the mucous membrane soft, and helps to prevent crust formation.

Complications.

This operation is not without certain minor dangers, most of which can be avoided by careful management. Operations within the nasal cavities usually do very well, septic troubles being almost unknown. The few complications which occurred in the 100 cases under consideration are briefly mentioned.

Haematoma of the Septum.—In this case the nose was plugged on one side only with gauze strips. A few hours after the completion of the operation the patient sneezed violently and a portion of the plug was blown out, the patient pulling out the rest of it as its purpose was unknown to him. When I saw him the following day both nostrils were completely blocked by a typical haematoma of the septum. It was not incised, and the ultimate result was not unsatisfactory.

Perforation of the mucous membrane occurred in a small number of cases. I have not found it to be detrimental, but if it be recognized that a small perforation has been made, *make it a big one*. Small perforations are troublesome; large ones never are.

Haemorrhage may complicate the operation if undertaken with general anaesthesia. It is rare with local anaesthesia.

Secondary haemorrhage after the operation may also occur. Frequently it can be arrested without plugging if the patient be instructed to sniff (forcible inspiration), which has the effect of emptying the veins of the head and nasal cavities.

Synechia may form if adjacent surfaces of turbinal and septum be injured, but this is rare.

"Toothache," involving the incisor teeth of the upper jaw, is sometimes complained of after operation. It is usually only temporary, and is due to injury of the branches of the large palatine nerve in removing the crest.

Acute otitis media occurred in one case where the plugging had been continued longer than usual. A plug in the nose, no matter how small it be, always gives rise to an acute rhinitis, and it is just as well to warn your patient beforehand that for a short time after the operation the obstruction may be greater than it was previously. Complications, such as acute otitis, are more due to this than to the operation. In this case paracentesis of the drum became necessary, and gave the requisite relief. Recovery was uneventful.

Acute frontal sinusitis occurred twice, and was undoubtedly due to plugging. One case recovered by expectant treatment, rest in bed, warm fomentations, and strict attention to the nasal toilet, but in the other removal of the middle turbinal body was required with lavage of the affected sinus.

Tonsillitis was much more frequently observed, and this may also be traced to the plugging of the nose. It was usually mild in form, responding quickly to treatment.

A complication which is said to develop later is *atrophic rhinitis*. So far none of my cases have developed it, although, in a few, crusts which are difficult to expel continue to form.

REFERENCES.

¹ Lack, *Diseases of the Nose*, 1906, p. 104. ² Walker Wood, *Medical Press and Circular*, November 9th, 1910. ³ Parker, *BRITISH MEDICAL JOURNAL*, September 28th, 1908.

A CASE OF TONSILLAR CALCULUS.

BY

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THE patient in the following case, T. D., aged 30, a machinist, worked solely amongst metals. On January 7th, 1911, he consulted me at my house for inconvenience in the throat; he described it as "a tickling or roughness in the back of the mouth," which had troubled him for a month or more, but was increasingly troublesome during the last fortnight. He had worked all along until the day he called on me.

Previous History.—He had had only one illness, which occurred when he was a boy; it lasted about a month, and, from his account of the matter, it would seem to have been rheumatic fever.

State on Examination.—A swelling of the right tonsil was found, and between the pillars there was seen what looked like yellow membrane. Diphtheria being suspected, a swab was applied and the substance found to be very hard. Further examination with sinus forceps proved the substance to be something embedded between the pillars, but non-adherent to the wall.

Treatment.—On applying laryngeal forceps, they slipped twice. Fearing that if this occurred when extracting the body it might slip down the throat with disastrous consequences, one was forced to find a safer method of dealing with it. A pair of ovum forceps suggested themselves, and were applied. They held the body securely, and with steady traction it was brought through the opening, the parts being severely stretched, but there was no blood, nor any tearing of the tissue.

Result.—The body proved to be a calculus, of which the following is a report by the Clinical Research Association:

This specimen is about 2.5 cm. in greatest length, 2.5 cm. in greatest breadth, and about 1.5 cm. in depth, and weighs 4.635 grams (71.59 grains). It is but slightly nodular and has one surface very irregular and indented, but the others are roughly polished. Chemically it consists for the most part of calcium phosphate with a fair admixture of calcium carbonate and a trace of magnesium phosphate.

A part was decalcified and was found to be composed of necrotic calcareous debris, and no doubt represents a "plug" from a tonsillar crypt.

The urine, in consequence of this report, was subsequently examined, with the following result: Specific gravity 1020, slightly acid; neither albumen nor sugar; phosphates.

Microscope.—Numerous small crystals of oxalate of lime.

REMARKS.

Two features seemed to make this case worthy of a report:

1. The rare size for a tonsillar calculus.
2. The minimum of discomfort to the patient, he not losing from first to last an hour's work on account of it.

THE TREATMENT OF PULMONARY TUBERCULOSIS BY INDUCING AN ARTIFICIAL PNEUMOTHORAX.

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THE method of treatment of pulmonary tuberculosis by inducing an artificial pneumothorax is not new. It was first tried apparently by James Carson, who lived about 1840; recently Forlanini, Späth, and Murphy have improved the necessary technique, and reported many successful cases. Now Ludolf Brauer of Marburg, Lucius Spengler of Davos, and Saugman of Norway have carried out the treatment extensively, and, on the whole, very successfully.

The recent literature on the subject published in England seems to be limited to three articles in the *Lancet* of July 15th, 1911, advocating the method used by Saugman. I have learnt and practised Brauer's method, and from the cases I have studied and the literature I have read I think his method seems to offer a greater chance of success, and, on the whole, less danger to the patient.

The indications for this treatment are: (1) Pulmonary tuberculosis limited almost, if not entirely, to one lung. (2) Recurrent haemoptysis if at all severe. (3) Continued fever, cough, and general increase of disease on one side, while the other lung is healing, or only slightly affected. Slight inactive disease in the fairly sound lung is not a contraindication. The increase in the blood flow through this lung seems to influence the healing process favourably. In some cases it is impossible to produce a pneumothorax, owing to extensive pleural adhesions.

The operative procedures divide themselves into two distinct stages: the preliminary operation and the after-filling.