before. Medical assistance had been previously summoned, and the patient was found violently sick, and had lime water administered to him.

On admission he was unable to articulate plainly, and constantly cried out with pain. He replied imperfectly to questions. The lips were excoriated, also the chin; the tongue and buccal membrane were white. There was constant and violent retching, and occasional vomiting of mucus and dark altered blood, of strongly acid reaction. Frequent attempts were made to clear the throat of mucus. The man was in great agony.

Calcined magnesia, well-stirred up in milk, was administered as promptly and freely as possible, and after a short time the vomited matters became alkaline. The patient was now in a state of collapse, with a pulse of 50, though of fair volume and power. Temperature normal. The face was dusky, the extremities cold, knees and thighs flexed on abdomen. Constantly groaning with pain. An enema of beef-essence, f3ss brandy, and mxl of tincture of opium was retained, and relief was afforded by opium, which was given to the extent of mxxl in the next twenty-four hours. The evening temperature rose to 99·6°, and hiccough occurred for two hours.

February 12 (second day).—The body was warm all over, and the patient was calmer. Occasional attacks of sharp pain in stomach. Quite conscious. Replies to questions as well as his sore mouth will permit. Pupils very small. Opium given by mouth and in enemata to the extent of mc of laudanum during this day. The first urine passed contained much blood (*vide* drawings), and the succeeding specimens became gradually free of it and the albumen due to it. Large linseed and laudanum poultices were assiduously applied all over the abdomen with great relief. Vomiting continued at intervals,

the rejected matters still containing blood. Tongue and buccal membranes white and charred.

February 13 (third day).—Much collapsed early in the morning, pulse running. Improved after nutrient enema. Abdomen distended. Pulse 140. Had *mcxlii* of laudanum by mouth and rectum. Free from pain. Quite conscious. Voice strong. No action of the bowels so far; a portion of the enemata sometimes rejected.

February 14 (fourth day).—Slept better. Face less pinched than before. Temperature normal. State of mouth and breath now very offensive. Shreds of putrid mucous membrane expectorated. Unable to swallow anything. Tongue has shed its charred coating, and is very red. Passed four liquid motions. Shows more power and is cheerful.

At 3.30 A.M. of February 15 (fifth day) hiccupping occasionally. Bowels frequently acting. Systolic sound at heart's apex prolonged and rough. Over the base, to left of sternum, some doubtful friction-sound. Temperature rose to 102.2° , and fell to 101.6° before death occurred. Over *mc* of laudanum were taken the last day. In the last state of collapse, half a drachm of ether was injected under the skin. The mouth was washed with a lotion of borax and chlorate of potassium in infusion of roses. Peptonised food was given as long as swallowing was possible.

The patient lived a hundred hours after taking the poison. It was difficult to get a clear history of the circumstances under which it was swallowed. According to one account luncheon had been taken a short time previously. I had no doubt of the suicidal intention of the patient. He was a strong and well-nourished man. The stains left by the acid were sufficiently characteristic, and the reactions of the first vomited matters were those of nitric acid.

On examination of the body next day, the principal appearances were the following:—The mucous membrane of the œsophagus was grey and partially detached from the pharynx downwards. Fauces merely œdematous. The epiglottis much thickened, mucous membrane of larynx down to vocal cords greyish, tracheal membrane merely red. Lungs œdematous. The pericardium injected in parts; no lymph. Endocardium natural. Abdomen, slightly puffy about epigastrium. A little lymph on anterior surface of stomach and over the liver; none lower down, and no signs of general peritonitis. The walls of the stomach thick, and cavity very small. Mucous membrane brownish-black in colour, with a

few red streaks. This condition extended onwards about four inches into the duodenum. Thence along the jejunum the mucous membrane was greyish. Below this, the intestines were not changed. The liver was putrid and softened. All the other viscera appeared natural. The head was not allowed to be opened.

It is noteworthy that signs of severe irritation passed beyond the papilla whence bile entered the duodenum. In several recent cases of irritant poisoning at St. Bartholomew's it has been found that the corrosive effect has ceased abruptly at this point, indicating on the part of the bile a neutralizing and protective influence over the mucous membrane. The stomach was not perforated. This seems to be not uncommon. Orfila records a case where three openings occurred. The small size of the cavity is also noted by Orfila. It is said to be found when perforation is present. The occurrence of hæmaturia has not been recorded before, so far as I am aware. The symptoms were possibly modified by the patient having had a meal shortly before taking the poison. The prolongation of his life was due, I feel sure, to the extreme devotion of my house physician, Dr. Brinton, and the ward sister and nurses. The large amount of opium, over an ounce of the tincture, afforded marked relief, and the man was of excellent constitution and in full vigour. Laudanum was freely used also in the poultices to the abdomen. On two occasions he seemed to be sinking, but was revived by nutrient enemata with brandy.

It seems right to employ opium very freely in such cases. The suffering is intense, and it is at least our duty to secure euthanasia if we cannot avert a fatal issue. (Coloured drawings of the urine as passed on four occasions after admission, and the preparations of the tongue, fauces, larynx, œsophagus, stomach, and small intestines, preserved in glycerine, were shown.)

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