THE TREATMENT OF MASTITIS.

By CHARLES J. WRIGHT, M.R.C.S.,

Surgeon to the Hospital for Women and Children at Leeds; Lecturer on Midwifery at the Yorkshire College.

My object is to direct attention to the beneficial effects of pressure in the treatment of milk-engorgement and ordinary inflammatory diseases of the breast.

In cases of painful lactation and puerperal mastitis, where the breast is swollen and indurated—whether suppuration threaten or not—we have been accustomed to direct that the mammary gland should be raised and supported by a suspensory bandage or handkerchief. Strapping with ordinary adhesive—or sometimes lead or belladonna—plaster has been practised both before and after suppuration, to the great comfort of the patient; but I doubt whether we have hitherto realised the benefit derived from a firm and equable pressure by a carefully-adjusted bandage placed over the opposite shoulder and round the chest, so as not only to support, but to uniformly compress, the mammary gland, or that we have sufficiently profited by the results of this practice systematically carried out. The comfort to the patient is immense; and, whether suppuration take place or not, the treatment may be continued up to the moment that the pus is evacuated, and from that time until the part is well.

Dr. G. Ranney, of Michigan, U.S., in a paper read before the Section of Obstetric Medicine at the Brighton meeting of the British Medical Association, drew attention to the good results of the pressure treatment; and I bring it before this Society, as the method I advocate does not receive much, if any, notice in the English or American text-books.

The following cases will illustrate the points to which I wish to direct attention.

CASE I.—Mrs. —, aged 43, was delivered of her eighth child, after a natural labour, on October 3rd. She made a good recovery, and I paid my last visit on October 18th. She had suckled all her children but two, one of which was stillborn. With her fourth child the milk failed her; this time there was from the first a good supply.

October 27th, the twenty-fourth day after delivery, I found the right breast hard, hot, and tender. A belladonna lotion was applied, the gland was slung up after being emptied with the breast glass, and the child cut off from it, and allowed to take from the other just sufficient to prevent it getting too full.

On October 31st, finding it difficult to support the breast with comfort, I proceeded as follows:—Having laid on a piece of lint moistened with belladonna lotion, and padded the breast with wadding, I took a calico roller, four inches wide and six yards long, and wrapped it firmly and evenly round the chest and over the opposite shoulder, alternately fixing the folds with safety pins as I proceeded, thus getting an uniform pressure over the whole of the affected mammary gland. The comfort was very marked and immediate, and it was no less interesting than remarkable to notice that deep finger pressure on any one spot gave acute pain, but immense relief was experienced on uniformly applying firm pressure with the bandage. The right arm was kept as much as possible in a sling, but not bandaged to the side. This process was repeated daily for the next five days, the nipple being drawn slightly by an exhausting glass on each occasion.

On the sixth day of the application, finding fluctuation, I made an opening near the areola, under the carbolic spray, and let out about one ounce of pus. A drainage-tube was inserted, covered by a dressing of warm moistened sublimated wood-wool wadding, and a flannel bandage applied as before. This dressing was changed under spray on the second, fourth, seventh, and eleventh days after the opening was made, the part each time being firmly bandaged. No more pus exuded, and on the fourth dressing the abscess was completely healed. A piece of Gamgee tissue, powdered with iodoform, was placed over the nipple, and the pressure treatment continued. As the other breast contained much milk, and the patient was anxious to nurse, the child was allowed to use it. This caused a little difficulty in applying the bandage, as it had to be fixed with safety pins, chiefly round one side, so as to avoid constricting the actively secreting gland.

For two days I tried a broad elastic bandage, and, although it was a great comfort to the inflamed organ, it pressed too much on the active one, and had to be discontinued. As some thickening and hardness remained a month after the pus was evacuated, some firm strapping was applied in addition to the bandage. A continuation of this treatment cleared up the case. Some milk exuded from the nipple of the affected breast at each dressing, and it still (March,

1887) oozes at intervals, but it has not been deemed safe to resume the nursing with it.

CASE II.—An unmarried girl, aged 17, came to my out-patient room at the hospital on December 14th. Six weeks previously she was struck by a friend in play with the back of the hand over the right breast, which on admission was large, hard, and tender, feeling boggy, as if about to suppurate, on the outer side and near the nipple. She was taken in and put to bed, and a long, soft double napkin bound round both breasts, and firmly fixed with safety-pins. Two days afterwards the broad flannel roller was applied, and changed every few days. The temperature, which was 102.6° F. upon admission, came down to normal on the third day of the treatment. At first I hoped that we should avoid suppuration; but the temperature again rose, and I had eventually to make an opening, nearly four weeks after admission, and evacuated a large quantity of pus. This case is now well, after somewhat prolonged drainage, combined with bandaging or strapping throughout.

It was, however, worthy of note that in this case the pressure was such a comfort to the patient that it rather masked the condition when suppuration had actually taken place. It is, therefore, essential to be more especially on the watch for fluctuation where pain is practically in abeyance.

I have found this method of great use in other cases of painful breasts—1, in which a lady tried to nurse her child, but failed to have milk enough; 2, where milk was present in the breasts, but the mother was unwilling to persevere with lactation; 3, in a case of persistent mammary pain after abortion at two months; 4, in a patient who had reasons for not nursing a first child, though the milk was plentiful and the breasts very full and tender. In these cases the napkin fastened with pins was sufficient, and the tighter it was drawn the greater was the comfort to the patient. In the latter case, plasters also were used; but in future I shall endeavour to dispense with them in cases of simple suppression of lactation. It seems as if the pressure upon the acini and lactiferous ducts prevents, or at all events limits, secretion and accumulation in the gland, and encourages the absorption of inflammatory products, limiting considerably the area of suppuration when this takes place, and favouring the healing process after evacuation. The relief experienced in all my cases was most marked.

I have also tried the pressure treatment in other painful conditions of the puerperium; for example, in a case of severe perimetritic pain occurring within a week of delivery, where there was undoubtedly some peritonitis, pressure carefully applied over a poultice with a pad of wadding over the most tender ovarian region gave decided relief.

It is now, I hope, unnecessary to dwell upon the advantages of opening mammary abscess antiseptically, the great saving in time, trouble, suffering, and cleanliness to both patient and nurse admitting, I think, of no question; a small Siegle's steam-spray or a hand-spray is sufficient if the ordinary apparatus is not available; and Sir Joseph Lister has described a plan by which antiseptic precautions may be maintained without even using any spray.

Further experience will define the cases to which the pressure treatment is inapplicable; but at least in the case I have noted it is pleasant to contemplate the difference between pressure with comfort and Listerism, with rapid recovery, on the one hand, and the troublesome discomfort of slings and prolonged poulticing, with discharge for weeks or months, and the sinuses and re-formed abscesses healing with ugly scars, the result of the older treatment.

ON THE TREATMENT OF CONICAL CORNEA
BY THE ACTUAL CAUTERY.

By W. J. CANT, M.R.C.S. ENG., L.R.C.P., Lincoln.

I wish to bring before your notice what seems to me to be a most successful operation for conical cornea, which was first suggested and performed by the late Dr. Edwyn Andrew, of Shrewsbury, who reported a case where the operation improved the vision from $\frac{1}{5}$ of the normal to $\frac{1}{2}$. When one sees a case of conical cornea, a sense of helplessness is always felt, as the transparent cornea is thinned and bulged, distant and near vision bad, from the irregular astigmatism produced, the patient also being in delicate health. Glasses, tonics, and local applications are almost useless, and relief can only be obtained by operation, which, in the cases I shall mention, is done by making a minute opening through the centre of the cone with a heated needle cautery. The operations now in most favour are performed by removing a piece of the cornea from the centre of the cone by the knife or trephine, which, besides being rather difficult to do,

has the great disadvantage of, in many cases, being followed by anterior synechia, which frequently leads to loss of vision in the eye operated on, and occasionally to sympathetic ophthalmia in the other. It seems to me that any operation which is liable to be followed by anterior synechia should not, from that fact alone, be lightly undertaken. The new operation lessens greatly the difficulties and dangers of the above. With a very fine needle cautery highly heated a minute opening is easily made through the apex of the cone, this permits a continuous escape of the aqueous for from seven to fourteen days, giving rest and time for the weakened cornea to contract to its normal curvature, the well-known contractile power of a burn adding greatly to this.

No anæsthetic except cocaine is necessary, there being pain neither during nor after the operation. It is necessary that the pupil be thoroughly dilated with atropine before commencing to operate. No speculum should be used, and no pressure put on the eye during the operation, an assistant gently raising the upper lid. Directly the cautery has penetrated the cornea it must be removed, the eyelids closed and not opened again for three days, a little castor oil with atropine being gently rubbed along the lashes every morning, and the wool pad readjusted.

It is generally easy to tell when the cautery has penetrated the cornea, as a hissing noise is produced by the aqueous coming in contact with the hot iron, but during the operation the cautery may be occasionally removed, which allows the aqueous to escape directly there is perforation. I performed this operation on the right eye of a girl about six months ago; there was no difficulty whatever in the operation, and the wound healed up in about ten days. Before it was performed the vision was less than $\frac{1}{4}$, and she could see print only when very close to the eye; as soon as the wound healed, the vision had improved to $\frac{3}{4}$ of the normal. Such a result as the above is very encouraging. The patient came again two months ago, and asked to have the same operation performed on the left eye, which had been trephined about nine months before, and the vision was thereby improved; still greater benefit was, however, gained by my performance of the cautery operation. The advantages of this operation seem to me to be: (1) it is easily performed; (2) there is no risk of anterior synechia; (3) the slow and continuous drainage of the anterior chamber allows rest and contraction of the cornea; (4) the cauterised opening in the cornea leads to further contraction; (5) the scar is a small one.

A CASE OF ACUTE SPREADING GANGRENE, RESULTING IN RECOVERY AFTER AMPUTATION IN THE MIDDLE THIRD OF THE THIGH.

By BRIGADE-SURGEON C. H. Y. GODWIN, M.S.,

Assistant Professor of Military Surgery, Royal Victoria Hospital, Netley.

PRIVATE W. H., aged 36, sought admission into hospital on March 27th, 1887, on account of feeling ill, and having a swollen foot. He walked in, but required assistance, and gave the following history. On the afternoon of March 24th he had felt pain in the left instep, had a rigor, and felt generally ill. He nursed himself until March 27th, when he felt so bad that he was obliged to go to hospital. He had been in fair health lately, but some years ago he acquired ague in the West Indies, and has been liable to attacks of it occasionally since. He is very abstemious in his habits, and could not account for his illness. Some three or four months ago a corn on the ball of the little toe gave him trouble; he picked it with his fingers; it inflamed, and a little discharge followed, but this had all healed some time ago. On admission he looked gravely ill, had a high temperature (104.6° F.), quick pulse, dry brown tongue, and was very weak; the left foot was swollen, and over the distal end of the fifth metatarsal bone a black slough was seen. A probe when introduced passed at once into a cavity extending to the plantar surface of the foot, over which was seen the indurated cuticle of a large corn; a foul, fetid odour came from the part. The cavity was opened up and syringed out with iodine water, iodoform sprinkled over the part, which was dressed with wood-wool and sal alembroth wool. In the evening the foot was more swollen on the outer side, and the skin in parts, when touched, gave the crackling of emphysema, in the deeper tissues. A free incision was made through the skin, when some dirty, fetid, purulent fluid escaped; but the mass of tissue looked to be dead. The whole wound was now washed out with 1 in 2,000 solution of corrosive sublimate, and dressed with the sal alembroth wool. Ordered two grains of opium, also an ammonia and bark mixture, and as much milk and beef-tea as he could take.

March 28th. He continues very ill; the skin over the foot had bullæ,

which contained a dark sanious fluid; the smell was most offensive; the same dressings were continued.

March 29th. There were more bullæ on the skin of the foot; the fifth metatarso-phalangeal joint was quite bare, and the bones composing it looked to be dead. The oedema had extended up towards the external malleolus; on touching the skin the same crackling feeling of emphysema was noticed; but the skin was in no sense brawny. Another incision was now made into this emphysematous tissue, when the same dirty, stinking fluid escaped, and dead connective tissue was exposed. The opium was continued, but the ammonia was stopped, as he thought it to be the cause of his vomiting; the urine contained albumen.

March 30th. The oedema had extended up the leg; the skin looked white and tense, with many blue distended veins; there were more bullæ on the skin of the leg; a plantar artery gave way during the dressing. As it was quite evident that it was a case of acute spreading gangrene, amputation high up in the lower third of the thigh was performed by long anterior and short posterior skin-flaps. On dissecting up the posterior flap, a streak of gelatinous infiltration was seen, which was scraped away, and a portion of skin removed; the wound was washed with 1 in 2,000 sublimate solution, and closed in the usual manner. He was then removed to a fresh ward, with everything clean and fresh about him.

March 31st. Temperature 97° , pulse 80. Bowels moved three times; tongue becoming moister; had a most profuse sweat; no rigor.

April 1st. Temperature 97.6° , pulse 80. Bowels moved three times; no return of sweating; dressings changed, wound looking well; no smell; quinine gr. v, twice daily, with milk, beef-tea, brandy, and eggs.

April 2nd. Patient very drowsy; subsultus tendinum; inclined to pick the bedclothes; bowels moved five times; slept badly; urine passed into the bed; wound quite healthy; no tension.

April 3rd. General condition improved; eyes brighter; no subsultus; bowels open four times; urine not passed involuntarily; all albumen disappeared from it.

April 4th. Bowels moved eight times; wound appeared to have united, except where drainage-tube entered; but the latter had a distinctly sour smell when removed; skin of stump blistered by the wet sal alembroth, which was applied dry.

April 6th. Bowels opened five times; appetite good; patient cheerful; wound appeared quite healthy, and as if quite firmly united at edges. Owing to the continued diarrhoea all mercurial dressing was omitted, and salicylate wool used instead.

April 10th. Owing to some discharge on the dressings they were removed, when a gush of dirty puriform fluid escaped, but it was not offensive in odour; the edges of the wound fell apart, and then masses of dead connective tissue escaped, so that the wound looked to be quite cleared out, and the long upper flap of skin fell loosely over the end of the bone. The sloughing seemed to start from the place where the gelatinous infiltration had been noticed at the time of the operation.

April 11th. Sloughs all clearing out; skin not implicated from this date; the wound began to heal by granulation, and the man has made a good recovery.

REMARKS.—In this case there was the history of the inflamed corn, then the sudden accession of severe constitutional symptoms rapidly becoming adynamic and typhoid. A patch of gangrene at once formed, which spread up the connective tissues on the outer aspect of the leg, giving rise to the feeling of emphysema, and the skin only became affected quite secondarily. It all commenced on March 24th; on the 27th he came to hospital; on April 1st it had spread so high in the leg as to necessitate amputation in the thigh, when infiltration was seen to have extended to the posterior flap. After this the stump seemed to progress most satisfactorily, but the man showed signs of septic poisoning by the profuse sweat, vomiting, subnormal temperatures, diarrhoea, subsultus, picking of the bedclothes, drowsiness, and blunting of the mental faculties, and passing urine involuntarily; but as he rid himself of the ptomaines, he improved. Then came the breaking down of the newly formed tissue in the wound. The urine became free from albumen, and never contained any trace of sugar or of mercury. No line of demarcation could be expected in such a case. The disease is referred to in the *Report on the Pathology of the Diseases of the Army in the East*, 1856, by Dr. Lyons, and also by modern surgical writers.

An examination of the leg was made by Dr. McGill, Assistant Professor of Pathology. Nearly the whole dorsum of the foot was in a state of moist gangrene; parts of the soft tissues over the metatarsal bones had separated, but there was no line of demarcation. The whole of