Nursing of Diseases of the Eye.

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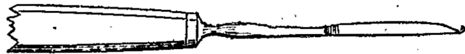
DISEASES OF THE LACHRYMAL APPARATUS.

It is probable that in this stage we are dealing argely with congested and swollen mucous membrane. If the inflammation of this structure be overcome, the duct will in all likelihood regain its normal calibre; if it be allowed to persist, the muco-periosteum is incited by congestion to form new bone, and the blockage may be permanent. In this early stage local therapeutic treatment may go far to assist a cure.

The punctum and canaliculus should be dilated, and the nozzle of a fine syringe passed into the lachrymal sac. If there be unusual difficulty, the canaliculus may be divided in part. The contents of the sac are washed freely out with a warm antiseptic solution, and then the sac is filled with a rather stronger astringent. Weak sublimate solution 1—2,000 is admissible for the first, protargol 5 per cent. or zinc chloride 0·2 per cent. for the second purpose.

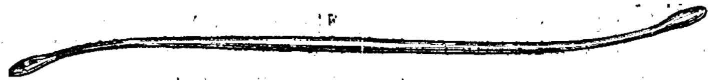
Should this prove unsuccessful, the case must be treated by other means. We must recognise that there is organic stricture, and the treatment by probing must be begun. For this purpose the canaliculi opening into the lachrymal sac are not, in their normal state, large enough to admit a probe of sufficient size, and the surgeon will divide one previous to probing. A conical dilator enlarges the punctum enough to admit the probe point of a



Weber's Canaliculus Knife.

Weber's canaliculus knife. The knife is passed into the dilated punctum at first almost vertically; as soon as the probe point has entered, the handle is brought to the horizontal position, the edge of the knife being turned towards the conjunctival margin of the lid, and the whole is thrust steadily on until the point is stopped by the inner wall of the sac and the bone behind it. The surgeon then holds the lid firmly, and brings the handle of the knife again to the vertical position, thus dividing the inner wall of the canaliculus in its whole extent up to the lachrymal sac.

The whole incision should lie on the inner surface of the lid, and therefore be invisible until the lid is everted. The question of rapid or gradual dilatation of the stricture is one that is not easily settled. In hospital practice, where time is an important item, we have often to adopt the rapid method; immediately after the division of the canaliculus, while the patient is still under an anæsthetic—if one have been given—the surgeon passes a series of probes down the lachrymal canal until one about 2 m.m. in diameter has penetrated the stricture. A series of probes should be placed ready to hand; the series is usually numbered from 1 to 8, each instrument consisting of two probes. They should be placed with the odd numbers all pointing in one direction, so that the surgeon can easily recognise and pass them in succession. The probe enters horizontally along the divided canaliculus; when it reaches the inner wall of the sac, the outer end is raised so that the probe lies in the general direction of the duct (downwards and a little out-



Lachrymal Probe.

wards and backwards); it will generally enter the upper end of the duct without much difficulty.

Occasionally one of the folds of lining mucous membrane may obstruct the entrance, and there may therefore be a little manœuvring necessary for the introduction. A finger placed just below the inner canthus will aid in guiding the probe in the right way. For withdrawal these movements are reversed. In the rapid dilatation the probes are passed in succession up to the largest size at one sitting. If the gradual method be adopted, a small probe is passed through the stricture, and left in for some minutes. It is then removed. Two days later the same probe is passed, and will usually be found to travel more easily. The next size may be then introduced and left for some minutes. In this way the size of the probe which the duct will admit is found gradually to increase until even the largest may be passed. This method, though not by any means painless, is less painful than the rapid dilatation, and can often be effected without general anæsthesia. The duct should never be made to bleed. The passage of the probe may often be entrusted to the nurse. It is sometimes a little difficult to tell whether the probe has passed through the whole length of the duct and entered the nose or whether it has been arrested at the lower end near the inferior turbinate bone. If the point to which the probe is buried in the sac be marked, and the probe then withdrawn and laid on the face in the general direction of the duct, the question is easily settled. If there is much tendency to re-contraction, the patient may be taught to pass the probe for himself. This is by no means easy to learn. The first step consists in allowing him to withdraw the probe which has been introduced, guiding his hand when the bulbous end has reached the lachrymal sac, into the horizontal position. When he has acquired a certain amount of confidence, the probe may be introduced into the sac and the patient encouraged to pass it through the stricture. Lastly, he must learn, in a looking-glass, how to introduce the probe into the canaliculus.