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A MONTHLY JOURNAL OF PRACTICAL MEDICINE & SURGERY

Editor: Dr. P. R. Venkappaya.

VOL. VIII

MAY 1939

No. 5

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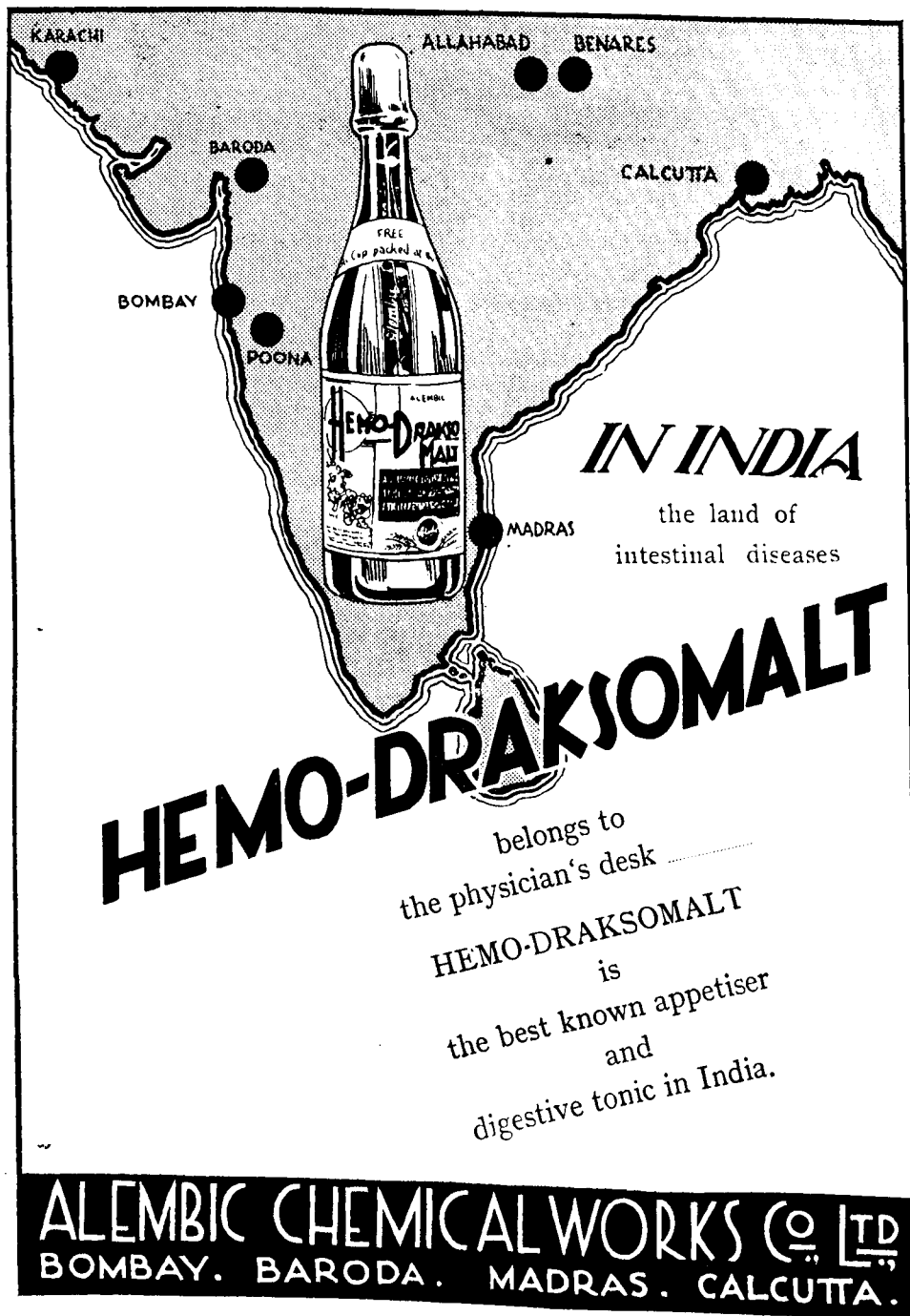
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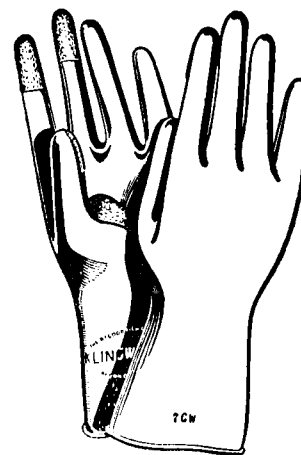
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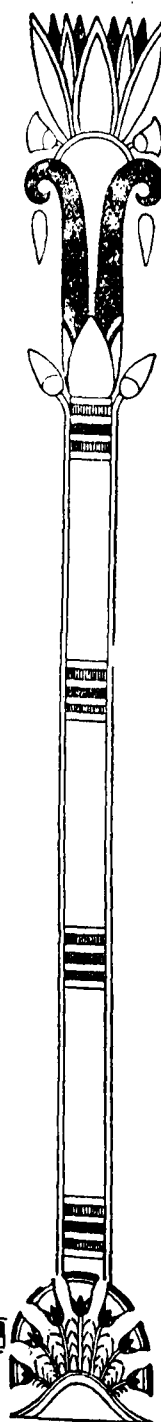
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MEDICO-SURGICAL SUGGESTIONS

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Articles.

MODERN METHODS OF TREATMENT.

ANO-RECTAL FISTULAE*

R. A. HALL.

R.S.O., St. Mark's Hospital.

CLASSIFICATION OF FISTULAE.

Fistulae have been described as :—

- A—Complete, *i.e.*, having both internal and external openings ;
- B—Blind internal, where an internal opening alone occurs ; and
- C—Blind external, where an external but no internal opening is present.

All fistulae to be described belong to one or other of these types. A fistula must not be thought to be blind external until exhaustive search has shown that an internal opening is not present.

The course of the main tracks has been classified by Milligan and Morgan on the basis of the anatomy described by them. They recognise :—

1. *Subcutaneous fistulae*—The track lies in the perianal space, and opens on two skin lined surfaces *i.e.* the skin of the anal canal and the perianal skin. It is superficial to all the sphincter muscles, and usually results from an imperfectly drained perianal abscess, or may occur as a secondary subcutaneous extension of another fistula. They are relatively uncommon.

2. *Submucous fistulae*.—In this case the track lies in the submucous space in the anal canal or even higher in the rectum. It follows a submucous abscess, or the extension into the space of pus from an abscess situated in proximity. It may exist alone or more commonly in association with another fistula. There is no rule

* This is the second installment of "Ano-rectal Fistulae" First installment appeared in the April issue of the Journal.

governing the site of the opening into the bowel, which may occur anywhere, but it probably most commonly occurs at the lowest point, e.g., at the level of the intermuscular sulcus. Similarly there is no rule governing the direction of the track, which may be vertical or horizontal or intermediately situated.

3. *Low anal fistulae*.—These are the commonest of all types. The external opening is situated close to the anal margin, usually about half to three quarters of an inch away, though a secondary subcutaneous extension may carry the opening still further laterally. The internal opening, which is nearly always present in this type of fistula, is to be found at the intermuscular sulcus. The direction taken by the track depends on the lowest fascial sheet from the longitudinal muscle, which separates the track from the ischiorectal fossa. The attachment of the longitudinal muscle itself to the mucocutaneous junction tends to prevent extension into the submucous space, but as this attachment is by digitations the barrier is incomplete, and a submucous extension is a relatively common occurrence.

4. *High anal fistulae*.—In this type the main track passes outside the fascial sheet mentioned above, and lies in the ischiorectal fossa. The external opening tends to be further lateral than in the low anal type, usually at about one inch distant from the anus. The internal opening, when the fistula is complete, occurs at some point in the upper two-thirds of the canal above the intermuscular sulcus, and the deeper part of the track passes with a relationship which varies in individual cases either above, through, or below the deep external sphincter. When complete, a submucous extension is nearly always present. As already stated, the submucous opening may occur at any point in the length of the submucous track. From this it can be seen that the situation of the openings is not a certain diagnostic sign, thus, a low anal fistula may have its external opening carried further laterally by a subcutaneous extension, so mimicking a high anal fistula, and in addition a submucous extension may carry the internal opening into the upper two-thirds of the anal canal, yet as the track passes *between the subcutaneous and superficial external sphincters* it is a low anal fistula. Other methods of diagnosis will be mentioned later. Before leaving the anatomy of the high anal fistula, brief mention must be made of the frequent association of offshoots from the main track which pass upwards through the levator ani into the pelvirectal fossa. The subject will receive further notice under etiology and treatment.

The importance of recognising the high anal fistula as a definite type lies in the fact that the deeper part of the track may pass above the deep external sphincter, and in the operation of laying it open into the bowel the whole of the sphincter musculature would be cut with resulting incontinence.

5. *Pelvi-rectal fistulae*.—In these the main track lies in the ischiorectal fossa and pierces the levator ani to reach the pelvirectal space. When complete, it not only opens on the skin overlying the ischiorectal fossa but opens into the *rectum* above the ano rectal ring. Fortunately the majority of this type are blind external fistulae, as the complete variety are very difficult to treat, and indeed may be incurable. Even though no internal rectal opening be present, a high internal anal opening may be associated (see under High anal fistulae, Etiology, and Treatment).

ETIOLOGY.

Most fistulae are of simple pyogenic origin, tuberculosis is the next most common cause, and much more rarely other diseases. The exciting cause is in all cases an abscess, which may be pyogenic, tuberculous, or the result of one of the rarer granulomata. A carcinoma may be the site of entry of organisms resulting in a pyogenic fistula. The site of formation, the duration, and the position of pointing all help to determine the course the fistulous tracks will take. A fistula is an imperfect attempt on the part of nature to heal an abscess after its contents have been evacuated. If the abscess occurs in the perianal space, it may extend and eventually point either superficial to the subcutaneous external sphincter, in which case a subcutaneous fistula results, or it may go deep to the muscle when a low anal fistula is formed, but as the infection is limited laterally by the lowest lamina from the longitudinal muscle it cannot extend laterally into the ischiorectal fossa.

An ischiorectal abscess may extend in one of three directions, i.e., downwards towards the skin, inwards towards the anal canal, and upwards through the levator ani into the pelvirectal space. Forward and backward extension are not considered as in practice evacuation occurs before it attempts to pass the boundaries of the canal in these directions. Lateral extension cannot occur, as the lateral boundary of the fossa forms an insuperable barrier to infection. Inward extension brings it into contact with the fascial sheet already mentioned, and this guides the pus to the anal canal above the level of the anal intermuscular sulcus, and it would seem that the longitudinal muscle and indeed the whole thickness of the wall of the anal canal offers less resistance to penetration than the fascial offshoot from the longitudinal muscle. Should it point into the canal in this way a high anal fistula results. Upward extension may cause perforation of the levator ani and so the production of a pelvirectal fistula. Extension tends to occur simultaneously in all directions, and this explains the frequent association of pelvirectal fistulae with high internal anal openings.

Why an abscess should occur is not always clear, and many suggestions have been put forward in an attempt to explain this, but as

these are for the most part still hypotheses they need not be considered here.

Fistulae are sometimes seen in association with malignant disease. In old-standing cases epitheliomatous change may occur at the external opening, or even within the track if this has become epithelialized. A carcinoma of the rectum may invade the track from above and fungate through the skin. The writer has now seen three such cases and in each the carcinoma has been of colloid type.

Tuberculous sinuses leading from bone or joint disease may open into the perineum or even into the rectum or anal canal. As an example a patient attends St. Mark's Hospital at the present time who has a sinus at the great trochanter, another in the perineum and a third opening into the rectum, all communicating with a tuberculous hip.

The various dermoid and periurethral fistulae which occur in this region require differentiation, but are out of the scope of this article.

DIAGNOSIS.

Two points must be considered, the relationship of the main track to the musculature, and the pathology *e.g.*, whether simple pyogenic or tuberculous. The anal anatomy has been discussed already in some detail, and the landmarks have been described. Clinically the relations of the track can usually be discovered by noting the site of the external and internal openings, by palpating the induration along the track, and by probing. In the rare cases where these are insufficient one may need to resort to the injection of radio-opaque solutions, this is not often required, and in fact the writer has never seen the procedure done for this purpose.

Goodsall drew attention to the probable direction the track would take, and his observations are now dignified with name of 'Goodsall's law.'

Stated briefly, if the external opening lies anterior to the transverse diameter of the anus, the track will run back to open into the anal canal along a line radiating towards the centre of the anus; while if it lies posterior to this line it will take a curved course to open into the canal in the midline posteriorly. The law is extremely useful but by no means invariably true, as anterior 'horse-shoe' fistulae do occasionally occur as also do fistulae which run in a straight line to the anus in the posterior quadrants. The law is however obeyed by all classes of fistulae, low, high, and pelvi-rectal, in the majority of cases.

The induration in the low anal pyogenic fistulae can be palpated to the outer border of the subcutaneous external sphincter, in the high type the track lies more deeply and the induration palpated from the surface is soon lost in the ischio-rectal fossa, but it can be felt between finger and thumb when the finger is in the anal canal

and the thumb on the skin. In the pelvi-rectal type the induration is along the line of a track running almost vertically and does not appear to run towards the anus at all. As, however, high anal and pelvi-rectal tracks may occur together too much stress must not be laid on these findings. As will be shown later, induration is characteristically absent in tuberculous fistulae, in which other methods must decide the course of the track.

Probing, though an extremely useful diagnostic procedure, must be carried with great care as it is by no means a painless manoeuvre, and if force is used the probe may easily leave the track and thereby give misleading information and even spread infection further.

The Pathology of fistulae. The incidence of tuberculous fistulae has been put at very different orders of frequency by different authors. There are two chief factors which are responsible for this, different communities considered, and the difficulty of obtaining laboratory proof of the diagnosis. As an example of the first there is the fact that no fewer than 4 per cent. of tuberculous patients at the Brompton Hospital have such fistulae, and also the well known frequency of fistulae in tuberculous sanatoria.

To confirm the diagnosis the most certain method is by guinea pig inoculation of suspension of granulation tissue lining the fistula, but it is not a satisfactory method for routine use. Dr Cuthbert Dukes at St. Mark's Hospital, states that to make a histological diagnosis tubercles, giant cells, and signs of necrosis must be present in the section. He classifies his reports into 'characteristic of tuberculosis,' 'suggestive,' and 'not suggestive.' Histological methods give a slightly lower percentage of positive results than the guinea pig method, but at this hospital Gabriel reported between 13 to 20 per cent. of all cases were tuberculous. This probably represents a correct proportion for mixed communities.

Pyogenic fistulae are characterized by induration around the track, tuberculous, by the absence of any sign of inflammatory reaction. In the majority this is the only local sign which suggests the diagnosis, but less commonly the external opening may be large, and then it may show the undermining of the margins that is so characteristic of tuberculosis anywhere. In such cases one may be able to see right into the track, and the way the muscles can be seen lying as if 'dissected out' is very characteristic. A high proportion of patients with tuberculous fistulae show radiological evidence of pulmonary tuberculosis. Those fistulae which show gross and unmistakable clinical evidence of tuberculosis tend to occur in patients with active phthisis, and such patients may occasionally have rectal and colonic ulceration from the same cause. Pelvi-rectal fistulae may also be tuberculous, but though one is taught to think of intraperitoneal or osseous causes tuberculous disease in these regions

does not seem to lead to the formation of pelvi-rectal fistulae, or at least they do not reach a rectal hospital. The percentage of tuberculous fistulae of this type is probably no higher than in other types, and when it does occur the etiology is obscure.

(To be continued.)

CALCIUM THERAPY IN PUERPERAL INFECTIONS

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In considering the role of calcium in the treatment of puerperal infections it should be borne in mind that in this type of infection we no longer look upon the inflammatory phenomena as a defensive or even a reparative process. On the contrary and to prevent further extension of the disease, therapy is directed toward localizing the pathologic condition as quickly as possible. Inflammation here as elsewhere is characterized by local swelling due to exudation, pain resulting from increased tissue tension combined with smooth muscle spasm, increase in local temperature as a result of congestion, and an elevation of general body temperature due to absorption of toxic substances of bacterial origin and from tissue injury.

In conjunction with the general treatment of puerperal infections the most satisfactory medicament is one that will not only relieve the subjective symptoms but which will also improve the resistance of the patient, neutralize toxic substances and hasten the return of the pathologic state to a normal condition. Calcium, because of certain well known pharmacologic properties is a logical adjuvant in the treatment of this as well as other inflammatory disorders.

Bayliss showed, many years ago, that the calcium ion decreases cell permeability and thus tends to limit the exudation and transudation that accompany inflammation. According to Hamburger the ratio of calcium, sodium and potassium ions in a perfusing fluid is the determining factor in the formation of edema. The calcium ions tend to raise the resistance of the capillaries to permeation and at the same time act as a capillary stimulant, while the sodium and potassium ions on the other hand tend to increase the permeability of the capillary walls and favor exudation. Blum believes that the administration of calcium reduces the sodium content of the blood and prevents the migration of this ion into the tissues. Since water follows sodium the accumulation of fluid which generally accompanies inflammation is therefore inhibited by calcium. Januschke

first showed that typical inflammatory reactions produced by mustard oil can be prevented by the previous administration of adequate doses of calcium. Gold, and Rothlin both found experimentally that pleural effusion produced by the intrapleural injection of copper sulphate is considerably reduced by calcium salts. Smejkal and Pisani concluded from their observations on the use of calcium gluconate in artificial pneumothorax that the calcium ion not only limits exudation and transudation but hastens the absorption of any exudate already present.

Clinically, Behan found that the pain of cancer was entirely controlled or greatly modified by calcium injections, and Bauer, Salter and Aub secured dramatic relief from the abdominal distress of gallstone, renal and intestinal colic by the same method. Herrold, Rupel, Cerf, and Leff and Spencer have reported that both pain and edema in gonorrheal epididymitis disappear rapidly following intravenous infusions of calcium. Von Zalewski, Pizzi, Diasio, Parvey and others have noted favorable results with calcium therapy in gonorrheal salpingitis, particularly in the acute forms, and Parvey also pointed out its value as a hemostatic in gynecologic conditions in which bleeding is a symptom.

Theobald reviewed the literature on the therapeutic use of calcium in eye conditions and has reported good results with it in her own practice in acute and chronic uveitis, herpes of the cornea and corneal ulcer. Still others, including Nuhsman and Geiger, recommend the prophylactic use of calcium in operations on the nose and sinuses to reduce postoperative swelling and edema.

Tunnicliff and others have demonstrated experimentally on both man and animals that calcium increases phagocytosis by the leukocytes of the blood. Phagocytosis is, of course, one of the protective mechanisms of the body. Finally, Minot and Cutler showed that calcium protects liver functions and is a physiologic antidote for toxic products generated from tissue injury occurring in the course of toxic states.

All of these properties of the calcium ion have a place in the treatment of puerperal infections. With calcium therapy the lower abdominal tenderness and pain are quickly relieved, the temperature rapidly returns to normal, and further exudation is not only checked but the reabsorption of existing exudate is hastened.

Previous to the introduction of the gluconic acid compounds of calcium, the chloride and lactate were generally used. The irritating effects of both the chloride and lactate salts make these unsuitable for intramuscular injection, since their irritant action may cause induration and even abscess formation. Calcium chloride in particular is relatively quite toxic. The nausea and vomiting that sometimes follow its intravenous administration and the other symptoms of shock that may accompany its use, unless it is given

very slowly and with the greatest of care, limit its practical usefulness. Furthermore, both the chloride and the lactate are unpalatable and not suitable for prolonged oral use.

These objections have been overcome by the development of calcium gluconate (Calglucon) which is available in the form of tablets and granules for oral administration. Calcium gluconate contains 9.3 per cent of calcium ion; the gluconic acid radical, an oxidation product of glucose, is completely burned in the body. For safe intravenous infusion and painless intragluteal injection the double salt of calcium gluconate and calcium galactogluconate is now being used and is available, under the trade name Neo-Calglucon, in stable ampule solutions equivalent in calcium-ion content to 10 per cent and 20 per cent solutions of calcium gluconate. The method of administering calcium employed in this study is a combination of that described by Von Zalewski supplemented by oral administration. The contents of a 10 cc. ampule of Neo-Calglucon were taken into a 20 cc. syringe, the needle was then inserted into a vein, and 10 cc. of blood was withdrawn and permitted to mix with the calcium solution. One half of this mixture was reinjected into the vein, and the other half, after withdrawal of the needle, was injected deeply into the gluteal muscle. This method combines the rapid and intense effect of the intravenous injection with the slower but more sustained action of intramuscular absorption and in addition induces protective protein therapy action.

Daily injections were given in the majority of cases but usually were not required beyond 10 days. To intensify and prolong the effects established by the injection 1 heaping teaspoonful of calcium gluconate granules was given 3 times each day in milk or water. Oral dosage was continued even after the patient was discharged from the hospital to prevent any possible excitation of the infectious process.

In the obstetrical patient the violent peristaltic action of the tubes at the time of labor may result in the exacerbation of a latent infection. Parvey, for instance, reported the reappearance of symptoms of tubal inflammation following abortion. Further, a new infection may gain entrance to the uterus through the open blood or lymph sinuses.

This study based on 26 puerperae in whom the temperature persisted above 101 F., for more than 48 hours without a demonstrable cause outside of the pelvis. The chief complaint was abdominal pain and tenderness located in the lower portion of the abdomen. The pain was bilateral in 18 cases and unilateral in 8. Other complaints were frequency and urgency of urination. In 14 cases the vaginal discharge was putrid, and in the remaining 12 the discharge had decreased, although the constitutional symptoms were greater. Microscopic examination of the discharge from both cervix and urethra was positive for gonococci in 2 cases and negative in 24.

The treatment employed in this series of 26 cases was:

Rest in bed.

Ice bag to the lower portion of the abdomen.

Elevation of the head of bed.

Fluids in quantity.

Milk of magnesia when necessary.

No sedatives, douches or powerful cathartics.

Neo-Calglucon, 1 ampule of 10 cc. of the 10 per cent product injected intragluteally and intravenously as suggested each day.

Calcium gluconate granules, 1 heaping teaspoonful 3 times daily before meals in warm milk.

While injections were painless there was a generalized sense of warmth that lasted from 2 to 3 hours. The calcium given orally acted as a mild laxative, and as a rule no milk of magnesia was required.

With this treatment the average hospitalization period was 14 days, varying from minimum of 9 days to a maximum of 22 days. This disability time compared favorably with that in a similar group observed previously and to which the same treatment was given except for the omission of the calcium. The following table gives the essential data in this series of cases.

PUERPERAL INFECTIONS

Number of cases treated—26.

		MINIMUM	MAXIMUM	AVERAGE
Number of days of fever	...	3 days	8 days	6 days
Duration of pain	...	24 hours	72 hours	44 hours
Duration of abdominal tenderness and rigidity	...	52 hours	7 days	6 days
Number of injections	...	9	24	10
Total disability	...	9 days	22 days	14 days

In those cases treated with calcium there was rapid alleviation of the pain so that the patients were able to rest comfortably. In 19 cases the pain disappeared within 34 hours, in 4 cases within 48 hours, and in the rest within 72 hours. Rigidity of the abdomen was gone in 52 hours and tenderness on pressure disappeared within 6 days. The temperature curve returned to normal within an average of 6 days. Calcium therapy relieved the pain so dramatically and so uniformly that if for no other reason calcium should be used in the treatment of puerperal infections.

At the time of dismissal all patients were given a pelvic examination. If there was any evidence of an inflammatory process, calcium was continued orally 3 times daily.

SUMMARY AND CONCLUSIONS

A series of 26 cases of puerperal infections was observed. In this series Neo-Calglucon was given intravenously and intramuscularly, supplemented with Calglucon by mouth in addition to the well established routine treatment.

The average period of hospitalization was 14 days as compared to 21 days for a comparable group in which no calcium was given.

Relief from pain was impressive and occurred in most patients within 24 hours after beginning treatment. The patients became comfortable and were able to rest.

Rigidity of the lower abdominal and pelvic tissues disappeared in 52 hours. Tenderness on pressure over the lower abdomen was gone in from 4 to 6 days, and the temperature had dropped to normal.

No untoward reactions were noted following the injection of calcium intramuscularly or intravenously.

Because of the constant diminution of hyperpyrexia, pain and disability, and the possibility of reducing the mortality, the deduction was made that calcium therapy is uniformly satisfactory and can be used safely in the treatment of puerperal infections.

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FRACTURES OF THE RADIUS AND ULNA AT THE WRIST.

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The diagnosis and treatment of fractures of the radius and ulna at the wrist have not received generally the careful attention and study warranted by the frequency of these lesions and the number of patients recovering with a rather marked functional and cosmetic handicap. The so-called Colles fracture is regarded somewhat incidentally by the patient and doctor until it is recognized that "something is going wrong." Late recognition and treatment of that something is often discouraging to both.

Recognition of the presence of a fracture is easy where deformity is marked and of the typical "silver fork" type. Where deformity is very slight and in the usual absence of crepitus, disability, pain and local tenderness are the remaining clinical signs and even these may be so minor as to arouse only suspicion of bone damage. In this day and age and in most inhabited districts, x-ray facilities are available. It is better modern surgery to make radiologic examinations of all suspected cases than to take the chance of overlooking even the one in a hundred. Minor fractures and the

more disastrous carpal fractures have less chance to escape detection.

It is essential to know the type of fracture to be treated and this is possible only with good detail films in both planes. The types encountered in the radius are:

1. Simple, transverse, without impaction (rare).
2. Simple, transverse, with impaction.
3. Comminuted, without involvement of the radio-carpal joint.

4. Comminuted, with involvement of the radio-carpal joint.

In the ulna, there may be:

1. Avulsion of the ligament.
2. Fracture of the ulnar styloid.
3. Fracture through articulating surface.
4. Fracture through the neck proximal to the articular enlargement.

At the radio-ulnar articulation, there is always laceration of ligamentous structures and frequently gross disarrangement in relation. This lesion is of major importance and its faulty correction leaves great dysfunction.

The methods of reduction of these wrist fractures are numerous. The requisites of any method must include complete disimpaction, restoration of the length of the radius in relation to the ulna, restoration of the anterior hockey stick curve anteriorly and the proper angulation of the radial articulating surface in relation to the long axis of the radius. The radio-ulnar relation is to be restored with the ulna well posteriorly. These requisites are hard to meet and we know of no method to date that can be regarded uniformly satisfactory. The radio-ulnar widening and the antero-medial ulnar displacement are for us the most difficult elements to overcome.

In studying the normal wrists in various positions, it is apparent that closer radio-humeral approximation and the more dorsal position of the ulna obtains with the forearm in supination. Several years ago, we attempted treatment of several fractures of the wrist in this position. Discomfort seemed too great and the position was abandoned. Recently, a description of the supination position was published by Lippman of Brooklyn. Our failure was due doubtless to the use of too great wrist flexion and ulnar deviation.

The commonly used position is now with the forearm in mid position or pronation, marked flexion and ulnar deviation of the wrist. Even this position, if too exaggerated, is not at all comfortable. If the fractures be well reduced, great exaggeration is not necessary. The less exaggerated position will cause less joint stiffness and permit much better circulation.

Anesthesia, local or general, is essential in these fractures unless seen within the first few moments after injury, while the

"numb" stage still persists. Immediate correction of the deformity by traction and flexion often shows excellent reduction. Within three or four hours after the injury, 2 per cent novocain into the hematoma and radio-ulnar joint will give sufficient relaxation. In the hospitals, our preference is nitrous oxide or evipal. Relaxation is essential.

The methods of fixation vary with the operator and the materials available. It is conceded that molded plaster splints, both anterior and posterior, give the most efficient comfortable type of supporting apparatus. The length should be at first from the interphalangeal joints to the elbow; after the first two weeks, being shortened to the metacarpophalangeal joints to permit more active finger function. While the splints are being applied and until the plaster has hardened, traction is maintained and molding accomplished to retain the position of reduction. The stereotyped commercial splint and the yucca boards have use only as temporary support.

A period of danger arises fifteen to twenty days after the fracture, where in the normal course of bone repair, calcium absorption has brought about softening in the fracture region sufficient to permit recurrence of dorsal angulation of the articular surface. Splinting must be readjusted at this time and new radiographic examination to determine that malposition has not recurred. Resplinting and increased flexion may be necessary at this stage.

The total period of fixation in these fractures at the wrist is determined by the type of fracture, particularly in the radius. Bone repair at this site is rarely completed in eight weeks. In the simple, transverse, non comminuted type, well reduced splints should be retained at least six weeks and better for another two weeks. In the comminuted type, eight to twelve weeks is the average. In elderly people, a longer period is required. The time of removal of splints in the individual case is determined by the degree of pain on motion, the circulatory condition, and x-ray appearance demonstrating the amount of healing or the presence of an undue amount of bone atrophy. Prolonged light support may be necessary, permitting partial use.

During the period of fixation, the patient is instructed to move the elbow and shoulder actively several times daily to prevent discomfort of immobility in these joints. This is particularly true of elderly people and the middle age group with arthritic manifestations. Finger function is urged early constantly. Each week, under very close observation, the splints are removed one at a time, the skin cleansed and gently massaged, and fresh padding placed on the splints. This is entirely for cleanliness and comfort, also to prevent splints from becoming uncomfortably loose, as soft part atrophy takes place. After the sixth week, the splints are applied

with strap and buckle, so permitting daily warm water baths and daily active exercise for very short periods.

The complications to be anticipated, in badly displaced fractures are injuries to either median or ulnar nerve. These are discoverable at once. Early recognition saves much later explaining. When pain is unduly great, nerve injury or compression by the proximal anterior fragment is to be suspected. Early cyanosis and swelling before reduction suggests vascular damage. Continued cyanosis and swelling after reduction and splinting may be to snugly applied splints or suggests the poorly understood, vasotrophic syndrome accompanying injury. Any stasis prolonged will give rise to bone atrophy, osteoporosis, or decalcification—as one chooses to call the condition so baffling to all.

The arthritic wrist and hand demand unusual attention when necessarily splinted for this type of fracture.

Late reduction of an unreduced Colles fracture, when not complicated, can be accomplished fairly well by manipulation up to the third or fourth week. Strong traction, and gentle breaking up the new callous, will produce no great soft part damage and permit good to normal position. In the older cases, where bony union is firm, operative correction is best delayed until circulatory damage can be overcome, and until finger joint motion is fairly well restored. Recovery will be expedited by having good material with which to work.

The type of operation again is determined by the individual case presented. The procedure should be selected that gives the best chance for restoring radial length and proper angulation to the radio-carpal articular surface and restoration of the hockey-stick curve anteriorly. If possible, the radio-ulnar relation should be restored by some plastic fixation.

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THE FACILITY OF VARICOSE VEIN TREATMENT

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Recent improvements in injection media and operative technic, and a broader surgical view in the estimation and management of varicose vein cases have greatly simplified their treatment and cure. The current facility of treatment has so increased the material available for study that the newer methods of management and

technic can now be compared reliably with the old, and suitable changes made.

Four hundred patients were seen last year in this clinic; 25 per cent were men, 75 per cent women. Of the entire group, 20 per cent entered with moderate to small varicose veins which they wished corrected for cosmetic or prophylactic reasons, because they had been refused employment, or because they had leg pains which were incorrectly attributed to varicose veins. In comparison studies, this relatively simple, cosmetic-prophylactic group was separated from the rest, because they can readily be cured by one, two or rarely three of any of the sclerosing agents and the case dismissed.

The remaining 80 per cent entered with severe to moderate varicose veins, presenting definite therapeutic problems. It was unusual for the varicose veins to be of equal severity on both legs; they were usually severe on the leg and moderate or inconsequential on the other. Sixty per cent of this group entered because of huge veins and because of leg cramps, and the remaining 40 per cent because of such complications as varicose ulcers 17 per cent thrombophlebitis 15 per cent, varicose dermatitis 5 per cent, and varicose edema 3 per cent.

In the entire severe to moderate group, one-third of the patients were treated by saphenous vein ligation and injection, the remainder by injections alone. In the presence of complications, the policy was followed of beginning treatment of the complications by Unna's boots, elastic bandages, x-ray and dermatologic care. The underlying varicose veins were attacked when the complications began to subside. In 16 patients when the thrombophlebitis or ulcer had healed, no appreciable varices were found and treatment was ended. Twenty-eight patients were discharged without treatment because of specific contraindications.

The formidable "stripping" operations were avoided. They involved an average hospitalization of one month. There was a 2 per cent mortality. Completely undisturbed wound healing by first intention was unusual. These extensive undermining and traumatizing operations in tissue so susceptible to infection as subcutaneous fat, and so laden already with microorganisms by virtue of varicose congestion, old thrombophlebitis and ulcers were open invitation to every conceivable postoperative complication. These included sloughing of the flaps, abscesses, septicemia, erysipelas, tetanus and gas gangrene. After all this difficulty patients began to return in five to seven years with a complete new set of varicose veins requiring treatment just as urgently as did the first.

The decision as to which patients were to be treated by preliminary saphenous vein ligation and which by injections alone, was based not necessarily on the severity of the varices, but on the determination by the Trendelenburg tests of moderate to marked reflux

through the saphena magna at the fossa ovalis. In the absence of a marked reflux at the fossa ovalis even large varices are the result of numerous deep communicating channel reversals, and these can be corrected only by multiple injections. Vein ligation does not then add sufficiently to the efficiency of treatment to be worth while. When ligation is surgically indicated by the presence of reflux but is not performed, cure can still be obtained but only under handicap. Three times the number of injections were required, and the incidence of recurrence was doubled.

Ligation of the saphena magna was almost always done over the fossa ovalis within two inches of the inguinal ligament. The ligation must be high, because medial and lateral collaterals come into the saphena magna almost at its femoral entrance. Unless these are shut off, recurrence is likely, as seen in three cases of our series. The saphena magna is easily palpable in the lower one-third of the thigh. In the middle third it dips into the subcutaneous fat and in obese patients cannot be followed. It becomes superficial again, however, in the upper third and even in obese patients with the patients standing can be located and marked. Additional secondary ligations of huge channels lower in the thigh are rarely done. The saphena parva in the popliteal space required ligation in only two patients.

The ligations were done as ambulatory procedures in the clinic. The patients suffered a partial disability from their ordinary work of from two to seven days. There were no infections and no hemorrhages but only two hematomas which subsided spontaneously. The vessels were doubly ligated by transfixion suture with no. 1 catgut and divided. At the suggestion of Dr. Ralph Bettman in one third of the ligations, 2 c.c. of sodium morrhuate were injected into the vein just distal to the lower ligature while it was exposed to operation. A much more extensive primary thrombosis was obtained in these ligations than in the others. The reaction in the leg, however, was more severe. The disability was usually complete for two days and partial for seven, but the result was more efficient. In eight patients, no further injections at all were needed. The patients' convenience was allowed to determine the choice between greater temporary disability and faster cure with ligation and simultaneous injection, or less disability and slower cure without simultaneous injection.

The best single improvement in the treatment of varicose veins came with the substitution of previous injection media by sodium morrhuate. Sodium salicylate, quinine dihydrochloride, glucose and sodium chloride were all useful, but had many disadvantages. Even with the most meticulous technic including tourniquets above and below, the use of a tilt table, emptying the vein of blood and applying prolonged compression afterward, there were often failures to get any thrombosis at all, and many more injections were needed.

The sodium salicylate injections were accompanied regularly by violent leg cramps, the quinine occasionally by tinnitus. In 8 per cent of the patients at one injection or another, a slough was obtained. Once a perivenous extravasation occurred efforts to dilute it had no effect in reducing the probability of slough. The sloughs were painful, slow to demarcate, and took on an average eight weeks to heal.

The use of sodium morrhuate almost completely changed the injection picture. In over one thousand cases in the last three years we have never seen a slough. This startling immunity to slough lies in the character of the injection media, and not to any abrupt improvement in technic. Even more remarkable than the safety was the effectiveness of sodium morrhuate. Special technic is no longer required except for occasional huge varices. The patients are injected, usually standing or sitting, with 2 c.c. of solution and without any particular ceremony. Hardly ever does the injection fail. The usual obliteration obtained was 6 cm.; often it was more, and in several cases entire varicose venous column was obliterated by one injection. Occasionally more of a result than was bargained for, was obtained. The whole column became tender and painful, but never enough so to produce real disability. It required at worst no treatment except an ice bag, and subsided to leave behind a completely cured leg. Because of this potency of sodium morrhuate, more than 2 c.c. were never injected to begin with, and more than one injection in each leg was never given at one visit. The interval between injections was usually three weeks, but was never less than one week.

The average number of sodium morrhuate injections required to cure a leg with moderate to severe varices but without appreciable reflux was 9, as compared with 22 in older series in which sodium salicylate, quinine or glucose were used. In this group, ligation was not done.

In the group with fossa ovalis reflux, the average number of morrhuate injections required to complete the cure of the leg was 7 in the patients who received ligation, in comparison with 20 in those who refused ligation. In the ligation group, those with simultaneous injection needed 6. Two-thirds of the patients who needed but refused ligation had minor recurrences as compared with one-third in the general group.

The only disadvantage to sodium morrhuate was the occasional allergic reaction. The frequency was about 1 in 250 patients. The usual manifestation was urticaria. An occasional, generalized reaction has been reported but has never been seen in this clinic. The urticaria occasionally appeared after the first injection, but usually only after several previous benign injections had sensitized the patient. Altogether they were rare, and their only significance

was that they required that subsequent injections to complete the case be done with salicylate, quinine and glucose.

The Unna's boots were found still the best method for treating most varicose ulcers. Foul, infected ulcers had to be cleaned up first by frequently changed, mildly antiseptic dressings. Allantoin or urea dressings have been valuable for this purpose. For tiny ulcers adhesive stripping, sponge pressure elastic bandaging or the adhesive elastoplast may suffice. For the irritable ulcer over the malleoli, the undercutting operation may be needed. For old, large, deep, calloused ulcers bound to the tibia and inbedded in indurated tissue the only chance for cure lies in complete excision and replacement with a full thickness skin graft. For exceptionally huge ulcers, prolonged bed rest may be necessary. The usual ulcer of more than trifling size and without special complication was best cured by one, two or at the most three changes of Unna's boots.

The formula for Unna's paste which we used is:

Zinc oxide	...	100 grams
Gelatin	...	200 grams
Water	...	300 grams
Glycerin	...	400 grams

The paste is cut in individual portions containing about 8 cubic inches, enough for one boot. Any excess is discarded, because reheating destroys its efficiency. The paste is applied in two layers from the metatarsal heads to just above the convexity of the calf. The first layer is covered by stockinette, the second by a coarse-mesh gauze bandage which is wound in a pronating manner to support the arch, and is never reversed. The boots are left on for three weeks in hot weather and for five weeks in cold. Several substitutes for Unna's paste were tried, but none proved so satisfactory.

Acute cases of thrombophlebitis were put to bed with leg elevation and mild heat. X-ray treatment is of some value in the acute stage to help to abort the process. The occasional seriously ill patient with an ascending suppurative thrombophlebitis approaching the femoral junction should have a high saphenous vein ligation to avert the danger of septic emboli. When the acute stage subsides, an Unna's boot is applied before the patient is allowed out of bed. Calcium therapy was given to diminish the edema tendency. For persistent lymphedema, x-ray treatment was tried with some success above that obtained by Unna boot or elastic stocking. For the old, brawny, elephantiasic leg which has resisted all conservative therapy, the four stage plastic excision of the subcutaneous fat described by Homans is probably the best procedure.

The sine qua non of all varicose veins occlusion therapy is that the deep veins be patent. No case was treated unless the Perthe's test proved the patency of the deep veins. The second absolute

contraindication was arterial vascular disease of the extremities. The best friend of a man with arteriosclerotic occlusion or Buerger's disease, next to a high blood pressure, would be varicose veins. In the absence of a dorsalis pedis or posterior tibial pulse, varicose veins should be left undisturbed. Pregnancy was considered a relative contraindication to active treatment, not because treatment would do any harm, but because four-fifths of the varices subside spontaneously after the puerperium. A long elastic stocking and tight vulvar pad were advised. Only huge vulvar varices in danger of rupture during delivery were occluded by injection. Three months after delivery the few remaining varices were corrected.

About one-third of all varicose vein patients have flat feet or hallux valgus also. This may arise from a common congenital deficiency in veins, ligaments, bones, etc. About one-sixth of the older patients have an infectious or degenerative arthritis of the knee joint. Varicose vein obliteration was sometimes required because of congestive phenomena, but orthopedic or arthritic treatment was applied at the same time. Syphilis, diabetes and heart disease were not considered specific contraindications.

All patients were requested to return at the end of 3 months, 6 months, one year and once a year thereafter. Recurrences in the sense that one or two more injections were needed at the quarterly or annual visit to obliterate the varix or two which appeared at that time were frequent. One third of the patients needed one or two injections at remote intervals but under this supervision no case of recurrence has as yet been seen which required for its correction more than trifling treatment.

CONCLUSIONS

1. When there is marked reflux from insufficiency of the vein valves at the fossa ovalis, preliminary high saphena magna ligation is required. In the absence of marked reflux, ligation does not add enough to the efficiency of management, to make it essential.

In our series, one third of the patients with moderate to severe varices require a ligation, the remainder can be treated almost as well without one.

2. Simultaneous injection during the vein ligation increases the thrombotic efficiency of the operation, but augments the temporary disability.

3. Sodium morrhuate is superior to previous injection media in its efficiency, safety and technical facility. Its only disadvantage is a rare allergic reaction.

4. The extensive "stripping" operations have been abandoned.

5. The treatment of complications of varicose veins in general precedes that of the veins proper.

6. The Unna boot is the single best procedure for promoting the healing of most varicose ulcers.

7. Absolute contraindications to the occlusion therapy of varicose veins are deep vein occlusion and arterial occlusion. Conditional contraindications are pregnancy and independent lesions which are in more urgent need of treatment.

8. Follow-up supervision will eliminate the possibility of any but trifling recurrence.

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PRURITUS ANI.

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I do not propose to discuss pruritus ani associated with such skin disorders as seborrhœa, seborrhœic dermatitis, psoriasis, eczema, lichen, ringworm, etc., or such general ills as renal disease and diabetes. I am considering here those patients who, in apparently normal health, present themselves with no gross physical signs but complain of an intolerable itching about and inside the anus; the problem which commonly goes by the name of essential pruritus ani and which can cause untold distress.

In these cases of essential pruritus it is of paramount importance that you should not come to regard them as disease entities of unknown ætiology and you should not keep in your surgery a stock treatment for pruritus ani. A general examination is necessary in every case and whatever the appearances or the history many suggest you must exclude those gross ills I have indicated above.

Having gone so far and confirmed yourself in your diagnosis, I suspect that you will run through the numerous causes of pruritus ani. They may range from threadworms, anal fissures and fistula, proctitis, hæmorrhoids internal and external, submucous tracts, carcinoma of the rectum, abnormalities of the sigmoid and lower bowel to such things as low-grade coccal and mycelial infections of the skin, seepage of mucus and of liquid paraffin. With the assurance of a chorister singing an anthem these phrases roll off your tongue in ward teachings and examination halls—or you may even recite them from your textbooks and feel this is the final blessing.

What I would stress to-day is that patients who come to me with pruritus ani never have any of these affections, or if they have them, they are not, in my opinion and from my experience, the cause of their pruritus. I would like to stress at once that I do not

suggest that one should neglect to look for these causes, or if one finds them that they should not be dealt with; I always make a most careful investigation along the lines indicated by these possibilities and should be very distressed if I neglected the presence of any organic condition or did not endeavour to rectify such ills as might be found. My point is that we are always directing our attention towards the despatch of some minor local cause of this type and we lose our sense of proportion and our understanding of these cases by concentrating our efforts in this direction. It is my experience that they are not causes of pruritus ani except in very rare cases; more often they are the result and not the cause of the pruritus.

It is the surgical mind and surgical training which has diverted attention from the real problem to the negligible and trivial incidentals and I would preach that cases of pruritus ani should not be put into the hands of surgeons and should not be approached along surgical lines of thought or of attack.

What are the factors concerned in the development of pruritus ani? In the first place the temperamental make-up of the individual is of prime importance. He is an emotionally sensitive subject, usually intelligent and often artistic, with very definite and often considerable evidence of physiological instability. The anus itself is usually of the soft, moist, patulous type; at the other end the mouth is watery, the tongue is large, moist and oedematous; often the hands are clammy, the nails dystrophic; the hair may be ginger, if not prematurely grey and the facies is anxious. He enjoys a number of minor ills and disabilities and with it all is physically fit and attains a ripe old age. I do not suggest that all these and other stigmata are present in all patients, but never does one fail to discover quite a number of these features to indicate the type of individual with whom one has to deal.

The second factor must be a consideration of the nature, physiological and psychological, of the site affected. The skin of the perineum is emotionally sensitive and reactive. You do not need to be reminded, those of you who have visited the zoological gardens, how often our ancestors express emotional embarrassment and pleasure, not by facial flushing, but by perineal flushing. This surely must in part explain why emotional and nervous influences readily manifest themselves in disturbed function at this site.

A third factor calling for attention is the patient's environment and his reaction to it, the whole taken in the widest sense of the term. Given a patient of this sensitive type who is likely to suffer pruritus ani, there are a number of trivial things as indiscretions in diet and irregular habits which will irritate and aggravate such pruritus and will excite more frequent and more troublesome attacks than would

otherwise be the case. Highly seasoned, hot and irritating foodstuffs, black coffee, alcohol, fried foods, an excess of foodstuffs of any one kind, especially an excess of carbohydrates and fluids causing flatulent dyspepsia may reflexly excite the anal skin. Irregularities in diet and habits, constipation or diarrhoea, the use of unsuitable purgatives or paraffin laxatives, call for attention. Late hours, nervous strain and excitement, bad temper and nervous irritation will all aggravate the problem. There may be overwork, worry and anxiety from the stress and strain of business life; there may be domestic maladjustments calling for attention and correction; there may be general debility from recent ill-health or minor maladies, or lack of tone from various causes. Such factors acting upon the emotionally and nervously sensitive subject will manifest themselves as disturbances of function in a site so sensitive as the perianal skin.

The fourth factor, of course, is that of habit associated with a symptom which is in some respects definitely pleasurable and certainly enjoyed and which is often deliberately excited and exalted by friction on the part of the patient. One may say with perfect justification, that in pruritus ani the patient often indulges in a pleasurable habit and for this he subsequently experiences discomfort. This indulgence can get out of hand and beyond the patient's control more easily and to a greater degree than any other bad habit which patients contract.

All this sounds a formidable array of factors likely to make for a difficult or hopeless problem but this is not the case. I have spent some little time on this aspect of the problem because one must make a proper approach to these cases if one is to attain a lasting result. In the first place, as I have said, the patient must be properly examined and you must know your ground. Secondly the patient must be allowed to talk for you to obtain an understanding of his type and circumstances and then you must yourself talk to some purpose and with understanding to show that you have a grasp of the problem and of the temperamental make-up of your subject, of his habits and reactions. If you can understand the problem along the lines I have indicated and can convey that understanding to your patient, then you do something towards enabling him to cure himself of his malady. If you have that proper adjustment then the very simplest treatment will achieve success and achieve it rapidly. In my experience two or three things only are necessary to attain success in the treatment of pruritus ani and if you approach your case properly these things may assume the form of a routine therapy. They are Calomel gr. $\frac{1}{4}$ at night, Aspirin gr. x. at night, to be repeated if necessary, and the occasional use of a dusting powder of equal parts of calomel, zinc oxide and starch. The patient must keep the part clean by ordinary toilet bathing, particularly after defæcation and

after bathing should dust the part freely with the powder. Nothing will give such comfort and such ready relief. It is a pleasant, cooling and cleanly application and the patient very soon forgets his anus under the influence of a simple toilet therapy of this type. Calomel is an essential ingredient though I cannot explain why. It is an old remedy and was often employed in ointment form but its value as a powder has recently been stressed in the literature with justification. The little calomel at night is not a purge but is a simple intestinal antiseptic and corrective. The aspirin is as useful for a nervous itch as for a nervous pain and is particularly indicated in pruritus of the anus and vulva. If any other measures are necessary then fractional doses of unfiltered X-rays on two or three occasions, at intervals of a few weeks, will almost certainly effect relief. More than this in the treatment of pruritus ani I have no intention of saying for I think it unnecessary. Sedative-tonic therapy, iron, diet adjustment, may be necessary on general grounds. Injection of anæsthetics locally operative procedures and surgical interference are to be avoided at all costs. If you do not achieve success along the lines I have indicated you are well advised to admit the patient to hospital or nursing home to repeat and elaborate preliminary investigations and to achieve a better understanding and control of the case, when the same measures may prove successful. Cocaine or morphia locally or internally must never be prescribed.

It is very unlikely that a patient who has suffered long from pruritus ani and been cured, will go through life without a tendency to relapse when circumstances or conditions are unfavourable. A return to the same line of treatment will generally be followed by a speedy recovery and the patient soon learns to control his own trouble.

I said, earlier, that I should be distressed if I overlooked an organic disorder or physical abnormality in coming to this conception of a case of pruritus ani. I should be equally distressed if, this being the proper interpretation of a case, I left the patient with the idea that he had some organic cause behind his trouble.

Finally, let me repeat the simple treatment of Calomel gr. $\frac{1}{4}$ and Aspirin gr. x. at night and the use of the zinc oxide, calomel and starch dusting powder as a toilet routine.

(University of Leeds Medical Society Magazine, Vol. 8. No. 1.)

Extracts.

THE TREATMENT OF ACUTE ALCOHOLISM.

Two cardinal points of attack exist in the treatment of acute alcoholism, writes Philip Piker, in the *Ohio State Medical Journal* for December 1938. They are first, the stopping of further absorption of alcohol into the blood stream, which involves cessation of drinking and removal of any alcohol remaining in the stomach; and second, the increasing of circulatory and respiratory efficiency so as to hasten the elimination of alcohol and other existing toxic substances from the tissues, which is best accomplished by caffeine. Lavage and caffeine, then, provide the core of the therapy of acute alcoholism. Oral magnesium sulphate, alkalies, and fluids are indicated in all cases. For the various, more difficult complications that have been described above, intravenous hypertonic sucrose or glucose, spinal fluid drainage, paraldehyde, carbon dioxide and oxygen inhalation, heat, and apomorphine may be utilized according to the needs of the specific case. A repetition of the warning against the careless use of apomorphine is indicated.

An outline of the recommended routine treatment in all cases is as follows:

- (1) Gastric Lavage.
- (2) Caffeine sodium benzoate, gr. $7\frac{1}{2}$, hypodermically every 4 hours for 3 to 6 doses.
- (3) Magnesium sulphate, one ounce, twice in 24 hours (unless the patient has a diarrhoea).
- (4) Forced fluids.
- (5) Alkalies (Imperial drink), three doses in 24 hours
- (6) Observation to prevent accidental or intentional self injury.
- (7) Sedatives should not be used except in excited patients.
- (8) Aromatic ammonia, by inhalation. In excited cases, in addition to the routine treatment:
- (9) Paraldehyde, 12 to 16 cc. orally; or 10 cc. intramuscularly. No more than two doses should be given. Six to 10 cc. may be given intravenously in especially difficult cases.
- (10) Fifty cc. of 50 per cent. sucrose or dextrose, intravenously, 2 to 4 times in 24 hours.
- (11) Spinal fluid drainage may be done, if it can be accomplished.
- (12) Apomorphine, gr. $\frac{1}{10}$, may be tried at the beginning of the treatment, but should be given only in selected cases. In profound coma, in addition to the routine treatment:
- (13) Combat subnormal temperatures with blankets and hot water bottles.
- (14) Caffeine sodium benzoate, gr. $7\frac{1}{2}$, every hour until the symptoms of severe shock have subsided.

(15) Intravenous 50 per cent. sucrose of dextrose, as in the excited cases.

(16) Inhalation of 10 per cent. carbon dioxide and 90 per cent. oxygen for 15 to 30 minutes, if the patient's condition seems critical.

We have had no experience with the carbondioxide-oxygen mixture in the psychiatric department of the hospital; and apomorphine has been used most rarely. With these two exceptions, we have utilized the treatment herein described consistently for the past five years. As may be expected in a hospital such as ours (Cincinnati General), we have had the opportunity to treat a large number of acute alcoholics in this period. Our results have been good almost without exception.

Therapy in acute alcoholism, as in all other pathologic conditions, should seek to be rational whenever possible and should not be distorted by the physician's desire to appear spectacular or to relieve himself as quickly as possible of a cumbersome patient. Acute alcoholics sometimes die. The fact that fatalities are relatively infrequent does not give the physician the right to treat these cases with casual empiricism.

GONORRHOEA IN PREGNANCY

Harold K. Marshall, M.D., writes on this important subject in *The Western Journal of Surgery, Obstetrics and Gynaecology* July, 1937.

Gonorrhoea may be associated with pregnancy under three conditions: (1) The gonorrhoeal infection may antedate conception. (2) The gonorrhoea may have been acquired during the coitus which resulted in impregnation. (3) The infection may have been acquired after conception occurred.

Gonorrhoea of the lower part of the genital tract is more severe in the pregnant woman. By the traumatism of labour, gonococci are pressed out of the deep cervical glands, and by virtue of the open cervix and the puerperal processes, opportunities are afforded for virulent development. It has been found that the lochia may contain gonococci without causing fever; and to prevent ascending gonorrhoeal infection after delivery, free drainage of the lochia must be provided.

Gonorrhoea is not an important causative factor of abortion as was formerly supposed; nor is premature labour more frequent in the gonorrhoea patient than in the average.

The most serious and disheartening complication of gonorrhoea is gonorrhoeal ophthalmia of the newborn, which is still accounting

for 20 per cent of all the blindness in our State institutions. Various writers have shown that, despite the generalized use of the Crede technique, there has been no appreciable decrease in ophthalmia of the newborn in the past 15 years. Lehrfeld offers this modified treatment of the eyes of the newborn: Thorough flushing with 3 ounces of boric acid solution in each eye, followed by instillation of 0.5 per cent silver nitrate. This is to be repeated on three successive days. Thereafter until the baby is two weeks old, the eyes to be flushed daily with sterile boric acid solution.

Following is the routine procedure at the Los Angeles General Hospital: Eyes are cleansed with dry cotton wipe; then 2 drops of silver nitrate (1 per cent) are instilled by the nurse in each eye, under the supervision of the physician, who assists by holding the eyes open. No irrigations are used. The silver nitrate solution is supplied in individual wax ampules by the state health department.

In the treatment of gonorrhoea in pregnancy, the same basic principle of therapy as in the non-pregnant holds. Artificial fever therapy, vaccine treatments, or local heat by diathermy or the Elliott machine are not employed in pregnancy. Treatment is divided into antepartum, intrapartum, and postpartum procedures.

TREATMENT—ANTEPARTUM.

1. Acute Stage: "Masterly inactivity."
 - (a) Rest in bed.
 - (b) Sedative measures—urinary.
 - (c) Warm cleansing pitcher douch—1 : 5000 potassium permanganate solution.
 - (d) No intravaginal treatments or manipulation in this stage.
- Subacute Stage: "Guarded activity."
2. (a) Same as for the acute stage with addition of simple low-pressure douche once a day with one dram of Lugol's solution to two quarts of warm water, or potassium permanganate 1 : 5000 solution. Continue "watching waiting" and no local treatments by the physician.
3. Chronic Stage: The infection has now quieted down and is localized in the deep gland areas. Vigorous treatment is now indicated and an attempt made to clear up the infection before labour and delivery. Bernstein advises the following treatment for this period:—
 - (a) At Home. Continue daily douch with Lugol's solution, 1 dram to 2 qts. warm water.
 - (b) At Office: Cervix is exposed and cleansed. Cotton pledget saturated with 1 : 1000 Metaphen solution in the cervical canal, for 5 minutes. Vagina is then swabbed with Metaphen solution. If the urethra is involved, 15 drops of 10 per cent Argyrol solution is instilled into the urethra. If

Skene's tubules are involved, milk out the secretion and inject Metaphen solution with a syringe and needle.

Greatest attention should be centred on the cervix, as the most important harbour of gonorrhoeal infection. Cautery has proved most effective in eradicating deep seated cervical infection. Some advocate the use of the cautery in gonorrhoeal cervicitis in pregnancy. They have this to say, "In pregnancy with gonorrhoea, the cautery was employed, at first with reluctance, but later without misgivings, and the results were most satisfactory. The cautery may be used in treating gonorrhoeal cervicitis pregnancy without undue fear of abortion.

TREATMENT—INTRAPARTUM.

DeLee stresses the following as important in the care of the gonorrhoeal patient during labour and delivery: (1) Low pressure vaginal douche with 1 per cent lysol solution every 6 hours. (2) Vaginal explorations and operations at delivery reduced to a minimum. (3) Preserve the bag of waters as long as possible—best until head is born. (4) If face presentation, eyes not to be palpated during examinations. (5) Care in delivery of the head to prevent contamination of eyes. (6) Wipe away promptly all vaginal secretions from the baby's eyes. (7) Prophylactic treatment of baby's eyes with original Crede 2 per cent silver nitrate. Instillation to be supervised by the physician.

TREATMENT—POSTPARTUM.

1. Strict isolation of mother and baby.
2. Baby to have oil rubs instead of baths.
3. Mother to have no douches and to be kept in bed longer than usual—at least 18 days. (This is to minimize the danger of ascending infection.)
4. Cautery of the cervix 8 to 12 weeks postpartum. (To eradicate any residual cervical infection.)

As to subsequent pregnancy—out of 540 gonorrhoeal cases including both the previously treated and the active cases at the time of delivery, 213 or 39.4 per cent became pregnant again after they had been infected, and 17 patients conceived after definite inflammation of the tubes. Therefore we must not be too pessimistic or too positive regarding the unlikelihood of future pregnancy in these cases.

WHEN NOT TO OPERATE IN ACUTE ABDOMINAL CASES

K. H. Aynesworth, in *Texas State Journal of Medicine*, Nov., 1937, points out that, unless there are sensible reasons for surgical treatment, debilitated patients suffering from chronic wasting

diseases as tuberculosis, pellagra, cardiovascular disease, nephritis, extreme old age, anaemia and inanition should be treated by medical measures until they are fairly good surgical risks or not operated on at all. Distension merits the closest scrutiny whether the patient has been sick for a few hours or for days. There is more surgical significance in this one sign than in all others except actual impending death. Distension of any extent, but especially when marked, interferes with all operative procedures and makes the operation difficult and tedious if not prolonged, thus increasing the danger of surgical intervention. Occasionally, cutaneous infections are a potential danger if an incision is made through such an area. When the pulse rate is high, associated with a normal heart or with a diseased heart, the surgeon should carefully weigh the consequences of an abdominal operation.

More important than either the pulse rate or the abdominal distension, when considered alone, is the blood pressure if it is very low. When the blood pressure remains normal even though other symptoms of grave danger are present, the surgeon may take risks which would be inadvisable if the pressure was below normal. A marked drop in the blood pressure, in association with abdominal distension and a rapid pulse rate, cannot be overestimated. The presence of these three symptoms in combination, irrespective of the previous condition of the patient, is a positive contraindication for operation. Cardiac irregularity, valvular murmurs, hypertrophy or high blood pressure alone are not contraindications to surgical measures; but, when associated with the foregoing conditions, any cardiac disturbance augments the danger. If distension, rapid pulse and low blood pressure are present in a patient presenting an acute abdominal crisis complicated by pneumonia or pleurisy, operation is absolutely contraindicated.

If the so-called dangerous and absolute symptoms are not present, the surgeon should individualize each patient and operate according to his judgment. Severe acute anaemia from any cause, recent haemorrhage, chronic haemorrhage, disease of the blood forming organs, recent illness and the like are all to be weighed carefully before deciding to operate in a delayed or neglected acute abdominal case. Operation should be delayed until remedial measures have been given and the patient's improvement is assured. Blood dyscrasias, as acute leukaemia and similar blood disease, are contraindications for operation in the late stages of any acute abdominal disease. Hypoglycaemia and hyperglycaemia in diabetic patients should be corrected before operating for a late abdominal infection. Alkalosis and acidosis, if marked, should cause the surgeon to hesitate until appropriate remedies have been begun and the patient's condition has improved.

Acute insanity is a contraindication to operation unless the operation is undertaken early in the disease. Delirium from any cause, especially alcoholic or from other drugs, is a serious complication if not a positive contraindication to any serious surgical procedure, especially abdominal operations. Operation should be delayed until the patient has recovered from this state. If the delirium is due to some cerebral disease, any operation is contraindicated except that designed to treat the condition causing the trouble; no abdominal operation is justified. Coma from any cause is a definite contraindication. When the patient is at the point of death from any cause, operation should not be performed unless it is urged by those responsible. Shock is contraindication—with the debatable exception of shock from haemorrhage—for any abdominal operation. Pregnant patients do not have normal resistance to infection. If possible, they should be carried over until every precautionary measure has been used before operating to prevent strain on the reserve store of vital resistance.

Medical News and Notes.

THE TINNEVELLY DISTRICT MEDICAL ASSOCIATION, PALAMCOTTAH.

(Tinnevelly Branch of the Indian Medical Association)

The monthly meeting of the Tinnevelly District Medical Association was held at the Peace Memorial Tennis Club, Tiruchendur on Saturday the 29th of April 1939. After Tea and music, the meeting began under the Presidentship of Dr. P. Janardhana Rao, L. M. and S. The Secretary and Treasurer read out the minutes of the monthly meetings held at Palamcottah on the 25th of February 1939 and 25th of March 1939.

Dr. J. T. Moses, L. M. P., of Tiruchendur, exhibited a case of Spleen on the right side.

Dr. K. Rama Ayyar, M. B. B. S., read out the following cases which were successfully treated at the Government Headquarters Hospital, Palamcottah:—

1. A case of Tumour in the right shoulder (Sarcoma)
2. A case of Myelitis.
3. A case of Stone in the bladder.

Each case was fully discussed by the members. Thereafter Dr. P. Janardhana Rao, L. M. and S., summed up the salient and important features of all the cases and their differential diagnosis in detail.

An excellent Dinner brought the happy gathering to a close.

THE MEDICAL PRACTITIONERS ASSOCIATION NUZVID.

In compliance with the desire of Lt. Col. T. S. Sastry, D. M. O., Kistna to meet the members of the above Association in connection with his tour programme for inspection of medical Institutions in the Nuzvid Taluq, a special meeting of the Association was convened on Monday the 8th May 1939 in the Nuzvid Government Hospital premises at 5 p. m. The members received the D. M. O. and entertained him to tea and light refreshments. The meeting was presided by Dr. P. Anjaiah Naidu. Dr. Anjaiah while welcoming Lt. Col. Sastry to their midst said that though the members were not personally acquainted with him, they have been fully aware of and following his activities in several district Associations. The Secretary gave a brief summary of the origin and activities, the rules and regulations of their association. He observed that the Association was started in the year 1931 by a few Rural practitioners working in the local Taluq and originally named it as "Nuzvid Taluq Board Rural Medical Practitioners Association." Subsequently the enrollment of members was enlarged, 60 other medical officers both Private and in service till at last the name of the Association had to be altered to the Present one; and that the aims and object of their Association are the same as those of any other Association.

Lt. Col. Sastry then thanked the members for the honour done to him and said that he used to follow with keen interest the activities of this Association through Medical Journals especially because Nuzvid happened to be the place of his early school career and congratulated them for the Co-operative spirit and enthusiasm evinced by them to maintain the life of the Association till so long. He then impressed upon them the value and need of a common District Association which works as a branch of the Indian Medical Association and requested them all to individually join as members of the D. M. A. There were several questions raised by the members regarding the proposed idea and the lecturer calmly gave suitable replies to their satisfaction. All having been convinced, offered themselves to be enlisted as members of the D. M. A. and D. M. A. as well, while the L. I. Ms. were taken as Associate members of the D. M. A.

The meeting ended at 9-30 p. m. with a vote of thanks to the D. M. O.

Correspondence.

THE DR. B. S. SHROFF MEMORIAL GOLD MEDAL OF THE BOMBAY MEDICAL UNION.

The following subject has been selected by the Bombay Medical Union for competitive thesis for the above Prize for 1939:—

"Alcohol and Alcoholic Drinks—their use and abuse in India, with special reference to their effects on Health and Disease."

The award will be in the form of a Gold Medal called the Dr. B. S. Shroff Memorial Gold Medal of the Bombay Medical Union.

The competitor must be (i) a duly qualified member of the Medical Profession holding a degree or degrees and diplomas from Indian and other Universities created by statute, or (ii) a duly qualified member of the Medical Profession holding the diploma of Membership of College of Physicians and Surgeons of Bombay.

The thesis must be sent in six typed copies so as to reach the Honorary Secretaries, Bombay Medical Union, Blavatsky Lodge Building, French Bridge, Chowpatty, Bombay, on or before the 31st October 1939.

The thesis should be designated by a motto instead of the writer's name and should be accompanied by a sealed cover containing the name of the writer and his Post Office Address.

The name of the Prize, the year of competition, the subject of the thesis, and the writer's motto should be superscribed on the cover.

No study or essay that has been published in the medical press or elsewhere will be considered eligible for the Prize, and no contribution offered in one year will be accepted in any subsequent year unless it includes evidence of further work.

The accepted thesis shall be the property of the Bombay Medical Union.

All other theses shall be returned if not accepted provided the return postage expenses are paid in advance by the writer.

In the award of the Prize to the successful candidate, the decision of the Committee shall be final.

SORAB J. POPAT, M.B., B.S.

K. S. BHARUCHA, M.B., B.S.

Hon. Secretaries, Bombay Medical Union.

Review.

I had the pleasure of paying a visit to the Laboratory of Messrs. Bengal Immunity, Ltd., Calcutta.

For more than a decade, since its establishment Bengal Immunity is serving the Medical Profession and the public by its Bio-Logical, Bi-Chemical and Injectule drugs of highest purity and standardisation. Particular attention has been given for the development of the various Research Departments and many new lines of investigation has been taken up not only to meet the exigencies of the times but also to explore in the cause of Medical Science. For better efficiency and control and with a view to improve all products each Department has been divided into various sections and each section has been placed under Expert who have specialised on that particular line. The results of this division and specialisation of work has naturally been highly satisfactory and the level of efficiency has been raised considerably. The Laboratory of the Company equipped with all the most up-to-date apparatuses is really an acquisition to be proud of in this Country.



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- (12) Sera and Vaccines are prepared from virulent and smooth strains collected from all the provinces of India and abroad.



Horses for Manufacturing Serums, Bengal Immunity Co., Ltd., Calcutta.

Vaccines and Sera are prepared from strains collected from selected cases from all over India. Purity, reliability and effective works are the characteristic feature of B. I. products. All products

are marketed only after thorough examination in the Control Department of the Laboratory.

Bengal Immunity Laboratory appears to be in a position to supply any demand. Calcutta was suffering from an epidemic of Meningitis during my stay there and I was given to understand that every Hospital had to run extra Beds. The supply of Serums was prompt and sufficient and as a result many lives were saved. I also understand that this institution supplied more than Ten thousand ampoules of Tetanus Serum by Aeroplane just after the great Behar Earthquake.

The phenomenal success of this enterprise must be entirely credited to the very able management of Capt. N. N. Datta under whose direction the Company have risen to-day as the best among manufacturing concerns of Biological and Pharmaceutical products. Adherence to the strict principle of efficiency with economy has been the sound foundation of the extraordinary success of the Company in these hard days of competition.

Such an Institution is therefore an asset to the whole nation and deserves patronage of every Indian.

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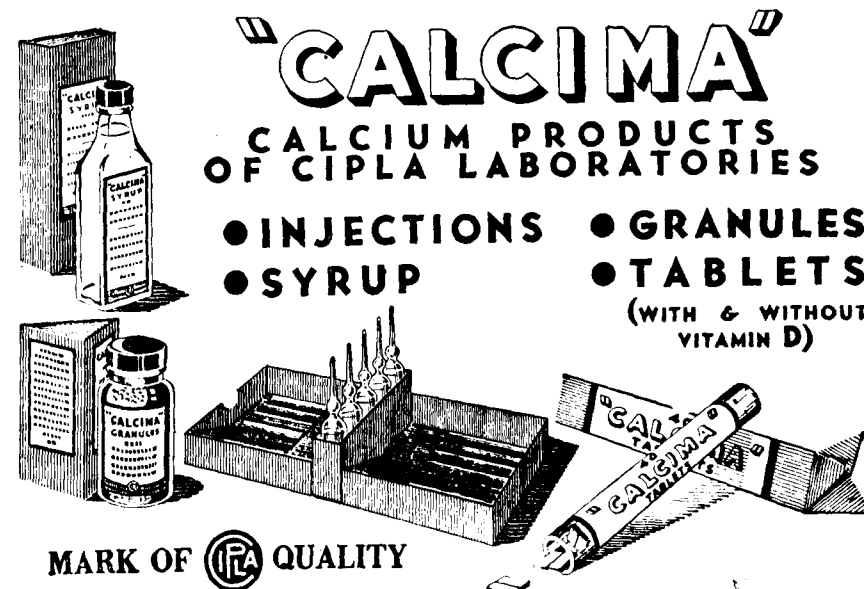
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