Food Poisoning Caused by Hemolytic Staphylococcus in a Defense Plant*

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THE nurse was called from the dispensary at Kodak Park at 8:30 p.m. on August 3, 1943, to attend two employees who were violently ill with nausea, vomiting, and diarrhea. Shortly afterward, calls came from various parts of the plant to treat many others. Patients reporting to the main Kodak Park dispensary completely filled every room. It was obvious that we were confronted with a major emergency caused by some gastrointestinal irritant. A hasty survey showed that all cases came from among those people eating the evening meal in one of our numerous cafeterias. Some were in a severe degree of shock with cyanosis and cardiac arrhythmias.

With our own facilities taxed to the limit, it was decided to request aid from the chief Health Officer of the City of Rochester, Dr. Arthur M. Johnson who is also chief of the Emergency Medical Service of the Civilian Defense Organization. He promptly dispatched Dr. Norris Orchard, Deputy Health Officer, to our dispensary while he himself went to the control center of the Emergency Medical Service, according to a predetermined plan for caring for major medical emergencies in this area.

Hospitals were notified that an emergency existed. Beds were made available, and the emergency wards were staffed in readiness for the arrival of patients while the ambulances were sent from the hospitals.

Dr. Johnson directed the flow of ambulances from the scene to the various hospitals so that there would be no more patients at any one hospital than could be adequately taken care of at one time. It might be mentioned that when this organization was set up, no one thought it would first be needed to serve food poisoning cases on a large scale.

Each ambulance carried one very sick patient and four ambulatory cases. These patients were tagged at our dispensary with name, address, and the medication administered clearly indicated on the tag. In some instances it was necessary to insist firmly that hospitalization was necessary.

Preliminary treatment in our dispensary consisted in evacuation of the stomach as quickly as possible. The finger method was used, together with the drinking of large quantities of tepid water. These methods were effective. By the time the patients had left the dispensary, all their stomachs had been emptied at least once, and in some instances several times. Five patients, desperately ill, received 1/4 grain of morphine sulfate by hypodermic. As no one knew definitely the cause of the symptoms at that time, it was decided to hospitalize every patient. This

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probably was a good decision. Twenty-four patients were removed to the Strong Memorial Hospital, 15 to the Rochester General Hospital, and 10 to the Genesee Hospital. Treatments varied with the hospital but consisted in the main of forced fluids by mouth when tolerated and glucose and saline by vein. In one hospital magnesium sulfate by mouth, hypertonic salt solution by mouth, and oxygen to those who were cyanosed was used. Doctors and nurses worked long into the night.

Dr. David B. Jewett, senior physician at the Genesee Hospital, furnished a statistical analysis of the symptoms shown by 10 patients. All vomited, 9 had diarrhea, 5 very severely. All but 1 had abdominal pain, and in 3 cases the pain was very severe. Cyanosis was present in 2. Only 1 showed blood in the stool. There was 1 case of auricular fibrillation. The temperature was 100° or above in 7 cases, the highest being 103.2°. There was a leucocytosis of over 10,000 in 6 cases; the highest count was 31,000. In 4 cases there were albumin and casts in the urine. Cases at the Strong Memorial and Rochester General Hospitals showed in general the same signs, symptoms, and laboratory findings.

Dr. Charles M. Carpenter, for the Health Bureau, isolated hemolyzing staphylococcus in the vomitus in nearly all cases admitted to the Strong Memorial Hospital, and in some instances the same organism was isolated from the stool.

One patient later developed an acute appendix which was removed. Another developed suggestive symptoms but was not operated upon. One patient developed a low-grade pneumonia 6 days after his return from the hospital. This promptly responded to sulfathiazole therapy. There were no deaths. All cases, with the exception of the appendix case, returned to work after 4 weeks. Sixty per cent returned after the first week.

Eighty-one employees in all were affected. Thirty-two individuals who went home before being taken ill, or who went home rather than report to the dispensary, were treated either by home remedies or by the family physician. Their period of absence closely approximated those who were hospitalized. Symptoms in nearly all cases began from 2½ to 3 hours after a meal was ingested at the one dining room previously mentioned. The acute symptoms in most cases persisted through the night. For two or three weeks many patients complained of various aches and pains, abdominal cramps, and some degree of prostration. Most patients returned to work within 17 days.

One of our first interests, of course, was to determine the cause of this epidemic. It was soon evident that all the people affected had eaten their evening meal in one cafeteria, and they all had eaten corned beef.

The cafeteria system at Kodak Park consists of a main kitchen where food is prepared and distributed to various dining rooms about the plant. On the morning of August 3, 1,000 pounds of fresh corned beef was cooked and sliced with a mechanical slicer. It was distributed to five dining rooms. A portion was served at the noon and evening meals. After the noon meal, normal practice has been to take the unused portion of the food back to the main kitchen where it is refrigerated and prepared for the next meal. In an effort, however, to save gasoline, this practice was abandoned two months previously, and the plan called for refrigeration after the noon meal in the local cafeteria. This necessitated, in some instances, overloading of the refrigerators, as they were not planned to take care of this additional load.

There were no cases following the

noon meal. One patient ate corned beef at the same dining room both at noon and in the evening. This patient had no difficulties following the noon meal.

Closely following the episode, all food handlers were carefully examined by our Medical Department. One employee in the kitchen who handled the meat, presumably with a knife and fork, showed an infected, untreated laceration on the third finger of the left hand, culture of which, taken by the Health Department, showed a hemolyzing staphylococcus. From another employee with facial acne the same organism was isolated by the Health Department. This employee did not assist in the organizing or preparation of the food. It is assumed that the epidemic came about by the contamination of the corned beef by the infected finger. Quite possibly, although it was not proved, this meat was not refrigerated sufficiently in the ice box.

We are convinced that a daily inspection of the hands, arms, and forearms of the food handlers is necessary, and they should be asked at this time if they have any boils, pimples, or infections of any kind on any other part of the body. Ample refrigeration space should be provided for the proper refrigeration of foods, for it is known that bacterial growth proceeds very rapidly at room temperatures, and that standing for 5 or 6 hours is sufficient time for gross infection to take place. There should be some one person responsible for the carrying out of these precautions. Only eternal vigilance will keep a similar catastrophe from any large eating establishment.

We were acutely aware of the value of an organized Emergency Medical Service to the community. In any sizeable community it is possible for large numbers of people to be taken ill in this way or to be injured at one time, and an organization of this sort eliminates most of the confusion which is inevitable when large numbers of people require hospitalization within a short period of time.