

for January also is a very interesting number with a good terse set of rules for prevention of infection of enteric amongst nurses in force in Sydney Hospital, papers on the "League of the Empire" and "Schools for Mothers." They have now five bush nurses working in different parts who must be an undoubted boon, seeing the terribly rough, long and dangerous journeys that have often to be undertaken by invalids to procure nursing care; the doctor may be able to visit them, but alone in a bush hut what is to become of any serious case? It is to be hoped the bush-nurse system will be generously supported, so that it may become very general all over the Continent.

THE SURGICAL USES OF ANTISEPTICS.

THE antiseptic treatment of wounds is gone into so thoroughly in most modern text books that the only excuse for writing on this subject is its extreme importance.

At the present time every care is usually taken with operation wounds, but there is still a tendency to regard a septic wound as one which cannot be harmed by neglect of antiseptic precautions; this is a great mistake and leads to continued suppuration, destruction of tissue, and delay in healing.

Take the case of a wound inflicted with a dirty instrument or the wheel of a carriage; here early thorough treatment is all important, and our aim should be to render the wound as aseptic as possible.

The surrounding skin should be shaved and cleaned with soap and water, free use being made of the nail brush, and care taken not to further soil the wound with the washings. The wound must be thoroughly opened up, so that no pockets are left, and washed with antiseptic solution (Biniodide of mercury 1 in 1000) until the surface appears perfectly clean, all tags of soiled or injured tissue should be removed and the new surface dried and mopped with pure carbolic acid. The wound may then be closed except for a drainage tube which should be left in for 48 hours or longer if there is much discharge. Healing by first intention is not uncommon in wounds treated as above, especially in the case of wounds of the scalp which, if thoroughly cleaned, do exceedingly well, but if neglected they lead to serious complications.

In all cases a prophylactic injection of antitetanus serum is advisable, as it is impossible to be certain that all infection has been removed.

I have carried out this method of treatment as a routine practice for some years, and the only case in which tetanus developed was one of compound fracture just above the ankle which was so slightly soiled that antitetanic serum was considered unnecessary. Some surgeons advocate

painting the wound and surrounding area with Tincture of Iodine but in my hands this method has not proved so successful as the one described above.

A compound fracture should be treated in the same way and the wound filled with dry Iodoform powder which is allowed to cake and form a covering, more powder being added as the discharge soaks through. In cases where there is such discharge of pus it may be necessary to clean the wound and apply fresh Iodoform. If flies and other insects can be kept away further dressing is unnecessary and undesirable.

A septic contused lacerated wound of the hand or foot, such as is produced by machinery or the wheel of a carriage, is generally best treated by placing the limb in a bath of antiseptic solution which should be changed once or twice daily. At night it is generally advisable to substitute an antiseptic compress for the bath to enable the patient to sleep more comfortably.

The solutions most commonly used are—

Biniodide of mercury 1 in 5000.

Boric acid lotion.

Potassium permanganate solution (dark pink colour).

Lysol 1 in 1000 to 1 in 500.

Carbolic acid should not be used as even in the weakest solution considerable absorption may take place through a large raw surface giving rise to serious symptoms.

If it is necessary to continue the bath for many days it is advisable to vary the antiseptic from time to time, thus Permanganate of Potassium may be used one day, Biniodide of Mercury the next, and so on, as in this way the danger of poisoning is diminished.

Preparation of a patient for operation.—When the case is not urgent two or three hot water baths should be given to render the patient as clean as possible, and the day before operation the skin should be cleaned with soap and water, rubbed with alcohol and finally with Biniodide of Mercury (1 in 1000) and covered with a dry sterile dressing which is removed to allow the skin to be painted with a solution of Iodine just before the anæsthetic is administered, a second coat of paint is applied before commencing the operation.

It is important not to wash the skin just before applying Iodine, as this prevents the solution from soaking into the tissues.

In urgent cases previous preparation may be dispensed with and the skin simply painted with Iodine solution.

Sterilization of the hands and arms of all persons assisting at an operation is of extreme importance and should be carried out as follows:—

1. Washing with soap and water and nail brush for 5 minutes.
2. Rubbing with turpentine to get the fat out of the pores of the skin.
3. Washing again with soap and water to remove the turpentine.
4. Cleaning the nails with gauze soaked in 1 in 500 10 % alcoholic solution of Biniodide of Mercury.
5. Soaking the hands for 3 minutes in 1 in 1000 Biniodide of Mercury.

When possible rubber gloves should be worn but this does not do away with the necessity for thorough sterilization of the hands before putting them on. It is important to remember that hands are made septic by touching anything which has not been sterilized such as clothes, pocket handkerchiefs, etc., and the cultivation of an "antiseptic conscience" which tells one when it is necessary to resterilize instruments or hands is the duty of everyone engaged in surgical work.

Antiseptics.—*Carbolic acid* (1 in 20 or 1 in 40) is an efficient antiseptic, but may become absorbed through an open wound and cause symptoms of poisoning, it is also irritating to the skin.

Perchloride of Mercury (1 in 500, 1 in 1000, 1 in 2000) is largely used but as it coagulates albumin, forming with it an albuminate of mercury which is inert, it is not very reliable for use during an operation and is rapidly giving place to Biniodide of Mercury in solutions of the same strength which is equally potent and does not combine with albumin.

Lysol can be used with soap and water, and for this reason has of late years come into fashion but should not be relied on solely.

Dressings.—Theoretically an aseptic wound should be dressed with aseptic dressings (gauze and wool not impregnated with any antiseptic) and a septic wound with antiseptic dressings; however antiseptic dressings do no harm and are usually used for wounds of all kinds. Cyanide of Mercury, Double Cyanide (mercury and zinc), gauze and boric acid wool are at present most in favour.

Iodoform should not be powdered on a clean wound as it is useless in such a case and unless carefully sterilized may be the means of introducing sepsis. It is however extremely useful in tuberculous cases, as it checks the growth of and eventually destroys tubercle bacilli, but in all cases it should be carefully sterilized by keeping in 1 in 20 carbolic acid solution and dried before it is required for use.

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