

OUR PRIZE COMPETITION.

WHAT IS PROBABLE CAUSE OF POST-ANAESTHETIC VOMITING? MENTION THE PRECAUTIONS GENERALLY TAKEN TO PREVENT IT. WHAT TREATMENT HAVE YOU KNOWN IN A SEVERE INTRACTABLE CASE, AND HOW MAY A NURSE ASSIST THE PATIENT?

We have much pleasure in awarding the prize this month to Miss Kathleen Delainey, Booth Hall Infirmary, Blackley, Manchester.

PRIZE PAPER.

The probable cause of post-anæsthetic vomiting is Acidosis.

Acidosis or Ketosis (from Ketone) is a faulty use by the tissues of food stored in the body, chiefly fats, due to a temporary defect in the chemistry of the body which prevents the normal oxidization of proteins and fats of the dietary, so that poisonous substances are formed.

The normal end products of the metabolism of fats are carbon di-oxide and water, but in acidosis the metabolism of fats results in the production of two acids. Oxybutyric acid and aceto-acetic acid, and these acids or ketones, because of their acidity, poison the blood stream, and if unchecked will result in intractable vomiting, rapid wasting, delirium, and stertorous breathing.

Coma and death may occur in four or five days.

CAUSES OF ACIDOSIS (Post-Anæsthetic).

Excessive emotion, starvation, carbo-hydrate depletion, too strong purgation. An anæsthetic drug—chloroform is the common cause.

Starvation or partial starvation causes the metabolism of proteins to lead to the production of the above-mentioned acids, and when the fat reserves are used up at the end of the period of starvation these reach a high level, because of the increased destruction of protein for energy requirements.

Carbo-hydrate depletion.—In strong emotion and when there is excessive purgation, the carbo-hydrates are used up first and in the form of blood glucose carbo-hydrates must combine with fatty acids before these can be burnt up for oxidization by the tissues, and when the blood glucose is used up, or there is insufficiency, the final absorption of fats is interfered with—resulting in acidosis.

Poisoning by chloroform.—This anæsthetic drug affects the liver, which is the store-house of carbo-hydrates.

Vomiting, retching and nausea are frequent after ether, but often these prove temporary, and if persistent are usually due to the above-named causes.

Diabetes Mellitus, and Nephritis, predispose to intractable vomiting, but if acetone or albumin is found in the urine, an operation is postponed where possible.

PRECAUTIONS TAKEN TO PREVENT ACIDOSIS.

Minimal emotion.—As far as possible, sleeplessness, over-exertion, fear and excitement, are prevented by getting the patient used to his position and surroundings before operation, and by keeping instruments, etc., away from his view.

No fluid depletion.—The bowels are regulated for a few days before operation, and strong purgatives are avoided. Fluids are given freely prior to operation.

Avoid starvation.—Starvation is prevented by giving

meals up to four hours before operation. The last meal is usually light and if the patient is an adult consists of weak sweetened tea and toast with syrup. A drink of weak sweetened tea can be given up to two hours before operation, but milk must not be added to either. For a child the last meal consists of a bowl of porridge, sweetened with either sugar or syrup.

Ample carbohydrates.—The patient is given a supply of boiled sweets or barley sugar, and sweetened drinks (not cocoa) as much as he will take during the twenty-four hours before operation.

During the operation the patient is kept sufficiently under the anæsthetic to prevent the action of the swallowing reflex; otherwise, chloroform or ether will pass down to the stomach and give rise to acidosis.

The patient is handled very carefully during transference from the operating table to his bed.

TREATMENT ADOPTED IN A SEVERE INTRACTABLE CASE.

The patient was a child of eight years.

The operation was tonsilectomy and adenoidectomy.

Vomiting commenced about four hours after operation; the vomit at first consisted of mucus and was coffee ground in colour; later, green; and finally, coffee ground in appearance, from straining, and its effect on the membrane of the stomach.

Vomiting was accompanied by retching and nausea, raised temperature, quick and feeble pulse, deeper respirations, intense thirst, extreme pallor, and later yellowish complexion, some delirium, and prostration; the breath smelt of stale apples and acetone was found in the urine.

Attempts to stop vomiting were made by placing the patient in a semi-Fowler's position supported by pillows. The mouth was washed out frequently, at first with cold water.

A stomach lavage of sodium bi-carbonate solution (1 drachm to 1 pint of sterile water) was given. Subsequently no fluids were given by mouth.

Hot fomentations were applied to the epigastrium.

Rectal infusions (5 ozs. three-hourly) of sodium bi-carbonate solution, with 2 drachms of glucose added, were given.

Ten cc.s. of sodium bi-carbonate with glucose solution were injected intravenously twice daily.

The mouth was given frequent and special attention, all septic matter frequently removed from the back of the throat (because a septic focus increases post-anæsthetic vomiting). After vomiting had ceased, small pieces of ice were given to suck, the sharp edges were rubbed off first and the ice placed on gauze which was tightly stretched over a cup, and served with a spoon.

Later, cold and frequently hot water were given, one teaspoonful at a time, and increased very gradually, varied by sweetened drinks, glucose and water, soda water, and lemonade.

The patient's condition improved, acetone disappeared from the urine and the odour from the breath.

The nurse can assist the patient in the following ways: Keeping him absolutely at rest by placing him in a room away from noises, and keeping worry of any kind from him.

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