It is noteworthy that operators who do a great deal of bridge-work maintain that, after the attachment of a bridge to pyorrhœic teeth and roots, a very marked improvement, in some cases amounting to a cure, results. Even such support as is provided by a removable denture will very often assist greatly in improving the condition of such pyorrhœic teeth as remain.

The experience of other practitioners has confirmed the great value of cataphoresis combined with fixation.

In Mr. Goadby's lecture before quoted he says: "It is useless to preserve the gum and other tissues above the level of the bottom of the pocket, for, if the pocket be allowed to remain, it only becomes the site of fresh infection and the recommencement of the disease in tissues already weakened by the diseased process. On broad general lines the alveolar pockets should be eradicated, a process that is best performed by means of the electro-cautery, only a few, at the most three, teeth being treated at a single sitting."

Vaccine therapy has been practised by Goadby and others in the treatment of alveolar pyorrhœa in combination with local applications, curetting, electrolysis, etc.

Whatever the local treatment employed, so long as lowered resistance to the infective organisms remains, the disease is liable to continue, or, after apparent cure, to recur from time to time. "These facts," Goadby remarks, "and the consideration of the bacteriology of the disease, point to the urgent want of some method by which the general as well as the local infection may be attacked." After such severe operations as curetting and cauterisation the constitutional symptoms are likely to be exacerbated for a time, and Goadby considers that extensive operations of this nature should not be undertaken without "previously raising the general resistance of the patient to the infecting organisms."

Goadby's method is to prepare a vaccine from the organism or organisms isolated from the case under treatment which give the lowest opsonic index. A suitable quantity, according to the patient's opsonic index, is injected at the lower angle of the scapula, and the dose increased at subsequent injections as may be indicated. The effect of the negative phase must be allowed to pass away and the positive phase awaited before local treatment is commenced. "Curetting and cauterisation are then unlikely to cause infection."

Goadby's conclusion is: "The infection has been traced to its causative agents by means of the opsonic index of the individual's blood to organisms obtained from the local disease, which points clearly to the origin of the lowering of the general resistance of the individual, and the increased susceptibility of the whole of the body favouring secondary invasions..... The knowledge obtained of the lowering of general resistance to certain organisms gives a method of treatment somewhat laborious no doubt, but giving a logical and practical method of dealing with the disease."

Dr. T. J. Horder claims to have found specific inoculation successful, and says: "Show me now a patient who is suffering from pyorrhœa alveolaris due to streptococcus salivarius and I know how to treat him with fair promise of success."

Messrs. D. W. Carmalt-Jones and J. E. Humphreys have also had good results. They "believe that pyorrhœa alveolaris can, in some cases at any rate, be much improved and even cured by the use of vaccines made from bacteria isolated from the pus."

4. *Radical Treatment.*—Radical treatment of pyorrhœa consists in the extraction of all the teeth, when in the great majority of cases a complete cure results. The alveoli heal by granulation, all foreign matter and inflammatory products being extruded, and the mucous membrane closes over the surface. The edges of the socket become absorbed and their apices filled up by new bone, and the border of the alveolar process is more or less rounded off, as usual after the loss of teeth. Of course the customary antiseptic precaution should be taken until the tissues have completely healed.

Goadby, however, says that the general symptoms may continue for some time, and that it is advisable to remove a few teeth only at a sitting, or, if the whole dentition be removed at once, to raise the opsonic resistance beforehand by inoculation.

There is much yet to be learnt by study of this very refractory disease, and it may be hoped that in the future extension of our knowledge thereof observations carried out in this country will contribute not the least valuable share.

In the meantime the report of Mr. Goadby's paper on "Acute Pyorrhœa and Its Treatment," which was to have been read before the Dental Section of the British Medical Association on July 31st, may be read with interest.

A Mirror of Hospital Practice.

SPINAL ANALGESIA.

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The following cases with remarks thereon and some details of technique may be of interest.

The substance used for injection was in all cases A. E. Barker's Stovaine 10%, Glucose 5%, distilled water 85%. This compound was obtained in sealed ampoules from Krohnet Legeman, London. The cost comes to Rs. 6 per dozen ampoules or about 8 annas for each case

which compares favourably with C. H. Cl_3. The syringe used was that known as the Record with a capacity of 2 c. cm. The needle employed has a close fitting stylet. The point is hollowed out, thus securing sharpness without lengthening the terminal opening too much. A slender canula fits this hollow needle closely and projects about 1 mm. beyond its point when pushed home inside the hollow needle. The puncture is made with the needle (with the stylet *in situ*); as soon as the needle has passed the supra and interspinous ligament, the stylet is withdrawn and the needle pushed on. Finally, there is a sensation of pucking a tense membrane and the spinal fluid flows out as a rule rapidly either in drops or continuously. When about 10 c. cm. have escaped, the *canula already attached to the charged syringe* is pushed home through the *hollow needle* and the compound injected very slowly. The needle, canula and syringe are withdrawn and the puncture sealed with collodion. As regards the position of the patient during and after the puncture it was found much easier to inject the patient sitting on the edge of the table with his head well bent forward on to his knees. Then, if merely perineal anæsthesia was required he was laid on his back immediately after injection with a pillow under his head. But when a higher anæsthesia, say up to umbilicus, was necessary, the patient was laid on his back with a *sand bag under his buttocks* and two or more under his head. The result was the canal formed a curve with the lowest point about *the lower dorsal region*. This is important if one wishes to obtain a high analgesia.

The needle, canula and syringe were sterilised before and after by boiling them in distilled water in a special steriliser obtained for the purpose.

In the patient's skin after the usual washing and use of disinfectants—normal sterilised salt solution was freely used.

The puncture was made between second and third lumbar vertebræ as it was found easier in this interspace than between third and fourth. One point was noticed that gave rise to some confusion at first and led to some failures. If one marks out the exact site for puncture when the patient is erect and then punctures over the site marked, it will be found that the needle will strike against periosteum or bone. The spinous process is slightly tilted up, hence the result. This can be avoided by waiting till the patient has *well bent forward*, when if one places a finger over each process, the site for the puncture is accurately determined. It is important to get the patient to keep his spine quite straight in the vertical line. No doubt it may sound the easiest thing in the world to enter the canal every time, but it is not so in reality until one has had a little experience. To get some practice the writer induced some twenty patients to submit to lumbar puncture with no further end in view (than puncture). After these cases in which I had no less than 8 failures (at the first puncture) I tried my first injection.

Case 1.—*Infective Granuloma of Vulva*—Entered canal at second puncture—spinal fluid flowed in rapid drops—6 c.cm. removed. Analgesia up to iliac crests in four minutes. Loss of all reflexes up to this level. Motor paralysis ditto. Patient quite comfortable Analgesia lasted 1 hour and 25 minutes. After-effects nil except slight headache. Patient had had C H Cl_3 previously and said she preferred this method. [2 c. cm. of Stovaine and Glucose injected.] Anæsthesia was perfect, deep dissection and thermo-cautery.

Case 2.—*Amputation of Penis for Cancer.*—Male, aged 65—weak—c. s. fluid escaped in rapid drops one drachm removed—2 c.c. of Stovaine sol. injected. Analgesia in 3 minutes—operation began after 4½ minutes. Slight sensation on cutting suspensory ligament. Otherwise satisfactory. Duration of analgesia 50 minutes. No after-effects except slight headache which lasted 6 hours, but was never severe.

Case 3.—*Hydrocele*—Radical cure—size of a cocoanut. Analgesia in 4 minutes in scrotum and perineum up to a. s. s. in 8 minutes. Duration of analgesia 65 minutes. *No* after-effects. Injected in sitting posture laid flat on back with head well raised. Patient was astonished to find operation completed.

Case 4.—This was a curious case. Patient, a male, aged 58, complained of severe pain in the scar of an old operation; wound situated over linea alba above umbilicus in which was a small discharging sinus. There was much thickening and the mass felt like a tumor. On cutting down a hard substance was felt, and this proved to be the ends of an old silver wire suture embedded in the abdominal muscles. The ends were untwisted, cut with plier and the wire removed—the wire was nine inches long (No. 7 thickness). The track was cleaned and swabbed with Zn Cl_2.

This patient was turned on his back at once after injection with his hips and head elevated. Anæsthesia complete up to epigastric. The wire had been inserted 15 years ago by Colonel ——, I.M.S., in Hyderabad. No after-effects.

Case 5.—Removal of Extensive Cancerous Glands in both groins.

Laid on back with hips and head well elevated. Complete analgesia up to a. s. s. in 8 minutes; very large and deep dissection; operation lasted one hour, analgesia passed off in 1 hour and 50 minutes. No after-effects.

Case 6.—*Hydrocele*—Radical cure; result perfect; no after-effects.

Case 7.—*Hydrocele*, R.—Radical cure. A very nervous patient of 23 years, nearly fainted when needle introduced. *Bilious vomiting* 20 *minutes after injection* just as operation was completed. Had rather severe headache for 3 hours.

Case 8.—*Hydrocele*—size of very big cocoanut; second puncture necessary—had the least inconvenience, and although patient was nervous he was delighted with result. No after-effects.

Case 9.—*Large R. Hydrocele.*—Size of a large cocoanut. Puncture made with patient sitting up; rapid escape of cerebro-spinal fluid—ʒiss withdrawn—2 c c. of Stovain sol. injected. Patient turned on right side with head and buttocks elevated. Operation begun 4 minutes after injection; perfect result; no complaints and patient was loud in his praises of the method. Analgesia up to 1″ below umbilicus. No after-effects.

Case 10.—*Elephantoid Vulva.*—Woman, aged 40. The analgesia was rather slow in developing in this case; no motor paralysis till 10 minutes had elapsed; operation started 4 minutes after injection. There were no ill-effects except a slight headache; result very satisfactory; 2 c.c. injected as usual; patient laid on her back

after injection made in sitting posture. Upper limit of analgesia was line between ant. sup. iliac spines.

Case 11.—Removal of suspected malignant tumor from L. groin of a woman aged 40. This woman had been operated on some months ago for an infective granuloma of vulva (removed under spinal analgesia). The parts had healed, but the inguinal and femoral glands were enlarged and tender. Free incision from spine of pubes to ant. sup. iliac spine and tumor dissected out with glands, etc. Result very good but patient was very nervous and had, or at least she thought she had, slight pain near the close of operation.

In this case the patient was turned on her left side and the injection made in that position. Analgesia up to mid way between umbilicus and epigastricayle. No after-effects; patient quite pleased.

Case 12.—Radical cure, L. Inguinal Hernia—man, aged 25, very nervous and complained of the puncture; injection with patient on left side and buttocks elevated. Analgesia up to epigastric notch in 6 minutes. Patient suffered from nausea and felt faint for a few minutes (3 minutes after injection), given hot coffee with Brandy which relieved him Operation begun 5 minutes after injection quite satisfactory till skin sutures inserted when he felt slight uneasiness not amounting to actual pain. Operation lasted 45 minutes. Bassini's method.

These results have encouraged me as to the safety and efficacy of the procedure, and I hope to publish a further set of results shortly. The necessary outfit consisting of Record Syringe in nickel case and steriliser can be got from Krohnet Legeman, London, for about Rs. 40.

A CASE OF BLOOD CYST OF THE PERITONEUM.

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Patient, a Havildar, 18th Infantry, aged 33, came to me on June 19th, 1908, complaining of pain in the stomach. He was at Musketry practice when he felt a sudden sharp pain in lower part of the abdomen and said he then noticed a lump. He had had a hernia on that side some three or four years before and thought the lump was appearing again. There was no diarrhœa or constipation on examination; there was a hard cystic tumour in lower part of abdomen rather to right of mid line and extending to within two fingers breadth of umbilicus above.

The abdomen was rigid over it and it was painful on palpation. I thought at first it might be an appendix abscess, but there was no bowel trouble and his constitutional symptom did not seem severe enough for an abscess. His temperature was 100·8 rising to 102·4 in the evening. He had vomited once.

I put him to bed with a milk diet and gave him a dose of castor oil, and ten grains quinine three times a day, with a hot poultice over tumour.

The next day the tumour was much less tender and the abdomen less rigid over it. He had vomited once.

The next day the tumour was practically painless on pressure and could be felt more definitely. The temperature remained ranging between 101—102°. I thought this could not be due to the tumour, but urged the man to let me remove it. This he consented to do.

On June 22nd I opened the abdomen, all instruments, ligatures and dressings being boiled in the sterilizer lent me from the station hospital.

I made a vertical incision downwards over the tumour over the right rectus muscle. The rectus sheath having been incised, the rectus was deflected and the peritoneum opened.

A large cystic tumour very tense on palpation then appeared. (At this moment patient stopped breathing, so I was compelled to hastily cover up wound and resort to artificial respiration. In four or five minutes patient resumed breathing and afterwards stood the operation well.) I am afraid this rather upset the asepsis of the operation. I then tapped the tumour with a trocar and canula when over a pint of dark red fluid was evacuated. I was then able to investigate the tumour and found it was a large cyst springing from the right iliac fossa close to the brim of the pelvis. I tied the pedicle in the same way as for ovariotomy and excised the tumour which shelled out quite easily.

The peritoneum was sown up by a running silk suture, and the skin and rectus sheath by interrupted silk sutures. The wound was dressed with dry gauze and the patient put back to bed.

The patient was rather restless at night, so I gave him an injection of morphia. Curiously enough, the temperature came down by lysis to normal within two days of operation. The stitches were removed on the 10th day when the temperature had begun to rise again slightly.

I found a stitch abscess had formed at the upper and lower sutures; the lower one soon closed on opening it out, but the upper persisted for a long time till the deep suture worked out when abscess closed. The rest of the wound healed by first intention.

Patient is now quite well and proceeded on sick leave.

On examining the tumour I found it consisted of a fibrous wall on the inner side of which was a velvety dark layer looking like blood clot. I had the wall examined at Kasauli and it was reported on as consisting simply of fibroustissue.

I look on the case as one of the rare tumours of the abdomen—a simple serous cyst of the peritoneum, and I think probably the pain was due to injury to the cyst causing bleeding into its interior, converting it into a blood cyst. The cyst must, of course, have been present some months before patient became aware of it.