

The abdomen was slightly distended and the lower extremities were œdematous, face cyanosed and lips blue.

Brain.—Weight 38 oz.—

The membranes and sinuses of the brain were deeply injected and the sub-arachnoid space contained about 4 oz. of dark red fluid material.

Lateral ventricles contained a small quantity of coloured fluid.

Thorax-Pleuræ.—The pleuræ were adherent by recent adhesion to the chest-wall and contained a small quantity of sero-sanguinous fluid.

Pericardium.—Pericardium was considerably distended and thickened, and it contained about 4 to 6 drs. of deep coloured serum.

Heart.—Weight $8\frac{1}{2}$ oz. Full.

On opening the pericardium the coronary vessels appeared to be intensely congested and the heart much exaggerated in size. On section the cavities were widely distended and walls hypertrophied and contained dark clotted blood, especially the right auricle.

Lungs.—Weight, left, 14 oz.; right, 16 oz.

Both the lungs were intensely congested, indicative of the first stage of pneumonia; they exuded on section and pressure abundance of sanious frothy fluid.

Abdomen, Peritoneum and Alimentary Canal.—On section the peritoneal cavity contained about 12 oz. of straw coloured fluid. The peritoneum was congested and there was some yellowish lymph material attached here and there in patches. The external coat of the stomach was considerably bile stained.

Liver.—Weight, 43 oz.

Liver was congested and the gall bladder was full, containing 4 drs. of dark greenish fluid.

Kidneys—Right, 3 oz.; left, $3\frac{1}{2}$ oz.

Both were deeply congested, the capsules stripped easily.

Bladder.—Contained 8 oz. of high coloured urine.

popularity of the operation, as judged of by the following figures:—

From May 5th, 1904, to May 5th, 1905, 47 cases.

From May 6th, 1905, to May 5th, 1906, 98 cases.

From May 6th, 1906, to May 5th, 1907, 125 cases.

The practice of medical officers in the Southern Presidency affords additional and not less valuable evidence. Whereas previous to the publication of the above paper in 1905, there was, so far as one can trace, no record of the performance of this operation, in South India, there are now, to my knowledge, five medical officers who having seen me perform the operation, have themselves adopted it. Three at least of them have written to me, or told me, that they are fully satisfied; it is all that has been claimed for it.

Indication for Extirpation of the Sac.—In the presence of lachrymal obstruction of dacryo-cystitis:—

- (1) Dilatation of the sac;
- (2) Purulence of the sac-contents;
- (3) Evidence of previous attacks of phlegmenous dacryo-cystitis; with persistence of the stricture;
- (4) A history of long-standing obstruction, combined with inability or unwillingness on the part of the patient to submit to a long course of probe-treatment; or with a timidity which renders it unlikely that such treatment will be persevered in;
- (5) The presence of any indication for an operation on the globe of the eye (especially cataract);
- (6) The presence of a septic ulcer in the eye of the same side;
- (7) Any factor, occupational or otherwise, which increases the liability of the patient to eye-injury. Not a few of our cases of septic ulcer of the cornea in Madras occur amongst fitters, goldsmiths and stone-masons; in all of the above and in many allied trades tiny chips of hard substance frequently fly up and injure the cornea;
- (8) The existence of double lachrymal obstruction with evidence of past or present mischief in one cornea is a strong indication for the removal of both sacs.

It would be almost easier to point out the indications for the old and conservative methods of dealing with lachrymal obstruction and dacryo-cystitis. They may be stated as follows:—

- (I) The absence of inflammatory or marked structural changes in the passages; and
- (II) On the part of the subject, (1) the courage and patience to persevere through a long, tedious and painful course of treatment, and (2) the means and the leisure to give the necessary time required by the surgeon.

In other words, given an early simple case, in a man of means and leisure, we may adopt conservative treatment, always with the proviso, that failing success, we fall back on extirpation of the sac.

A Mirror of Hospital Practice.

SOME NOTES AND OBSERVATIONS ON 310 CONSECUTIVE OPERATIONS FOR EXTIRPATION OF THE LACHRYMAL SAC.

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EXTIRPATION OF THE LACHRYMAL SAC.

In the *Indian Medical Gazette* of August 1905, the writer published the results of 47 operations for the removal of the lachrymal sac, which he had performed in 12 months in the Government Ophthalmic Hospital, Madras. In the present paper he proposes to deal with 310 consecutive operations of the above nature performed on 235 patients, and to discuss the results obtained.

Those operations were performed in hospital and private practice in Madras between May 5th, 1904, and October 8th, 1907 ($3\frac{5}{12}$ years). A number of operations have been since performed and are still coming in, but cannot be included in the present paper. The relief afforded may in some measure be gauged by the increasing

STEPS OF THE OPERATION.

Preliminaries.—The operation is performed under chloroform, the patient being prepared in the usual way. The sac is squeezed dry of its contents, which are caught and removed on antiseptic swabs; the face is again washed.

The surgeon sits facing the patient's head as shown in the diagram; the patient's head is towards the light, and his feet away from it; but he is placed obliquely (according to the side), so that the light falls on and illuminates the side of the face on which the operation is being performed. The position of the tray for instruments, of the assistant, etc., are shown in the diagram.

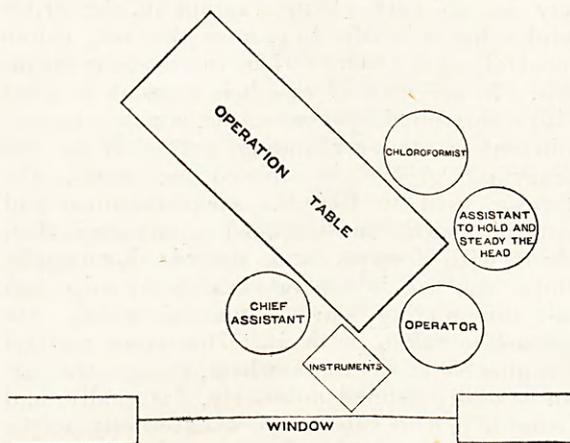


Diagram showing position of Table, Operator, Assistants, etc., for Extirpation of Left Lachrymal Sac.

(1) *Skin Incision.*—Define the internal palpebral ligament by pulling the lids outwards; and make the lower border of this the upper limit of the incision; it is practically never necessary to divide this ligament, and it is most advisable not to do so, as when it is divided there is a risk of deformity after healing. Next, define with the finger the anterior lip of the lachrymal groove, and cut boldly down on to this, following its course, with a crescentic incision first downwards and then outwards. The average length of incision in the 310 cases was 20 mm. Easy cases only require an incision 15 to 18 mm. long, whilst matted tissues demand much more room (the maximum in any case being 27 mm.).

(2) After separating the lips of the wound by the aid of a Müller's retractor, define the layer of fascia which closes in the lachrymal groove, and divide this throughout the length of the skin incision. This may usually be done with the end of a small sharp elevator. With the same instrument, the sac is separated from the adjacent bone, internally and posteriorly. If not adherent, the sac may also be cleaned with the elevator on

its outer side as well, up to the point of entrance of the canaliculi.

(3) The dome of the sac is seized with a fine pair of forceps (conjunctival forceps do well) and drawn firmly downwards, whilst a pair of blunt-pointed scissors curved-on-the-flat, are used to free the dome from its upper attachments (working under the palpebral ligament for this purpose) to cut through the canaliculi, and to follow the sac down into the nasal duct; this duct is divided as low as possible, the sac being pulled firmly up for the purpose.

(4) As large a probe as possible (Nos. 9 to 12 Theobald) is then thrust down the nasal duct, till stopped by the palate pushing any mucous membrane in front of it, and a red-hot spindle-shaped cautery is thrust boldly down the duct, to ensure the destruction of this membrane.

(5) The cavity is dried and examined. The removed sac is carefully examined under water and slit open to make sure that no part has been left behind. If any portions have been so left, they are dissected out; and if necessary the neighbourhood of the dome of the wound is cauterised freely with a ball-shaped red-hot cautery.

The cavity is freely flushed with a 1—3000 solution of bin-iodide of mercury, and the wound closed with three skin sutures. An aseptic pad and bandage closes the eye of the operated side, the other being left free.

The case is dressed on the seventh day, when the stitches are removed and the eye is released.

Hæmorrhage is dealt with by means of pressure and the use of adrenalin chloride solution. Any troublesome bleeding point is touched with the red-hot cautery. For pressure I have always used sterilised swabs of cotton wool mounted on stitches 4 inches long, and about $\frac{3}{16}$ inch in diameter.

When the case is complicated by the presence of a septic ulcer of the cornea, the latter is dealt with at the same sitting. Of many methods tried none give such good results as the use of the red-hot cautery, combined with paracentesis of the chamber. Such eyes are opened daily, and protargol solution (1 to 8) is instilled; atropine or eserine are used as indicated.

COMPLICATIONS MET WITH BEFORE OPERATION.

- (1). Acute abscess of lachrymal sac, with phlegmonous inflammation of surrounding face.
- (2). Lachrymal fistula.
- (3). Ulcer of the cornea, especially of the septic type.
- (4). Cataract or other deep-seated disease of the eye.

With the exception of the first, all these have been dealt with elsewhere in this paper. It is the custom here to incise a lachrymal abscess freely, at the same time curetting its cavity,

and sponging it out with a solution of perchloride of mercury (1 per cent). When the inflammation has subsided, the sac can be removed; it is necessary to wait about a month as a rule. In one case the sac was extirpated within a few days of incision. The circumstances of the patient left no apparent alternative, as otherwise she would have gone away and probably soon had a return of the severe inflammation when she was away from medical aid. As a routine measure such haste is inadvisable.

DIFFICULTIES AND COMPLICATIONS MET WITH DURING OPERATION.

(I). The terminal branch of the facial artery should be avoided in the first incision, or it causes troublesome hæmorrhage (*vide* my paper, *I. M. G.*, August 1905).

(II). When the lachrymal sac is not dilated or distended, it is not uncommonly bound down into the lachrymal groove by a dense fascia, which appears to be a backward reflection from the *tendo-palpebrarum*. This fascia is often very dense; farther when the bridge of the nose is high, and the orbits are consequently deep-set, the plane of this strong band of fascia comes to lie nearly parallel to the median sagittal plane. On the contrary, a low nose-bridge and a flattened type of face throw this fascial plane farther forwards on its outer side, *i.e.*, more into the plane of the face; the obvious result of this latter conformation is to render the wound shallower and the sac more accessible. The former condition has naturally the opposite effect; both the depth of the wound and the plane of the sac tend to embarrass the operator, who may easily burrow outward into the orbit, and mistake a lobule of fat for the sac. Such an accident need never happen, if after a first clean skin incision, the wound is held well open (by a speculum or otherwise), all hæmorrhage is stopped, the nasal margin of the lachrymal groove is well defined with the finger, and the dense fascia cleanly divided as close to this bony edge as possible. The sac is at once seen lying within its sheath of bone and fascia, and the operation can be proceeded with on the usual lines.

(III). Hæmorrhage may be troublesome at three stages: (1) after the skin incision, (2) after division of the deep fascia over the sac, or during separation of the sac, and (3) from the nasal duct after the passage of the probe down its length. Firm pressure deals most easily with the first and second, aided if need be by a touch with a pointed cautery over any bleeding spot; the last is best stopped by plugging the wound with a cotton wool swab, to clean and dry it, and then rapidly passing a spindle-shaped cautery down the passage, before it has time to bleed again.

(IV). When there has been preceding phlegmonous inflammation and still more when there

has been a long-standing fistula, the superficial structures are so matted as to be unrecognizable separately. It may even be difficult to recognize the sac itself. If one cuts boldly down on the anterior crest (naso-maxillary) of the lachrymal groove, and separates the sac from the bed of the groove with the elevator, it is not difficult to seize the thickened sac wall in the grip of a fixation forceps, and then to cut the sac boldly out with the surrounding structures, keeping as close to the former as possible.

(V). When one desires to perform a cataract extraction, or other serious operation on the globe of the eye and the lachrymal passages are found (as tested by dropping fluorescein into the conjunctival sac and examining a handkerchief into which the patient is bid to strongly blow his nose) to be closed, even though there may be no very obvious retention, the writer thinks that it is safer to remove the sac, before undertaking the more serious intra-ocular operation. In this class of case it is common to meet with a shrivelled, contracted sac, which is tightly adherent to the surrounding parts. If so, the lachrymal groove is opened as usual, the elevator used to free the sac on the inner and posterior aspects and the head of the sac is then seized with forceps, and drawn downwards, whilst the sac is separated snip by snip from the surrounding parts, some of which are necessarily taken with it. The same method is applicable to the cases, where, though the sac can be easily defined anteriorly, internally and posteriorly, it is yet adherent externally to the tissues in its neighbourhood, as the results of long-standing past inflammation. It is a question of operating by feel rather than or at least more than by sight; and it is better to proceed boldly, and if any portion of the mucous membrane is left behind to remove it after stopping all hæmorrhage, when the wound can be freely and well examined. The writer makes it a rule to consider that, if the cavity does not look clean, or in other words, if he is in doubt as to the thoroughness of the operation, the whole of the sac has not been removed. Nothing less than a thorough inspection of the wound should then suffice. A paraffin syringe was obtained for the hospital in the earlier days of this operation with a view to defining the limits of the sac in difficult cases. Before it had time to arrive, farther experience had shown that it was always possible, granted a little perseverance, to thoroughly extirpate any sac. The troubles of paraffin injection have thus been avoided, though it is conceivable that the use of this method would appeal to some, who have not the opportunity of doing many operations of the kind, and who might on this account be only right to use all possible aids. One cannot but think, however, that the difficulties of the operation have been over-estimated, for out of 325 extirpations performed in this hospital during the last 3½ years, there has been only one in which it

was necessary to operate a second time on account of a portion of the sac wall having been left behind; moreover, the case in question was only the fourth of the series and the writer, before commencing extirpation himself, had only seen one previous operation of the kind (by Prof. Volekers of Kiel).

(VI). When there is extensive and deep ulceration of the cornea complicating the case, it is necessary to be most careful to avoid pressure on the globe during operation; as otherwise the eye may be ruptured with escape of its contents.

(To be continued.)

A CASE OF PROSTATECTOMY.

BY J. J. PRATT,

LIEUT.-COL., I.M.

MIR FIDA HUSSAIN, *æt.* 75 years, came under treatment at the Bulrampur Hospital, Lucknow, on the 25th September, 1907. He had suffered for the previous three months from symptoms of serious bladder trouble—difficulty in micturition, pain, weight and fulness in the perinæum with alkalinity of the urine and some cystitis. Examination by the rectum and the introduction of a catheter confirmed the diagnosis of enlargement of the prostate. On the 27th September suprapubic cystotomy was performed under chloroform. The vesical wall was fixed to the abdominal parietes by sutures on each side and the bladder opened. The prostatic pouch was occupied by a uric acid calculus subsequently found to weigh a little over three drams. This was removed without difficulty. The prostate was enlarged to about three times its normal size, the whole gland projecting into the bladder as a collar-like enlargement around the meatus. The mucous membrane at the back of the middle lobe was torn through by the light index finger, and the enlarged organ enucleated with the greatest ease in two almost equal portions. The hæmorrhage, which was by no means excessive, was easily checked by means of pressure with hot water sponges. A rubber tube was passed into the bladder and the wound partly closed with deep sutures. Progress towards recovery was uneventful although retarded to some extent by two slight malarial attacks, one on the 9th October and another on the 7th November. The bladder was at first irrigated twice daily with warm boric lotion. On the 7th October it was noted that the stitches were removed and that the wound was granulating. On the 20th October the tube was removed; on the 22nd some urine was passed for the first time by the urethra, and on the 25th it was noted that the wound was contracting. On November 13th the wound had closed entirely, urine was passed naturally, and the patient was discharged cured.

In my experience cases of enlarged prostate, though perhaps not actually rare, seldom come under treatment in this part of India. This is only the second occasion on which I have had the opportunity of practising the operation which patient and Surgeon alike owe to the ability and energy of a distinguished retired officer of the Indian Medical Service. My first case was treated in the Fyzabad Civil Dispensary some two years ago, but the patient (as so often happens in this country) was removed from Hospital by his relatives before the ultimate result of the operation could be known. In both cases I was much struck with the simplicity of the procedure and the ease and rapidity with which an apparently formidable operation could be carried out.

ANTI-PLAGUE INOCULATION.

SOME SUGGESTIONS IN CONNECTION WITH THE REQUISITE APPARATUS.

BY C. E. PALMER, M.B. (CANTAB.),

LIEUTENANT, I.M.

THE following suggestions may be of interest to others of the Indian Medical Service engaged on Plague Duty.

Inoculations have often to be carried out in the district or away from one's main centres, and although the technique is simple, a considerable amount of somewhat bulky apparatus must of necessity be taken. With a view to carrying everything necessary as compactly as possible, I have had a box made for me which answers very well.

I have had it in use some time and find it fulfills all requirements.

The box is made of teak and any intelligent *mistri* can, I think, understand the attached diagram: cost of box should be about Rs. 10.

Compartment A.—Contains 300 doses of vaccine.

Compartment B.—Two syringes, wool, towels, etc.

Compartment C.—Parel steriliser; enamelled basin, etc.

Compartment { D_1 —Each contains an 8 oz. bottle in which I carry vaseline, carbolic acid and methylated spirit respectively.

In the lid, fastened by means of brass catches, are the thermometer, a pair of forceps and a small spoon (the latter for removing vaseline from the spare supply). In connection with the box I take a folding table and a portable washing-stand with basin.

The whole of the above apparatus can, if necessary, be carried by one man.