OUR PRIZE COMPETITION.

WHAT ARE THE CAUSES OF PTOMAINE POISONING, THE SYMPTOMS AND TREATMENT?

We have pleasure in awarding the prize this month to Miss Florence Ibbetson, Essex County Hospital, Colchester.

PRIZE PAPER.

Ptomaine poisoning is food poisoning. It was thought that harmful substances were produced in decomposing food, hence the word ptomaine, but now we know that food poisoning may be due either to germ infection or to chemical poisons in the food. Many disease germs may be present in food, causing epidemic diseases such as typhoid fever, cholera, dysentery, etc., but by food poisoning we usually mean:

1. *Infection by Bacillus enteritidis* or *Bacillus Aertrycke.*
2. *Infection by Bacillus Botulinus.*

Poisoning by chemical agents may be, for example:—

1. Toadstool poisoning, due to the alkaloid muscarine.
2. Cheese poisoning, due to butyric acid.
3. Rye bread poisoning, due to ergot.

1. The *B. enteritidis* and *B. Aertrycke* belong to the typhoid group of germs. As they are not easily destroyed by cooking we often find this infection in cooked meats such as sausage, potted meat, pork pie and in tinned foods. Infected food cannot be recognised by sight, smell or taste. Indented or bulging tins should be avoided and cooked meats also in hot weather.

The symptoms of poisoning are soon very obvious after taking the food and will affect the family or group of people who have partaken of the infected food. The victim begins to shiver and feels sick. Vomiting and diarrhœa are marked, and accompanied by colicky abdominal pain. The temperature is raised, the pulse increased and there is marked prostration, while the patient complains of severe cramp in the legs. There may be an angry erythematous rash. The stools are frequent, foul smelling and will contain mucus, blood and the bacilli. The attack will usually last 24 to 48 hours and recovery is usual. A prolonged attack will give rise to signs of acidosis and shock.

Treatment.—Put the patient to bed and keep him warm and quiet. Empty the stomach with an emetic or saline washout and give castor oil ʒi. A colon washout may also be ordered. Starve the patient for a few hours and then start on a diet of sterile water and glucose 6 per cent. or albumen water, working up to a milk diet and later on light diet. If there is severe loss of body fluid and acidosis, subcutaneous glucose salines will be needed. Heat is applied to the abdomen and a gastric sedative will be ordered such as chalk and opium, kaolin or Maclean's powder. Charcoal is said to absorb the toxins. Measure all urine passed, and observe and save for inspection all stools and vomit. Treat the skin rash with sod. bic. lotion. Keep the patient in bed until the symptoms have all subsided.

2. *B. botulinus* causes a condition known as *Botulism.* This germ is allied to the *B. tetanus* and is anærobic and spore forming, producing a powerful toxin which irritates the nervous system, causing paralysis of the 3rd, 4th and 7th cranial nerves and of vital centres. It is readily destroyed by heat and is usually found in canned foods.

Symptoms.—Again there is a rapid onset after taking the food. The patient complains of headache, dizziness and general malaise. He feels sick and may vomit at the outset. There is no pain in the abdomen nor diarrhœa. The temperature is subnormal and the pulse slow at first. The mouth is dry. The patient soon shows signs of various paralyses, giving rise to such abnormalities as dysphagia, weak voice, diplopia, squint and ptosis of the eyelids, dilated pupils. There is a flaccid paresis of the limbs with diminished reflexes. The mind is clear all the time.

Botulism is a very virulent condition with a high mortality from respiratory or cardiac failure. If recovery does occur, improvement begins about the third day.

Treatment.—Absolute rest in bed and treatment for shock are the first things. Block the foot of the bed, apply general heat and the doctor will order morphia to lessen absorption of the poison from the digestive tract. The stomach is washed out with saline solution or an emetic is given. Follow up with a good purge. If it is procurable, anti-serum 10 c.c. is given. Save any vomit or fæces, but as a rule it is difficult to isolate the germs in the stool. Measure the urine. Large quantities of fluids should be taken, by mouth if possible, but if dysphagia is severe, rectal or subcutaneous salines will be required. Work up the diet from clear fluids. The respirations and pulse must be taken frequently and any signs of respiratory or cardiac failure will be treated with stimulants, such as coramine, strychnine or carbon dioxide. The patient is kept in bed until all signs of paralysis have disappeared.

3. *Toadstool poisoning* may be mentioned. It is due to a powerful alkaloid called muscarine, which is present in some fungi and has a similar action to pilocarpine, causing nausea, gastro-enteritis, sweating and great prostration. It is a most dangerous form of poisoning. The victim is pale and inclined to faint and becomes delirious and unconscious. Death may occur in a few hours from impairment of the heart's action.

Treatment.—Put the patient to bed and wash out the stomach and colon or give an emetic. Follow up with castor oil ʒi. The antidote is atropine gr. $\frac{1}{60}$, which should be given as soon as possible. Treat the patient for shock, get fluid into the body and stimulants may be required.

4. Rye bread poisoning is rather interesting. The growing rye is sometimes attacked by a fungus from which we obtain the drug ergot. Poor peasants who must eat the blighted rye as bread tend to develop a condition of gangrene of the extremities due to contraction of the arteries. These symptoms differ to those produced by an overdose of ergot as a drug.

In all cases of food poisoning it is important to see that no more of the poisoned food is eaten, and a specimen should be saved where possible.

QUESTION FOR NEXT MONTH.

In what common conditions may Ascites develop? How would you prepare a patient for paracentesis abdominis?

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