

adequate stimulus for the bone marrow. We propose to test this assumption should a suitable opportunity arise.

5. Finally, transfusion has been performed where it was thought that the donor's blood contained antibodies for some specific infection. The recorded cases are few and further research is desirable.

Dosage.

We would suggest that except for severe and recent hæmorrhage large transfusions are unnecessary and possibly even harmful. Not that over-burdening of the heart is likely to ensue, but although preliminary tests eliminate gross incompatibilities they do not exclude lesser differences in individual bloods. The fact that some bloods cause phagocytosis of red cells while others belonging to the same group do not is an instance in point. The patient may have difficulty in coping with the lesser peculiarities of foreign blood; for these lesser incompatibilities do cause inconvenience as is evident from the number of slight reactions which follow the transfusion of blood from apparently suitable donors.⁵ On the other hand, if there is some factor in the blood which the patient requires, as in hæmophilia, it is likely to be more easily assimilated if given in repeated small doses. Therefore, since a small dose has, at any rate, as beneficial effects as a large one and is much easier to administer and obtain, we advocate its use. The important point is that it should be frequently repeated. Of course, the dosage must vary in individual cases. Probably 100 c.cm. once a week will be found enough in many instances.

As regards donors we, in common with other observers, have never found any ill-effect follow the loss of amounts of blood up to 250 c.cm. Indeed, after a single transfusion, the donor could not recognise that any ill-effect whatever had been produced. It is, however, unwise to bleed the same person too often. A loss of 250 c.cm. at weekly intervals will soon produce anæmia with accompanying dizziness and debility even in very healthy subjects.

In conclusion, we wish to express our warmest thanks to Dr. Collier for permission to publish this case.

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A PRIVATE EMERGENCY HOSPITAL.—A somewhat original scheme has been set working at the new Pennsylvania Hotel, New York. An emergency hospital, completely equipped and up to date in every particular, has been established in this hotel for the behoof of the 2000 employees, all of whom will receive free medical and surgical treatment. A medical man will be in charge and three trained nurses will assist him, while a fourth nurse will visit the homes of employees who are ill.

THE LATE MR. CHARLES HENRY HIBBERT.—Mr. C. H. Hibbert, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., who met his death in consequence of a fall while climbing the boundary fence after a ball in the cricket field on May 26th, was a well-known medical practitioner in the Marple district of Cheshire and a noted cricketer. Belonging to an old family of physicians and surgeons he qualified in 1893, having received his medical education at Owens College. He was medical officer of health for the Compstall urban district council and parochial medical officer for one of the districts of the Glossop union.

A NEW METHOD OF INCISION OF THE TYMPANIC MEMBRANE FOR ACUTE OTITIS.

BY R. LAKE, F.R.C.S. ENG.,
SURGEON TO THE ROYAL EAR HOSPITAL, ETC.

THE original method adopted for the evacuation of fluid within the tympanum was little more than acupuncture, the small spear-headed myringotome employed being merely thrust through the membrane in the hope of sufficient fluid being evacuated for the remainder either to be re-absorbed or not, according to circumstances. This method was so obviously unsurgical and unsatisfactory in its effects that incision of the drum took the place of puncture, at any rate amongst the then younger aurists (1). Incisions varied in length, direction, and situation. All had their advocates, though I think at the present time most aurists make their incision directly from above downwards and fairly freely.

For a long time this vertical incision (2) made boldly seemed to me to be the best, even in cases where there was thick mucus in the tympanic cavity and where the incision shown in the figure (3) was used. However, I found that,

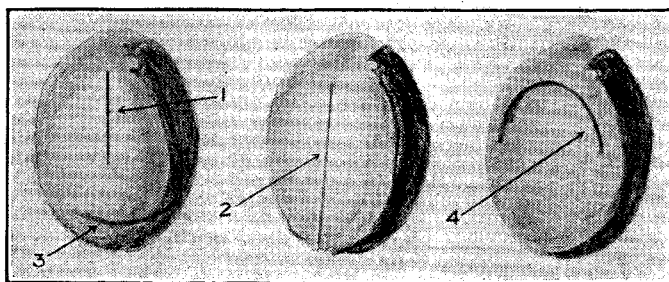


Diagram of bulging right membrane.

where one was early on the spot and saw the patient when the tympanum was first filling with fluid and mucopus serum or mucus was already causing the drum to bulge, where one had good anaesthesia and where one made this free incision that far too many cases went on to mastoiditis and subsequent operation.

It is, of course, obvious that in fulminating cases incision of the tympanic membrane, however efficient, will fail in the majority of instances, because the infection is already too widely diffused in the mastoid to be easily checked, but the number of fulminating cases did not seem to me to justify the proportion of failures.

This high average of mastoid operations after preliminary incision of the tympanic membrane, which was performed before definite symptoms of mastoid involvement occurred, seemed to indicate that the incision itself was not satisfactory.

Naturally the drum is not very elastic; an incision of a normal drum causes no gaping wound in the membrane, as those who have done intratympanic surgery, such as division of adhesions or tenotomies, &c., well know. So also are most aware of the extreme rapidity with which the edges of incisions in the drum adhere and heal; so that when the fluid which was present in the tympanic cavity was evacuated the incision was usually able to heal before a re-accumulation occurred. For the greater the previous distension the quicker the healing would occur, as the edges would lie longer in apposition.

It followed then that if the vertical incision was inefficient that also the curved incision (3) used for the evacuation of thick mucus in the floor of the cavity would be inefficient as one could only rely on the shape of the incision to keep a free vent so long as the flow of exudation from the middle ear and its adnexa was not too profuse to allow of healing.

The New Method of Incision.

The incision which I have adopted for the last few years seems to me to give better results than any I have previously employed, always provided that one employs a general anaesthetic and that the case is seen before there is any mastoid involvement either of the antrum or mastoid cells. And that is a crescentic or curved incision following the contour of the edge and of about the same extent of the posterior

superior quadrant—i.e., a curved incision with the convexity upwards (4). This in theory, at all events, should allow of a longer drainage, for the flap should tend to fall downwards. And, as a matter of fact, it does, though nothing like as much as one would expect, and this results from the absence of any yellow elastic fibres in the tympanic membrane.

After-treatment.

As immediate after-treatment is of some considerable importance I would recommend the trial of a combination of equal parts of 10 vols. of hydrogen peroxide and liquor sodæ chlorinata, mixed immediately before use and instilled or syringed into the external meatus *whilst effervescing*. By this means one not alone obtains the benefit of the mechanical effect of the evolution of oxygen from the septic material, but euclorine is at the same time forced fairly deeply into the middle ear and, may be, beyond.

As for the knife I believe a straight-handled knife to be the only shape that enables one to make a curved incision.

Cavendish-place, W.

SECONDARY SUTURE OF WOUNDS.¹

BY R. ATKINSON STONEY, F.R.C.S. IREL.,

VISITING SURGEON, ROYAL CITY OF DUBLIN HOSPITAL; MÉDECIN MAJOR, 2^e CLASSE, ARMÉE FRANÇAISE; LATE MÉDECIN CHEF, HÔPITAL DE LAMOTTE, VILLENEUVE-S.-LOT; LATE OPERATING AND CONSULTING SURGEON, V. SECTION, XVII. RÉGION.

SOME time ago² I showed some soldiers on whom I had operated at the Royal City of Dublin Hospital by cleansing the wounds with bipp and suturing them. The success of these cases determined me, on my return to France, to put this method into practice on a large scale. The results completely confirmed my previous experience.

Technique.

The ointment that I have used is made as follows: 2 parts of iodoform, 1 of bismuth, 12 of vaseline, and enough hard paraffin to give the preparation the consistency of butter. This modified bipp has advantages over the original³ and never produces symptoms of intoxication, though used in very large quantities.

Much has been written on the distinction between delayed primary and secondary suture, but in the cases on which this paper is founded the classification is simple. When the skin edges are not excised the operation is spoken of as delayed primary suture, and when they are excised it is secondary suture. We found that as a rule delayed primary suture could be practised up to about the seventh or eighth day after the infliction of the wound, and that after that date secondary suture was necessary.

The *steps of the operation* are as follows. After cleansing of the wound and surrounding skin with ether and iodine—

1. Granulation tissue, if present, is removed from the surface of the wound with a sharp curette.

2. The skin edges are separated by blunt dissection all round the wound for a considerable distance, varying with size of wound and loss of tissue; in large wounds it was found advisable to make the line of separation between the superficial and deep fasciæ to ensure a good blood-supply to the skin.

3. The skin edge all round is removed with sharp scissors, as a rule as economically as possible.

4. The whole wound thus made is dried thoroughly, any bleeding points being tied with fine catgut, then swabbed with ether or methylated spirit, and packed for a few moments with gauze wrung out of one or other of these liquids.

5. The wound is completely covered with bipp, which is thoroughly rubbed into the tissues and into all pockets or crevices with a piece of gauze, also freely smeared with bipp.

6. The tissues are sutured in layers with catgut so as to obliterate, as far as possible, all dead space; one, two, or three layers of catgut suture may be employed to unite the muscles, a separate layer is always used for the deep fascia. These sutures may be either interrupted or continuous, usually I employed the latter.

7. Finally, the skin is united by thick silk impregnated with bipp. Where there is no tension on the skin a continuous suture of fairly fine silk may be used, but where there is tension interrupted sutures of thick silk should be placed about every half-inch, passing through the skin from $\frac{1}{2}$ to 1 in. from the edges of the wound and including the whole depth of the superficial fascia, and it is well to include also a little of the deep fascia. Superficial sutures of silk-worm gut should be placed between the silk sutures, so as to obtain good coaptation of the skin edges. Finally, the wound is dressed with gauze, smeared with bipp, a thick layer of wool, and a tight bandage.

Slight variations of this routine may be advisable. For instance, in small wounds the whole wound may be completely excised by the knife, or this may be done at least to the superficial part of the wound and the separation of the skin edges undertaken afterwards. In old-standing wounds of a month or more it is advisable to excise the whole wound, or if this is not practicable to dissect away as much as possible of the thick layer of fibrous cicatricial tissue which underlies the granulations.

Post-operation Treatment.

Some irregularity of temperature is fairly common after these operations, and if not accompanied by persistent pain does not necessarily mean sepsis (using the word in its clinical and not its pathological sense). If temperature or pain or both continue after the third day the wound should be dressed and possibly one or two superficial sutures removed to give exit to a mixture of broken-down blood and bipp, seldom or never true pus. On no occasion was it necessary to remove all the stitches, even in the few cases which suppurated freely. And only quite exceptionally was the removal of a silk suture necessitated.

If there is no continued rise of temperature or pain the case need not be dressed till the seventh or eighth day, when the superficial sutures are removed. As a rule, however, in the case of large wounds or where there was much tension on the stitches I made a practice of removing the dressing and looking at the wound on the fourth day. The deep silk sutures should be removed from the tenth to the twelfth day.

In cases where there was considerable tension I found it advisable to keep the edges approximated by strapping for a week or ten days after removal of sutures. I found by experience that broad mattress silk sutures, even when protected by rubber tubing, did more harm than good. It is far better when there is great tension to content oneself with partial closure of the wound. Experience alone can help the operator to decide how much tension may be used with safety in order to close the wound. Michel's clips were found useless.

Condition of Wounds on Admission.

The majority of cases that came to our hospital might be roughly divided into (1) those directly from the front from 4 to 14 days after they were wounded, and (2) those from base hospitals, usually at Paris, arriving a month or more after being wounded.

The wounds of those who came from the base hospitals were always thoroughly septic, many being cases of compound fracture suppurating freely. As a rule, it was impossible to suture them, until, by dressing them every second or third day with bipp for two or three weeks, we had reduced the acuteness of the infection. At the end of this time, however, especially if the wound only involved the soft parts, we were frequently able to excise the wound freely and perform an operation of suture with satisfactory results.

On the other hand, cases which came directly from the front, had practically all been operated on there and the wound freely excised. On arrival these wounds were, as a rule, plugged with gauze which had been soaked in ether or Mencièr's fluid (a mixture of alcohol and ether with small quantities of iodoform, guaiacol, eucalyptus, and balsam of Peru⁴). The dressing had not been changed for 48 hours or longer and the wound was generally in a stinking condition, with considerable discharge. These cases were dressed immediately on admission, washed with Dakin's solution, the plug removed, and the wound filled with bipp and covered with gauze freely smeared with bipp. This dressing was repeated every second or third day, and from three to eight days after admission the case was, as a rule, considered ready to be

¹ A paper read at the Surgical Section of the Royal Academy of Medicine in Ireland, Jan. 31st, 1919.

² Surgical Section of Academy of Medicine, Jan. 11th, 1918.

³ THE LANCET, 1916, ii., 268.

⁴ Brit. Med. Jour., 1919, i., 412; THE LANCET, 1915, i., 269.