

206

MEDL

S FURGE

NUL

JL

L: 4: 7m21, N 58MS

N 58.1.6.

Δ 142949.

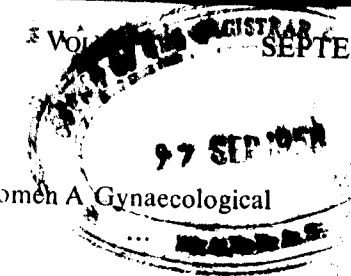
MEDISCOPE

Journal of Medicine & Surgery

1174

VOL. 11, No. 6, SEPTEMBER 1958

No. 6



	Page No.	
Backache in Women A Gynaecological Viewpont	189	By Dr. Hugh C. McLaren, M.D., F.R.F.P.S., F.R.C.S. Ed., F.R.C.O.G.
Treatment of Common Infections of the Hand	195	„ Major P. Govinda Rau, M.B.B.S., F.R.C.S., F.I.C.S.
The Structure, Development Metabolism and the changes due to Senility in the Crystalline Lens of the Eye	201	„ Dr. V. K. Sundaram, M.B.B.S., L.O.
Injured Elbow	209	„ Dr. C. Vyaghreswarudu, M.B.M.S. & Dr. K. Sivagi Rao, M.B.M.S.

Editor :

Dr. B. RAMA RAU, B. Sc., M. B., B. S.

Editorial Board :

Dr. K. Bhaskar Rao, M.D.	Dr. C. R. R. Pillai, M.D., M.R.C.P.
Major P. Govinda Rao, F.R.C.S., F.I.C.	Dr. S. Rajagopalan, L.M. & S., F.D.S.
Dr. A. T. John, M.D., D.C.H. (Lond.)	Dr. V. Rajagopalan, B.Sc., M.B., B.S., D.A.R.C.S.
Dr. K. G. Krishnaswamy, M.S.	Dr. B. Ramamurthy, M.S., F.R.C.S., F.I.C.S.
Dr. M. Natarajan, B.A., M.B., M.CH., (Ortho) F.R.C.S. (Eng.)	Dr. C. Satyanarayana, M.B.B.S., M.S., D.L.O., F.I.C.S., F.C.C.P.
Dr. J.M. Pahwa, M.B.B.S., D.O., Z.O. (Vienna), M.S. (Luck)	Dr. N. Vaidyanathan, M.D.
Dr. K. M. Pillai, B.A., M.B., B.S., D.M.R.D. (Lond.)	Dr. K. Vasudeva Rao, M.D., F.R.C.P., T.D.D.

Price Re. 1

LOCULA

10%, 20%, 30%, Solutions and
10% Ophthalmic Ointment of
Sodium Sulphacetamide

for

Conjunctivitis and other forms of
Inflammatory Diseases of the Eye

East India Pharmaceutical Works Ltd.,

MADRAS - CALCUTTA-26 - BOMBAY-14

A safe and certain oral hypoglycemic sulphonyl urea
derivative for the management of mild and moderate grades
of pancreatogenic glycosuria in old and obese Diabetics

IMPRUMYL

Each tablet contains :

Tolbutamide 0.5 Gm.
Vitamin B₁ B. P. C. 3 mg.
Vitamin B₆ B. P. C. 1 mg.

Detailed literature on request from :

THERAPEUTIC PHARMACEUTICALS

Administrative Offices :

43, Queen's Road, BOMBAY-2

Biological & Pharmaceutical Laboratories :

54, Proctor Road, BOMBAY-7
38, Carter Road, BOMBAY-41

MEDISCOPE

Journal of Medicine & Surgery

VOL. 1

SEPTEMBER 1958

No. 6

27 SEP 1958

Backache in Women An Gynaecological Viewpoint

By

Hugh C. McLAREN, M.D., F.R.F.P.S., F.R.C.S.Ed., F.R.C.O.G.
Professor of Obstetrics and Gynaecology, University of Birmingham.

"But I don't think you understand about my backache—you see Doctor says the *womb is right upside down!*" Another remark the gynaecologist dreads is 'But doctor said since it was worse at period-time *my backache must come from my womb*'. Ofcourse, backache from any orthopaedic cause is worse at menstruation, while retroversion of the uterus is so common that the time has come to write into our text books as physiological.

ON TAKING A HISTORY

With a leading symptom of backache I ask the patient to rise from her chair, watching the while for stiffness or awkward posture. Localising the site of the backache with her hand she may

indicate the sacral or sacro-iliac region. 'How did it start?' After the baby or after nursing her mother in a serious illness or again it may be clearly a 'menstrual backache': i.e., associated with severe lower abdominal pain at menstruation. 'What aggravates or relieves it?' Washing day (stooping) or gardening, with some relief with rest, may point to an orthopaedic cause although low backache due to the onset of prolapse is also relieved by rest. The relevant importance of backache may not be clear until a full history is taken; for instance:—

(a) Endometriosis of the ovaries, tubes or pouch of Douglas: last child eight years ago (coitus interruptus since then),

increasingly painful periods, deep dyspareunia, post-coital aching..... and low backache.

(b) *Fibroids of large size:* menorrhagia increasing over the last year, lower abdominal discomfort, worse at menstruation and... low backache.

(c) *Pelvic infection:* subacute or chronic, e.g. tuberculosis suspected from family history and patient's sterility, increasing dysmenorrhoea some menorrhagia, dyspareunia and increasing backache.

A full gynaecological history then may fit backache into the whole picture as a *lesser* symptom. As a corollary it may be said that without a composite picture suggestive of pelvic disease backache is unlikely to be gynaecological. In other words, if backache presents as a single symptom, experience leads one to seek a cause outside the genital tract.

EXAMINATION

The patient wears nothing but a dressing gown which Sister removes before examination begins. If backache is the principal symptom, preliminary examination with the patient standing erect may show abnormal posture or spasm of the erector spinae muscles as in the prolapsed intervertebral disc syndrome. Lateral movement and flexion and extension are often limited or painful and, of course, suggest an orthopaedic cause. In the post-natal patient who has not yet become accustomed to her new posture, stiffness on extension may be obvious, whilst pain on pressure over the coccyx is not uncommon after

forceps delivery. On the other hand, if posture is good and movements are free and painless the gynaecologist is encouraged to seek a pelvic cause for backache.

I have an arrangement with my colleagues in the department of orthopaedics not to refer patients without my attempting to make a diagnosis, however amateur! With a simple history and examination an attempt at orthopaedic diagnosis is usually feasible. Before treatment is considered in a patient with a disabling backache, however, the opinion of an orthopaedic surgeon is sought.

ABDOMINO-PELVIC EXAMINATION

As the examination of the abdomen and genital tract proceeds a search is made for the cause of backache but quite often it is almost impossible to point to one fact established at examination and to declare with certainty 'this alone is the cause of the backache'. For instance, a hugely obese abdomen in an overweight patient may coexist with prolapse. Again, in the postnatal patient there may be obvious stiffness of the back, poor posture and lax abdominal and pelvic muscles; this may be more important than the associated retroversion of the uterus.

A carefully taken case history in the privacy of a consulting room, and a simple examination of the back followed by abdomino-pelvic examination allow a list of the causes of backache to be made and therapy to be planned according to one's final opinion on what is the dominant etiological factor. But even the

most experienced gynaecologist may emphasize the irrelevant and consequently fail to treat the basic cause of backache. So we find the Hodge pessary *in situ* when the backache is later proved to be due to an early 'disc' lesion. Or perhaps at a subsequent visit it becomes obvious that the patient is very anxious about some intimate domestic problem such as an erring or neglectful husband.

The list could be extended to include pelvic congestion resulting from coitus interruptus, early endometriosis or even

the controversial infected cervix syndrome—an uncommon clinical entity in which an infected cervix (usually an erosion) is associated with tender parametria.

In summary, then, pelvic conditions may be associated with backache but only a very careful study of the whole clinical picture will allow the backache to be attributed to pelvic structural abnormality or any other condition such as endometriosis or pelvic infections. In the first paragraph I suggested that

SOME TYPICAL FINDINGS

Findings

(1) Weight 190 lb. (86 kg.), age 55: cystocele and rectocele of long duration of which she is unaware: *backache*.

(2) *Recent* prolapse in a thin woman of 40. Dragging backache aggravated by prolonged standing.

(3) Backache with old-standing prolapse in a woman of 60. Stiff movement of back with tender nodules over sacroiliac region.

(4) Backache with postnatal stiffness of spine: poor posture. Retroversion of uterus.

(5) Backache with postnatal laxity of pelvic floor, slight cystocele, mobile retroversion.

(6) Backache with postnatal mobile retroversion without cystocele or uterine descent on straining. No obvious cause for backache.

Therapy

Weight reduction; physiotherapy; a well-made corset; review.

A well-fitted celluloid ring pessary may relieve her backache and point to the need for plastic repair.

(a) Orthopaedic opinion; (b) for her prolapse, a pelvic floor repair.

Physiotherapy and improvement of pelvic floor muscles. If symptom free, ignore retroversion.

Pelvic floor exercises; if no relief in 3 to 4 weeks, temporary insertion of a Hodge or ring pessary; continue physiotherapy until removal of pessary in 6 to 8 weeks.

Hodge pessary test (see next page)

the patients may easily become introspective about their pelvic organs, i.e. many women are easily convinced by their doctor that a 'tilted womb' is pathological. If the tilted womb (retroversion) proves to be irrelevant it is often very difficult to reassure the patient that her pelvis is normal. The woman who has become devoted to her unnecessary pessary may similarly be difficult to treat for she 'doesn't feel quite right without it'. I therefore strongly recommend the referral of problem cases to an experienced gynaecologist rather than the insertion of a ring on the off-chance that symptoms may thereby be relieved.

RETROVERSION OF THE UTERUS

No summary of 'gynaecological backache' would be complete without a more detailed discussion on the question of retroversion. When is it pathological? When can it cause low backache? Should we ever tell the patient she has a tilted womb?

Fixed retroversion and backache:— This may be quite painless but more often, pressure in the adherent pouch of Douglas and a fixed uterus is painful at examination. These may also be thickened, tender utero-sacral ligaments to suggest endometriosis, or bilateral adnexal swellings to suggest inflammatory disease (tuberculosis, post-abortal infection, previous gonorrhoeal infection). If backache is severest at menstruation and if, after examination, 'her backache is reproduced then it can usually be assumed that treatment aimed at the diseased pelvic organs will relieve backache. The more dominant symptoms

such as dysmenorrhoea and dyspareunia are, of course, also relieved.

Retroversion with prolapse:— One of the symptoms of prolapse in its initial phase is a dragging sensation in the pelvis and backache which is usually relieved by rest. Retroversion may or may not be present in the early stages of a prolapse but, whether present or not, the important point to remember is that it is in the early phase of prolapse that backache and dragging are common. Later, prolapse may cause no symptoms apart from the sensation of 'bulging' of a cystocele or rectocele.

Removal of a supporting ring pessary in a long-established prolapse may produce a low dragging backache but in my experience backache is not a common symptom in this type of case; if it is present, experience leads one to avoid a promise of a cure of backache by operation on the prolapse i.e. the cause of the backache is seldom longstanding prolapse, it is much more likely to be orthopaedic in origin. In practice therefore the operation for prolapse is carried out and the symptoms possibly attributable to it are reviewed at the follow-up clinic. The persistence of backache despite a good surgical result naturally leads one to seek a cause apart from the pelvic organs. The emphasis in therapy therefore is in the cure of prolapse, i.e. of cystocele, rectocele and descent of the uterus. Retroversion is usually corrected by a plastic repair but, even if not, its persistence takes nothing away from the therapeutic result of the operation.

Pessary test for the relevance of retroversion:— The assessment of facts established by the insertion of a Hodge pessary to correct retroversion is so difficult that I doubt if any practitioner with limited gynaecological experience should attempt it. I confess personal difficulty in interpreting the test so that I very seldom use it in either gynaecological or post-natal patients with backache. Nevertheless, our hospital records show that each year there are a few patients in whom retroversion is apparently the cause of backache, but usually there are other associated symptoms such as dysmenorrhoea and deep dyspareunia. If symptoms are relieved (with the uterus held by a pessary in anteversion) and reappear on removal of the pessary then shortening of the round ligaments by operation is justifiable. Laparotomy, of course, also allows an examination of the abdomen and pelvis, especially of the appendix and adnexa. Before launching into an operation to hold the uterus forward into anteversion a most careful assessment of the clinical facts is necessary. My own experience suggests that retroversion *per se* is almost never a cause of backache and nowadays very few gynaecologists carry out the operation if shortening the round ligaments; even fewer would guarantee that a cure of backache would follow the operation.

THE PLANNER'S SYNDROME ENDOMETRIOSIS

When a woman complains of low backache at or about menstruation, and prolonged *voluntary* sterility is present, endometriosis must be placed high on

the list in a differential diagnosis. No-one is certain of the cause of this curious condition (which amounts to extra uterine menstruation) but it is common accompaniment of voluntary infertility which in Birmingham means 'coitus interruptus'. The diagnosis of pelvic endometriosis is often difficult but if low pelvic pain and backache appear in a married woman (or exceptionally in an unmarried woman) when pregnancy is being avoided, vaginal or recto-vaginal examination may reveal: (1) tender utero-sacral ligaments perhaps with lentil-like swellings on its length. (2) a fixed tender retroversion, (3) an adnexal swelling (chocolate cyst), and (4) pelvic pain and backache which is definitely 'her pain' and follows vaginal examination. Amid the triad of endometriosis dysmenorrhoea, dyspareunia, and infertility—a gynaecologist is apt to regard backache as a minor symptom, but a general practitioner may have backache offered by a shy patient as a leading symptom, the symptom she admits to her friends, her husband and to her foreman at the factory when explaining her absence from work. She may hope that in the privacy of the consulting room her doctor will give her time to complete her story of dyspareunia, post-coital pain and backache, all pointing to endometriosis

BACKACHE DUE TO PSYCHOLOGICAL CAUSES

Backache due to psychological causes is dealt with elsewhere in this symposium, but without a doubt backache in women is a common sequel of anxiety

and 'nervous tension'. For instance, unsatisfactory sexual relationships in a married or unmarried woman can lead to chronic pelvic discomfort and backache which may be very disabling.

CONCLUSIONS

Low backache in women is common, as it is in men. Backache as a single symptom is seldom the result of pelvic disease but it may present with dysmenorrhoea and dyspareunia in endometriosis or pelvic inflammatory disease. In these conditions, a *fixed* or partly fixed (tender) retroversion with adnexal masses may require surgical treatment (or, in tuberculosis, antibiotic therapy) with the prospect of a symptomatic cure including relief of backache.

Mobile, painless retroversion, however is extremely difficult to assess as a cause of low backache and a plea is made for the referral of these problem cases to a gynaecologist of experience, whether the retroversion be diagnosed in the postnatal clinic or the surgery. If the patient asks why she had to have a second opinion I suggest that she be told that her womb is displaced but that every third

or fourth womb is so displaced so that an opinion is being sought as to whether or not her backache is related to the condition. The gynaecologist may be compelled to carry out a pessary test to assess the relevance of retroversion, and possibly early coexistent prolapse, but the interpretation of the test is difficult and often inconclusive even in the hands of an expert. Routine insertion of Hodge pessaries in the practitioner's surgery or the postnatal clinic is deprecated since abdominal and pelvic exercises may be expected to cure laxity of the pelvic floor and so relieve the sensation of dragging the pelvis and low backache.

SUMMARY

Low backache in women as a single symptom is seldom due to disease of the pelvic organs. It may present, however, as part of a clinical syndrome common to endometriosis or pelvic inflammatory disease, but usually as a minor symptom amongst others.

*(Reproduced from The Practitioner, London, No. 1070 Vol. 179 August 1957.)

Treatment of Common Infections of the Hand

By

Major P. GOVINDA RAU, M.B.B.S., F.R.C.S., S.I.C.S.,
Hon. Surgeon, Erskine Hospital, Madurai.

A knowledge of the diagnosis and treatment of infections of the hand is of great importance. Many of these lesions are common and their treatment should be within the competence of the general practitioner. The former teachings of extensive incisions with the object of decompression have been given up now and the present methods are much simpler and the wounds take less time to heal thus preventing a lot of disability and saving lot of time.

The main features of the modern management of infections of the hand are:

- (1) Administration of antibiotics
- (2) Rest to the hand
- (3) No operation until abscess formation is certain
- (4) Adequate anaesthesia
- (5) Bloodless field and
- (6) Limitation of surgery to small incisions for the evacuation of pus and slough.

ADMINISTRATION OF ANTIBIOTICS

Antibiotics should always be administered. Operation is never done unless the patient has an antibiotic in his circulation. The recommended dose is 3,00,000 units of procaine penicillin, twice on the first day and once daily

for 2 or 3 days. When operation is necessary it is best to give 6,00,000 units of procaine penicillin along with 2,00,000 units of crystalline penicillin, 45 to 60 minutes before operation. The day after operation 3,00,000 units of procaine penicillin is given and usually injections are unnecessary afterwards. Benzathine penicillin in one single dose of 6,00,000 units has been given and is considered as good as procaine penicillin given for 3 days.

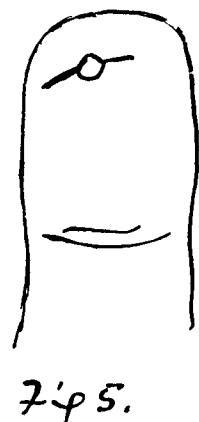
Rest to the hand. All cases of hand infection should have their hand and forearm supported in a sling with the hand raised to about the level of the head. In addition, after operation, the finger should not be bandaged in a position of extension (this leads to stiffness of the finger) but kept fixed in a position of semiflexion.

TIME FOR OPERATION

An incision should never be made until abscess formation is certain. A subcuticular purulent blister is easily made out, but a subcutaneous collection of pus is made out by careful search by a probe for a point of localised tenderness, and then only incision is made over the area of pus as revealed by the localised tenderness. In paronychia, however, pus though not visible may be

the terminal segment of the finger is an important condition. In this condition the orthodox incision (Kanavel) was an early and extensive incision in the belief that tension of the inflammatory exudate in the closed spaces of the pulp of the terminal segment would endanger blood supply to the bone and thus lead to death of the bone. At present it is considered, that osteomyelitis, if it occurs, is due mainly to the severity of the original infection, and in many cases the extensive incision employed, is itself the cause of the sequestrum formation as this incision (uni or bilateral) cuts off the emergency blood supply to the bone after the main blood supply has been destroyed by thrombosis due to inflammation in the area. It was found in one hospital that the sequestrum rate was 10% when the hockey stick incision was the rule, and has gone down to 1% with the present conservative incision.

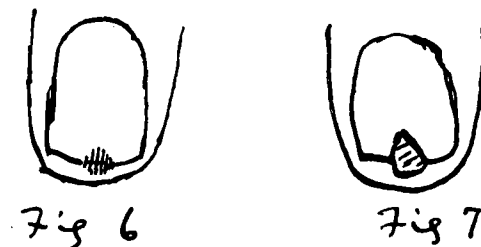
In pulp infection, it is not necessary to incise the area as soon as the patient has come under observation. Penicillin and rest to the hand can be expected to produce resolution of the condition in a



large percentage of cases. In other cases, the above treatment causes swelling, tension and pulsations to diminish and the skin color changes, and when this is noted, a transverse or oblique incision is made right over the centre of the tender area, the tender area being carefully defined by pressing with a probe. A small disc of skin about 2 to 3 mm in diameter may be removed right over the roof of the abscess to provide better drainage (fig. 5.)

APICAL ABSCESS.

Apical abscess is an abscess in the pulp at the tip of the finger and is bounded on one side by the free edge of the nail (fig. 7.) It is difficult to diagnose



this condition correctly but the fact that the tenderness is found to be localized to the tip of the finger enables us to differentiate it from pulp infection. A small spot of yellowish discoloration may usually be made out at the tip of the nail. For this condition, it is necessary that the abscess is unroofed, the skin at the tip of the nail and the adjacent part of the nail over the abscess being removed.

WEB SPACE INFECTION

The web space infection is an abscess in the web of the finger and usually results from direct inoculation. There is swelling of the web with separation

of the fingers and oedema of the dorsum of the hand. In the early stage, immobilisation of the hand by putting the hand and forearm in a sling and administration of antibiotics are essential. When localisation has taken place an incision is made over the most tender area and the correct incision is one overlying the flexion crease at the base of the finger. This transverse incision preferable to an incision cutting the web, as the latter being linear tends to close spontaneously and thus hinder free drainage. When a web space infection extends across the base of a finger into the adjacent web space and distally along the sides of a finger, the condition should not be misdiagnosed as a mid palmar space abscess, and blind thrusts proximally into the deeper parts of the palm "along the lumbrical canals" with the idea of decompression of the space, should not be made. A midpalmar space infection is very rare, and blind thrusts into the deeper parts of the hand may only carry the infection into the deeper areas and therefore should be avoided.

Infections confined to the subcuticular layer may occur anywhere, in the terminal phalanx, or over the palm, and the treatment is merely removal of the overlying cuticle. Of course, in every such case of subcuticular collection a search must be made for a track into the deeper tissues.

Subaponeurotic abscesses of the palm, thenar space abscess and acute suppu-

rative tenosynovitis mentioned earlier are all quite uncommon. A subaponeurotic abscess lies between the palmar aponeurosis and the flexor tendons. This condition seldom exceeds 0.2% of all hand infections. The incision should be over the distal flexion crease of the palm and centered over the most tender area. There is no place in the palm for any longitudinal incisions as these lead to contractions of the palm. Thenar space abscesses are also uncommon. A ballooning of the thenar eminence may mean only pus between skin and fascia covering the thenar eminence and incisions through the web, or much worse, incisions on the radial side of the second metacarpal, with opening up of the thenar space are all very harmful and should be avoided. An incision parallel to the web between thumb and index finger with opening up of the space between skin and fascia will be quite satisfactory.

In cases of pulp infections of the terminal segment of the finger, a persistent sinus may indicate a sequestrum formation. In these cases the sequestrum must be removed only when it is completely separated and lying loose in the cavity.

The present day concepts of treatment of hand infections have been described. The observance of the above measures will greatly shorten the period of disability in infections of the fingers and hand.

PRACTITIONERS' FORUM

Dear Doctor,

If you have some specific problems relating to some of the cases you have in hand, kindly send us your questions giving the necessary details.

The questions will be answered by eminent Specialists on the subject. The question and answer will be published in the columns of 'Mediscope'.

Please state if the answer is desired before the date of publication. We shall endeavour our best to reply you direct as early as possible.

Every letter must carry the name and address. Anonymous letters will not be answered, but the writer's name and address will be omitted, if desired.

The Editor is under no obligation to answer all or any question. Answers to queries by specialists are their own.

We hope you will avail of the extra services offered by us without any obligation.

Very truly Yours,
DR. B. RAMA RAU, B.Sc., M.B.B.S.
Editor

The Structure, Development, Metabolism

AND THE CHANGES DUE TO SENILITY IN THE CRYSTALLINE LENS
OF THE EYE

By

Dr. V. K. SUNDARAM, M.B.B.S., L.O.

Regd. Medical Practitioner & Eye Specialist, 29, Vaidyarama Iyer St., Madras-17.

The crystalline lens is a transparent, biconvex body and the apices of its anterior and posterior surfaces are called the anterior and posterior poles respectively. The line passing through the lens, and joining the poles is the *Axis*, while the lines on the surface, passing from one pole to the other, are called *meridians*. The *Equator* is a circle on the surface at right angles to the *Axis*. Structurally, the lens is divided into the *capsule*, a structureless elastic envelope capable of moulding the lens substance during accommodative changes and by which attachment to the *Zonule*, is made, the *Epithelium* extending as a single layer of cells under the anterior portion of the capsule as far as the *Equator* and the lens substance made up of fibres and interstitial cement material. (Figure next page).

The significance of the intimate structure of the lens substance can better be appreciated with a knowledge of its embryonic and later development. The lens vesicle on separation from the surface ectoderm is a sphere whose wall consists of a single layer of *Epithelium*. On their outer aspect, the cells of this *Epithelium* secrete a structureless hyaline membrane, the capsule. The cells of

the posterior wall and the Equatorial region undergo marked differentiation and from this, the adult lens is formed. The cells of the posterior wall differentiate first becoming primitive fibres by a process of elongation. Their nuclei ultimately disappear, and they remain as an optically clear embryonic in the centre of the mature lens. At the *Equator*, the *Epithelial* cells otherwise elongate to become fibres, the anterior end of each passes forwards towards the Anterior pole insinuating itself under the *Epithelium*, while the posterior end passes backwards towards the posterior pole. This process continues and since each new fibre passes immediately under the *Epithelium*, it forces the earlier formed fibres deeper and deeper and successive layers thus encircle the central nucleus of primitive fibres. The actual process by which the developing lens fibres force themselves over less recently formed ones is as follows: The *Epithelial* cells at the *Equator* tend to become arranged in meridional rows. They assume a pyramidal shape and their inner parts elongate and turn obliquely to run under the *epithelium* of the anterior capsule. The cell is now an young fibre and its inner end, which must now be referred to as

L: 4: 200211, N58125
N58.1.6

its anterior end, grows forward, while its outer posterior end is pushed backward by a similarly developing cell immediately in front. As the cells grow into the lens substance, the nuclei gradually recede with them, becoming arranged in a wide bend, which curves round anteriorly, and the process of elongation proceeds. This configuration is termed the **NUCLEAR ZONE**. The superficial fibres are long, prismatic, ribbon-like cells, some 8-10 mm long-8-12 mm broad and 2 mm thick.

An Equatorial section of the lens, cuts these fibres transversely, since they run in a general anterior-posterior direction and the orderly development of layer after layer of fibres from the cells of the meridional row, leading to lamellar appearance, the so called *Radial Lamellae*. A Meridional section on the other hand, cuts the fibres longitudinally giving the so called "Onion-Scale" appearance. Since the oldest fibres become more sclerosed and less translucent than the more recently formed ones, the lens is not optically homogeneous. It may be broadly differentiated into a central core--the Nucleus and a softer cortex. With the slit lamp, the nucleus can be further differentiated into zones, which correspond with the periods at which their fibres were laid down. The cortex and nucleus both grow during life; more over, the relative thickness of the cortex increases continuously until in old age, it represents a third of the total thickness. As a result of this growth,

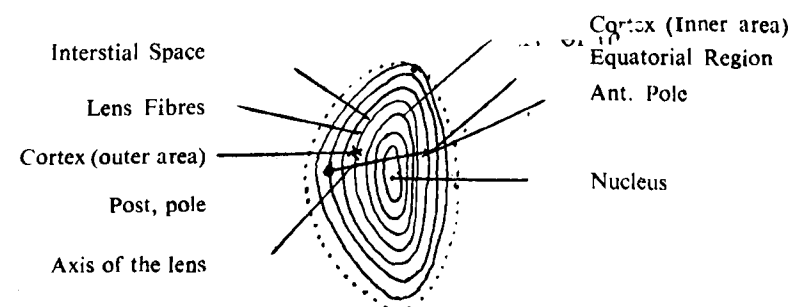


Fig. 1.

the curvature of the outer zone progressively decreases i.e. the lens become flatter. The decrease in the dioptric power which would likewise ensue is prevented by the simultaneous increase in the refractive index of the neclues. When the increase in refractive index fails to keep pace with flattening of the surface, the eye becomes hypermetropic; in the early cataracts, the nucleus becomes sclerosed, so that the eye becomes myopic.

THE LENS AS A FUNCTIONAL UNIT.

The normal adult lens contains 65% of water. With increasing age, the percentage of water tends to decrease, and the cortex representing newer cells contain more water per unit weight than the nucleus. The high potassium content and the low content of sodium and Chloride are characteristic of highly cellular tissue and the conclusion arrived at, is that the potassium is mainly present within the lens fibres, while the Sodium and Chloride, essentially extra cellular constituents of tissues, are outside in the Interstitial fluid or cement substance. In support of this view point, it is found that in ageing or cataractous lenses, the Potassium content decreases, while the content of Sodium and Chloride rises, due apparently to the death of lens fibres, which lose their ability to concentrate potassium. The lens substance is separated from the surrounding Aqueous Humour by the capsule posteriorly, and by the Epithelium and capsule anteriorly, and damage to capsule inevitably leads

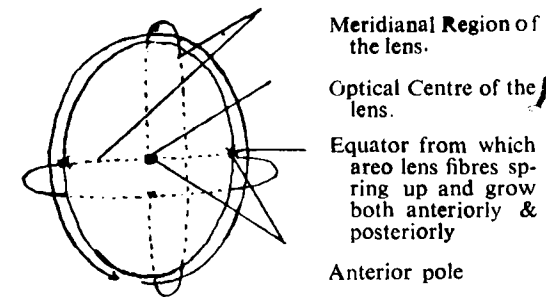


Fig. 2.

to cataract formation. It is therefore to be concluded that the capsule behaves as a functional barrier between the Aqueous Humour and lens substance, destruction of which leads to degenerative changes in the lens. Studies on the permeability of the capsule indicates that a wide variety of Crystalloidal substances can penetrate it with ease so that it is unlikely that the interstitial fluid or cement substance surrounding the lens fibres, differs any way in composition from the Aqueous Humour in respect to Crystalloids. It is possible that some colloidal substance, important metabolically in the maintenance of the structural integrity of the lens substance, is prevented from diffusing out of the lens by the capsule, and the injury to the capsule would naturally result in a leakage of this substance and give rise to CATARACT. The lens is a composite system built of (a) fibre cells with their own individual membrane separating their contents from (b) interstitial fluid or cement substance, which itself is separated by (c) the lens capsule and the Epithelium from the surrounding Aqueous Humour.

The transparency and the refractive power of the lens, depends on the integrity of this system, and changes in

these qualities are therefore to be expected, whenever the normal relationships, are upset.

THE CHEMICAL COMPOSITION OF THE LENS.

(In grams per 100 grams of Lens):
Water: 65, Protein: 30-35, Phospholipid 0.19, Cholesterol: 0.66 and Salts: 0.8.

The Lens Proteins: Protein is the dominant material, present in the lens and it has been divided into a number of fractions as follows:

1. Insoluble Albuminoid		12.5%
2. A Crystallin	...	31.7%
3. B Crystallin	...	53.4%
4. Albumin		1.5%
5. Mucoprotein	...	0.8%
6. Nucleoprotein	...	0.07%

There is a very close reciprocal relationship between the insoluble Albuminoid and the A-Crystallin contents of Lenses; thus in cataractous conditions, the insoluble Albuminoid fraction increases while the A-Crystallin fraction decreases and similarly the proportion of B-Crystallin in the Lens substance decreases on passing from cortex to Nucleus, whilst the proportion of insoluble Albuminoid increases. It is therefore to be concluded that the insoluble Albuminoid is formed from A-Crystallin.

B-Crystallin, a globulin, is closely connected with the metabolism of the lens. This is a muco-protein, is similar to that found in the Vitreous body, the cornea and the umbilical cord. It is essentially a polysaccharide, *hyaluronic acid*, and its function is that of a transparent cement substance, binding the lens fibres together. The *Nucleo-protein* is present in provides the material for the A-protease

the Nuclei of the Fibres. The transparency of the Lens is intimately bound up with the Physico Chemical state of its proteins, some of these are in solution-Proteins-some others exist as Solid fibrils orientated in a definite manner. Protein systems are very sensitive to quite small changes in their ionic milieu; for example, a small change in the Hion concentration, can flocculate a protein solution and so make it opaque; transparency of a fibre system, is also closely bound up with the hydration of its fibres, which in turn, determines their mutual orientation. It can therefore be understood easily that the state of transparency of the Lens is modified by quite small changes in its metabolism, and in the permeability of its capsule.

Besides purely physical changes, the Lens proteins are susceptible to drastic chemical modifications, as the result of Enzyme action. An Excised Lens, maintained under sterile conditions, under goes autolysis eventually (ie) non-bacterial decomposition and this is due to the action of certain *proteases*, an activity that is normally suppressed. According to Kranse, there are two of these enzymes, A and B-protease. The former is active over a wide range of PH, but acts only on partially hydrolysed proteins whereas B-protease hydrolyses the intact protein molecule, but is only active if the medium is more acid than PH. 7.0. This leads to the inference that the normal lens is too alkaline to the B-protease to act on the lens proteins. but if the lens becomes acid due to any changes in it, the B-protease splits the lens proteins-especially the A-Crystallin and

this to hydrolyse. As a result, the proteins are decomposed to Amino-Acids. Various changes in the physical Chemistry of the lens, then follows. The osmotic pressure of the lens rises, and causes swelling, the lowering of B-Crystallin content of the lens lowers the metabolism of the lens, and finally, the decomposition products are precipitated by Calcium, and all these changes lead to an opacity of the Lens material. In connection with the subject of Lens proteins, a brief review of their immunological characteristics is also important. In 1903, *UHLENHUTH* showed that the lens protein were organ specific but not species specific, antigens, (i.e.) they have the same immunological properties irrespective of the species from which they are derived. Thus blood from rabbits immunised with Ox lens, give similar *precipitin* reactions, with a wide variety of Mammalian lens proteins. This broad principle has been confirmed by Modern work also. In general, there are atleast three immunologically distinct proteins in the lens, referred to as B and A-crystallins, that with the greatest activity being A-crystallin, tending to be neutralised by the B and A-Crystallins, so that normal rupture of the lens is not followed by an immune reaction. If B or A Crystallin is decreased in amount, the animal becomes sensitised to its own proteins, owing to the unmasking of the activity of the A-Crystallin. A further injection of lens protein may lead to an anaphylactic response. It is not yet clear as to whether the inflammatory reactions, that sometimes follow lens trauma are of this nature, although

there is some evidence in favour of it. Such a reaction is known as Phaco-Anaphylactic Endophthalmitis.

The Calcium content: The Calcium concentration in the lens is about equal to that in the Aqueous Humour. In young lenses, it is very difficult to detect even traces of Calcium content. Great importance has been attached to the Calcium content of the lens, since it is known that interference in the general metabolism of the organism such as parathyroidectomy or changes produced by Rickets, is associated with the development of cataract. Moreover in the aged, sclerotic or cataractous lenses, the calcium content increases. The deposition of Calcium Salts is not the primary change in any form of cataract. The breakdown of proteins and possibly of the Lipids, as a result of metabolic disturbances, liberates, Sulphates, Phosphates and Carbonates, which are precipitated by the Calcium already present in the lens. Thus, it has been shown that in Galactose Cataract, the Calcium deposition always follows the primary Cataractous changes.

The Lipids: The Lipid content of the lens is made up of numerous fractions of which cholesterol and Phospho-lipids are the principal. Cell membranes are built up largely of lipids and with such a dense agglomeration of cells, as exists in the lens substance, it is natural that most of the lipids are located in these membranes. Little definite has come out of the numerous studies of the Lipid contents of the normal, aged and cataractous lenses. It is possible that the phospholipids break up during

the development of cataract and the broken up fragments of these contribute to the increased osmotic pressure, which occurs during the intumescent, stage of the cataract, when swelling of the lens fibres occurs, due to the absorption of water. Cholesterol deposits are frequently seen in Cataractous, as also normal lenses, but it is to be noted that there is no general increase in the Cholesterol content of the lens, with cataract.

Metabolism of the Lens: The Lens utilises Oxygen and Glucose; the Oxygen consumption amounting to about 196 cu. mm. per hour for the Rabbit lens and that of Glucose to about 0.1 to 0.2 mgm. The lens must derive these materials from the Aqueous Humour and the effect of this removal is manifest in the low Glucose content of the Aqueous Humour, in comparison with that of the Blood Plasma. Glucose is continually withdrawn and the loss is made good by diffusion from the Iris and Ciliary body. Since diffusion only begins, when the Glucose concentration is reduced, the replacement of lost Glucose never catches up and a steady state is reached, with a low concentration of Glucose in the Aqueous Humour. Glucose is metabolised in two ways; aerobically in which case it is converted into carbon dioxide and water, and anaerobically, when it is broken down to *Lactic Acid* (Glycolysis). In the lens with its low supply of O_2 (the O_2 content of the Aqueous Humour is only 0.1 volumes per cent), the anaerobic process predominates and accounts for the high Lactic Acid concentration in the Aqueous Humour. The Enzymes necessary for

the chain of Chemical reactions involved in Glycolysis, are all present in the lens. The position is different with respect to the Oxidative conversion of sugar into CO_2 and H_2O in the lens, important enzymes (eg.) Cytochrome and Cytochrome Oxidase, considered indispensable for the process in muscle, are not present and it is clear that special mechanisms have been developed to enable the lens to remove hydrogen from the substrate. There is little doubt that *Glutathione* (a tripeptide built up of Glycine, Cysteine, and Glutamic Acid), B-Crystallin, and possibly Ascorbic acid, represent a series of compounds, whose function it is to remove hydrogen from the metabolite and bring about its reaction with Oxygen to form water, as follows: Substrate H_2 Beta-Crystallin H_2 Glutathione H_2 Ascorbic Acid H_2 O_2 . It is found that if Glutathione is removed from the lens by dialysis, the power of utilising Oxygen is lost completely, and returns if Glutathione is added to the medium. It is a point of note that in *mature, Senile Cataract*, there is no detectable Glutathione. In experimental Cataracts (eg) those produced by feeding Naphthalene or Galactose, the Glutathione content decreases, before the development of any opacity. The Ascorbic Acid contents of the lens and Aqueous Humour in mgm. per 100 g in various species of animal and man is given below:

Species.	Aqueous Humour.	Lens.
Horse	18—24	26—57
Sheep	12—25	17—46
Rabbit	13—51	4—38
Man	3—15	5—49
Dog	4—6	3—8
Cat	5	—

Though the role of Ascorbic Acid in the system is not well proved, this vitamin increases the facility with which Oxygen is utilised by the lens in vitre. The lens and Vitreous Humour contain appreciable quantities of Ascorbic Acid, as the above table shows. In certain species for example Rabbit, the concentration in the lens and Aqueous Humour is very much greater than that in the plasma. On the other hand, in the Dog, and Cat, it is not greatly, if at all, different. That the lens is responsible in some way for maintaining the high concentration of Ascorbic Acid in the Aqueous Humour is clear from the fact that in the Aphakic Eye, the concentration becomes nearly the same as that in the plasma. The exact mechanism of accumulation of this acid is not yet settled; there is a view that the lens actually synthesises Ascorbic Acid. It is also a point of importance to note and infer from the fact of the low concentration of this acid in the lens and Aqueous Humour of certain Species of animals and its deficiency, not causing cataracts, that this substance is not essential to the normal metabolism of the lens, in contrast to Glutathione.

The above brief review of the Physiology of the Lens, emphasises the numerous factors that may influence its transparency; this structure has received a great deal of attention from experimentalists, owing to the desire to solve the problem of cataract, and it is now quite clear that there can be no all-embracing specific theory to cover all cases of opacities in the Lens. The primary change is most probably a disturbance in

metabolism, but this takes numerous forms and produces a variety of results; secondary changes consist essentially in modifications of the physical state of proteins, producing various results. Finally, the deposition of insoluble salts in the lens fibres, already moribund or dead and decomposed, modifies the overall picture of the cataract produced. The Lens fibres develop nuclei with increasing age of the person. The differentiation into Cortex and nucleus also occurs after adulthood only and hence the nucleus is seen to be absent in Infantile and Juvenile lenses. The Cortex is of softer consistency in the young and as age increases, becomes harder with sclerosis of the Lens fibres and deposition of Calcium Salts, incident to it. Nucleus is harder than Cortex.

The ratio of the Sodium Content of Cataract lenses to that of normal lenses is much more. The ratio of Potassium content, an ingredient which is essential for cellular metabolism, of Cataractous lenses, to that of Sodium, is definitely less than in normal lenses. Death of lens fibres and defective metabolism of the lens with advancing age, might be incident to certain general metabolic changes occurring in the individuals, dependent on the climatic condition, the general state of Protein, Fat and Salt metabolism of the individual, varying widely with the state of nutrition of the individual, the level of Renal function, and quite many other factors, which need a wide range of investigation by Eminent Bio-Chemists of experience, who must be connected specially with Eye Institutes of Research, set up by

the State especially for the investigation of this widely prevalent problem of finding the exact aetiology and Pathogenesis of this problem of Senile Cataract, which is especially common in our Country (India), though existing all over the World. The Medical remedies suggested, from the basic root cause of Metabolism of Crystalline Lens of the Eye in the treatment of Senile Cataractous changes, are as follows:—

A prescription of drops for local application to the eye, with the following ingredients in the dosage indicated, seems to be worthwhile as a drug for clinical trial in experimental animals as well as human eyes, subject to cataractous changes, due to senility, in the early stages itself as a means of prevention of further spread of opacification changes, in the crystalline lens of the eye, as also to some extent, resolution of the changes, already produced, when viewed from the basic root cause of the metabolic changes taking place.

Potassium Citrate	... 3 ss
Potassium Bicarbonate	... 3 ss
Potassium Chloride	... 3 ss
Aqua and } Distillate }	1 oz.

Fiat guttae. One or two drops to be applied to both eyes twice daily. *Ascorbic Acid* therapy and *Glutathione*, the latter either by Parenteral therapy alone or Parenteral and oral therapy combined in the form of glutavit or Acidules (Lilly), supplemented to some extent by Pituitary Hormonal therapy also in the form of Anterior Pituitary Extract, or sex Hormones and Vitamin E (Ephynal), might to a great extent, prevent the degeneration and decomposition of Lens Proteins, leading to the formation of cataractous opacities in the Crystalline Lens of the Eye.

CALLING
SUBSCRIBERS

Every month the 'Mediscope' brings to you valuable contributions of original articles and Case reports by eminent authorities in India and abroad.

You are cordially invited to share their knowledge and get posted with the latest achievements in Medicine and Surgery.

Please become a subscriber. Kindly fill up the Form given below in BLOCK LETTERS and forward it to us together with the subscription:

	INLAND	ABROAD
Annual	Rs. 10/-	Rs. 12/-
Half Yearly	Rs. 5/-	Rs. 6/-

(Post Paid)

The Circulation Manager,
'MEDISCOPE'
57, Burkit Road,
T' Nagar,
MADRAS-17.

PLEASE DON'T
GIVE CASH TO
REPRESENTATIVES

Dear Sir,

Please enrol me/us as Yearly/Half yearly subscriber. Enclosed please find Cheque/M.O. Receipt Postal Order or send the first copy by V. P. P./for Rs.....being my/our Yearly/Half yearly subscription paid in advance.

The 'Mediscope' is to be sent to me us each month, post free, to the address given below:

(Please use block letters)

Name :.....

House No :.....Street :.....

Town :.....District :.....

State :.....Signature:.....

Date:.....

M. O. Receipt No.....Postal Order No.....

Cheque No.....Date :.....

“Injured Elbow”

By
DR. C. VYAGHRESWARUDU M.B.,M.S.
Lect. in Orthopaedics and Orthopaedic Surgeon, K. G. Hospital, Visakhapatnam

AND

DR. K. SIVAGI RAO M.B.M.S.
Formerly Tutor in Orthopaedics K. G. Hospital, Visakhapatnam

(Continued from August '58 issue)

Manipulative reduction :- The fractured olecronon can be reduced perfectly by extending the elbow fully and pressing firmly over the fragment so that it is pushed forwards and downwards into the angle from which it has been displaced. The limb is immobilised in extension. Radiographs should be taken at once because conservative treatment is justified only if the fragments are in absolute contact. The limb is immobilised for about 6 weeks.

Operative reduction is indicated when a manipulation has failed to restore apposition. The fracture is exposed through a posterior longitudinal or U incision and any completely loose fragments of bone are removed and the upper fragment is reduced. A small hole should be drilled transversely through each fragment and the two fragments should be tied lightly together, with chrome catgut, Kangaroo tendon, silver or stainless steel wire. The drill holes should be as far from the dorsal surface of the bone as possible in order that the sutures which are passed through them will not be directly under the skin incision. In fractures near the apex of the process, the proximal suture should be passed through the triceps tendon

and around rather than through the base upper fragment. Subsequent treatment is same as in manipulative reduction.

Excision of Olecronon :- In very high fractures separating a smaller fragment and comminuted fractures, excision of the fragment and repair of the tendon is a better procedure. The fragment is shelled out by close direction. Strong matters sutures are passed through the triceps, guided through a drill hole in the ulna and securely tied. Additional fixation may be secured by suturing the triceps tendon to muscles and fascia on each side of the ulna. The joint should be immobilised in full extension for about 2 weeks and active exercises are then practised.

There is, however, one contraindication to excision of the olecronon, namely, fracture of the olecronon with forward dislocation of the joint. If such an injury is treated by excision of the olecronon, the joint is liable to redislocate forwards.

Summary :—1. Perfect reposition of the fragments is essential if loss of active extension of the elbow is to be avoided.

2. Displacement of fragments however slight should be treated by manipulation and if this fails by open reduction.

3. In very high fractures, and comminuted fractures, especially in the older group of patients, excision of the fragment, with repair of the tendon is a better course.

ANALYSIS OF MONTEGGIA FRACTURE DISLOCATION

There were 11 cases of Monteggia fracture dislocation, an incidence of 8.3%.

The age incidence varied from 6-38 years. 10 were males and one female. 5 patients gave history of fall on outstretched hand. 1 patient had fallen on a flexed elbow. The others gave history of direct injury, being beaten over the elbow with a stick. The fracture dislocation was anterior or extension type in all the cases. Two cases whose injuries were 2 and 4 months old had unreduced fracture dislocation with myositis ossificans; they were treated by excision of head of the radius. One of them had non-union of ulna also. The fibrous tissue around the fracture site was removed, few cuts were given into the bone ends to reach the marrow and the ends approximated.

2 cases had an associated fracture of the head of the radius which were treated by excision followed by reduction of the fracture dislocation had immobilisation. One of them could be followed up for 6 months, and the function at the elbow was good.

All the other cases were treated by simple reduction and plaster. Only 2 patients could be followed up and the range of movements and function at the elbow were good.

MONTEGGIA FRACTURE-DISLOCATION

In 1814, Monteggia was the first surgeon to describe 2 cases of fracture of shaft of ulna associated with anterior dislocation of the head of the radius. This combination of injuries has since been called Monteggia fracture of more accurately, Monteggia fracture dislocation.

It is an extremely important type of injury because of the fact that true diagnosis is often completely missed on clinical and some times even x-ray examination. To overlook or fail to recognise the associated radial head dislocation results in inadequate treatment, continued dislocation, possible ugly and permanent deformity, loss of lateral stability of the elbow, restriction of function and often times pain.

Mechanism of Injury:- There are two types of mechanism involved in the causation of these fractures.

1. *Direct injury*:- The mechanism of injury in these cases is due to application of a direct force as for instance a fall on the posterior aspect of the forearm or a blow on the back of the upper part of the forearm. The ulnar shaft becomes fractured and its fragments angulated. If the radius is not fractured at the same time, the force which tends to shorten the ulna must disrupt one bone from the other. The interosseous membrane being stronger than the orbicular ligament, and at a greater advantage owing to its longer attachment helps to lever the head of the radius away from the upper end of the ulna and capitulum.

The fracture in the ulna is usually located in the upper one-third but may occur as far distal as the junction of the middle and distal and distal thirds. It may also occur just below the olecranon process. The type of fracture may be greenstick, transverse, or comminuted.

Pronation Injury:- Mervyn Evans advanced the theory these injuries are caused by a pronation strain. According to him when a patient falls forwards on the outstretched hand the forearm is already pronated and at the moment of impact, the hand becomes relatively fixed to the ground. To the downward momentum of the falling body, a rotation force is added, when twisting of the trunk causes external rotation of the humerus and ulna. If this force continues until the normal range of pronation at the ulnar joint is expended, something must give. The ulna cannot rotate because it is fixed below by the ulnar carpal ligament and above by its articulation with the humerus. The ulna is therefore liable to fracture and the combination of rotation force and of bending force set up by longitudinal compression may produce an oblique transverse or a butterfly fracture. At the same time, the radius is forced into extreme pronation and lies across the ulna at the junction of its upper and middle thirds. As the ulna fractures, the two bones come into contact and the point of contact forms a fulcrum over which the upper end of the radius is forced forward. As the pronation force continues, the radius, is either levered forward out of the superior radio-ulnar joint, or is fractured in its upper third.

Thus the forced pronation can cause either.

1. Fracture of the ulna in its middle third with dislocation of the head of the radius, or

2. Fracture of the ulna as above with high fracture of the shaft of the radius. Evans, while conceding that direct force can cause this type of fracture dislocation, considers it to be only exceptional for the following reasons.

(i) If the fracture is due to a direct violence one would expect severe bruising at the site of impact. This was not seen by him. (ii) If the fracture of the ulna is due to direct violence one should expect more comminution than is usually seen. (iii) In Evans's experience, when patients have given a clear history of direct blow, the injury sustained has been either fracture of the ulna or fracture of shafts of both bones, but, in no case dislocation of the radial head. (iv) Dissected specimens show clearly that the capsule of the superior radioulnar joint is strong anteriorly, and is protected by the supinator Brevis and Brachialis muscles. Hence it is unlikely that a direct blow would be sufficient to cause dislocation, especially if none of the force were spent in fracturing the ulna. But it is now accepted that excessive rotation does not enter into mechanism of the injury at all. The position of the elbow at the time of injury can be determined by placing the forearm in that degree of rotation, in which the detached fragment of radial (commonly found in the posterior type of Monteggia fracture) forces directly

forwards. This can be observed at the time of operation or by taking a series of x-rays of elbow in various degrees of rotation, until the position is found, when the fractured segment--faces directly forwards. By this means it was found that the forearm at the time of injury was neither fully pronated nor fully supinated but approximately in the midposition.

The displacement of the radial head can be compared to the displacement of dislocated elbow. When the ligamentous attachments of the elbow prove stronger than the shaft of the ulna, the shaft breaks. The reverse is true in dislocation elbow. This is proved experimentally. The elbow is fixed in 120 and the forearm in midposition. A violent blow on the lower end of the ulna and radius produced dislocation of the elbow. But if the ulna was made weak, by notching the anterior cortex, a similar force resulted in fracture of the ulna and posterior or posterolateral dislocation of the head of the radius.

Pathology:-The fracture in the ulna is usually located in the Upper 1/3 of the shaft, but may occur as far distal as the junction of the middle and distal thirds. It may also occur just below the olecranon process. The type of fracture may be green-stick transverse, oblique or comminuted.

The common dislocation of the head of the radius is in the anterior direction. Less commonly it may be dislocated posteriorly or laterally. The posterior displacement may be associated with fracture. When the radial head is dislocated

in this type of injury, the orbicular ligament may show one of three types of pathology. (1) The ligament may be torn across and remain open (2) It may be torn across and fold in behind the radial head, thus preventing complete reduction of its dislocation (3) Instead of the radial head tearing through the orbicular ligament, it may pull out from beneath it and come to lie anterior to an intact ligament. In such cases, no reduction of dislocation of radial head is possible by closed or open methods, until the ligament is incised vertically.

Depending on the direction of dislocation of the head of the radius and the angulation, the following types are recognised: 1. Anterior Monteggia fracture dislocation or anterior angulation of the ulnar fragments with anterior dislocation of the radial head. 2. Posterior Monteggia or posterior angulation of the ulnar fragments with posterior dislocation of the radial head. 3. Lateral angulation of the ulnar fragments with lateral dislocation of the radial head.

Diagnosis:-Although a fracture of the upper shaft of the ulna is usually obvious, an associated dislocation and subluxation of the head of the radius may be overlooked so that, the fracture dislocation is then treated as if it was an isolated fracture. Every fracture of the upper shaft the ulna unaccompanied by fracture of the shaft of the radius should be suspected as being part of a Monteggia Fracture dislocation. If there is angulation or over-riding of the fragments of a fractured ulna without

corresponding injury to the radius, there must be a dislocation of the radial head.

X-ray is diagnostic. In a normal lateral view, a line drawn through the long axis of the radius, should directly pass through the centre of capitulum if projected upwards regardless of the degree of flexion or extension present at the joint; this is disturbed when the radial head is dislocated.

Treatment:- This is a very difficult injury to treat. Watson Jones wrote "Few fracture dislocations are to be set with greater difficulty and few have been characterised by so many complications".

Flexion type or Posterior Monteggia fracture dislocation:-It is usually possible to secure perfect alignment of the ulna because in extension of the elbow, the fragments lock in the reduced position. All that is needed is to apply traction, extend the joint fully and immobilised it in plaster from metacarpal heads to the axilla. Accuracy of reduction is confirmed by taking x-rays in both A.P. and lateral planes. The plaster may need to be renewed from time to time but the position of complete extension of the joint should not be disturbed: No position other than 180 of extension should be used until the fracture is united as otherwise, there will be recurrent dislocation of the radius and angulation of the ulna.

The fracture is usually stable after reduction and operative treatment is seldom needed.

Extension or Anterior Monteggia:-This is an unstable injury and it is usually

difficult to achieve complete reduction by manipulation alone. The fragments do not readily lock in the reduced position and even when initial reduction is satisfactory there is always a tendency to recurrence of angulation and displacement. Hence, these are better treated by open reduction and fixation of the fragments. A vitallium or stainless steel plate may be used, with four screws, which penetrate the opposite cortex without projecting beyond it may be used. When the ulna is realigned, it is seldom necessary to expose the dislocated head of the radius; it can be usually replaced by manipulation. Operative exposures of the head also, carries the risk of traumatic ossification.

Alternatively, the fracture in the ulna can be reduced and fixed in position by driving an intramedullary nail across the site of fracture and into the distal fragment. After operation the limb should be immobilised from the axilla to the metacarpal heads, in a position of flexion.

It is justifiable to attempt closed reduction in young children, but if this is imperfect, or re-displaced, they should be operated upon and the fracture fixed with plate and screws. Early excision of the head of the radius at the same time as the ulna is reduced is inadvisable. It increases the danger of traumatic ossification of the lower end of the ulna which must be excised. Even then the stump of the upper end the radius may impact against the capitulum once more and need a second excision. If the head

of the radius is to be excised at all, it should be done as a late operation.

Complications of Monteggia Fracture dislocation:- 1. Unreduced dislocation of the head of the radius-This is best treated in adults by excision of the displaced head. Excision of the head is not justified in children, because it involves removal of the upper radial epiphysis with increasing inequality in the length of the forearm bones and consequent dislocation of the inferio-radio-ulnar joint. The head of the radius should be replaced with reconstruction of the orbicular ligament. Speed, Kellog, Wilson and Capbell used free grafts of facia lata for this purpose. Corbett used the Bicipital fascia. Watson Jones used tendon grafts from Putman's longus or peroneus tertius.

2. *Traumatic ossification round the radial head:-* Here the head of the radius, and the block of bone attached to it must be removed. It is very difficult to restore pronation-supination movement after traumatic ossification round the dislocated bone; and this emphasises once more the importance of preventing it by avoiding early operative exposure of the radial head.

3. *Cross Union between the shafts of radius and ulna:-* If the ulna is united in good alignment and cross union arises from a slender bridge of bone, the problem is not insuperable. The bridge of bone should be exposed from the ulnar side and after it is excised, a flap of muscle may be interposed. But if cross union is associated with outward angulation of the ulna and the fragments of

ulna are fused directly to the radius it is necessary not only to divide the bridge of bone but also to realign the ulna and prevent recurrent angulation by means of a bone-graft. After so extensive an operation, there is danger of ossification of the hematoma and recurrent radio-ulnar synovtosis. The only alternative is to accept permanent limitation of radio-ulnar movement. The disability is minimised if the forearm is fixed in a position, slightly is minimised if the forearm is fixed in a position, slightly on the pronated side of the mid-position, as a forearm ankylosed is full supination is almost useless.

4. *Dislocation of the lower end of the ulna:-* If the head of the radius is excised too early the shaft gradually displaces, upwards and the lower end of the ulna subluxated.

By impinging on the back of the campus, it limits dorsiflexion of the wrist as well the radio-ulnar movement. The head of the wrist as well the radio-ulnar movement. The head of the ulna should be excised just above the lower radio-ulnar joint.

Ununited fracture of the ulna:- Monteggia fractures of the ulna fail to unite if immobilisation is imperfect or stopped prematurely. In such cases the ununited fracture must be bonegrafted. If the head of the radius is not dislocated, the operation is relatively easy and if there is unreduced dislocation of the radius, it must be first excised in order to realign the ulna. A graft may be fixed by four vitallium screws. Intra-medullary nail with cancellous bone grafts cut from the ileum are still better.

Summary:- 1. Monteggia fracture dislocation is a very difficult fracture to treat. It is usually caused by a direct blow on the upper part of the back of the forearm; it may sometimes be caused by forced pronation, as shown by Evans.

2. There are two types of the injury : Anterior Monteggia, or extension type and posterior Monteggia or Flexion type.

3. Posterior Monteggia is treated by simple manipulative reduction and immobilisation in extension.

Anterior Monteggia is an unstable fracture and operative reduction followed by fixation with plate and screws or intramedullary nail is the method of choice. Head of the radius is later reduced by closed manipulation.

In late unreduced dislocation, and where there is myositis ossificans, the head of the radius must be excised, with the block of bone in the later case.

SIDE-SWIPE FRACTURES

There are also called 'Car Window elbow' Driver's seat fracture, Traffic elbow or Baby car fractures.

The injury is sustained by the driver of an automobile who has his arm resting on the window frame with his elbow projecting from the window, when his car is side swiped by an oncoming vehicle or struck by some overhanging projection.

There is usually a fracture dislocation of the elbow with forward displacement of both forearm bones, fracture of the olecranon, fracture of the lower shaft of the humerus, and fracture of the

upper shaft of the ulna. In some instances, a badly mutilated forearm and elbow result with compound fractures of all the bones composing the elbow region as well as avulsive loss of soft tissue and tearing of the blood vessels and nerves.

Treatment:- The important displacement on which the surgeon should focus his attention in the forward dislocation of both forearmbones at the elbow joint. The fractures of the shaft of the radius ulna and sometimes radius can be dealt with successfully by later operative reduction but unless the forward dislocation of the forearmbones at the elbow joint is reduced promptly, there will be permanent disability. The upper ends of the radius and ulna should be pushed back until the small curved articular surface at the front of the upper end of the ulna is in normal relation with the condyle of the humerus. The joint is best immobilised in extension. If the dislocation is thus reduced, the fracture of the olecranon can be dealt with some weeks later by reconstruction and internal fixation or by excising the fragment and repairing the triceps. The fractured humerus and forearm bones at the same time are subsequently treated by closed manipulation and if this fails by open reduction and internal fixation.

Alternatively, by applying traction to the limb while the elbow joint is extended fully, it may be possible to reduce all the displacements in one manipulation and immobilisation in extension. The only secondary operation needs is repair of the olecranon process and the triceps insertion.

Immediate resection of the entire elbow joint or at least resection of the comminuted fragments composing the distal end of the radius has been recommended by some orthopedists, as the treatment of choice in this type of injury. This is not advisable as it only will certainly result in a flail joint. A more stable and useful elbow will result if the bone fragments are not resected. Furthermore, a arthrodosis of the elbow may be indicated later, especially if the person is forced to make his livelihood by manual labour. If much bone is removed, at the time of debridement, subsequent arthrodosis is extremely difficult.

Amputation is indicated only if there is severe impairment of peripheral circulation. Every effort should be made to

salvage a forearm and hand if there is any chance for restoration of function since even a poorly functioning hand in most cases is much better than prosthesis.

SUMMARY

130 cases of various fractures around the elbow treated in King George Hospital were analysed and studied with reference to age, and sex incidence, mechanism of injury, displacement of fragments, complications, treatment and final result.

A discussion on various fractures around the elbow was undertaken and literature on the subject reviewed.

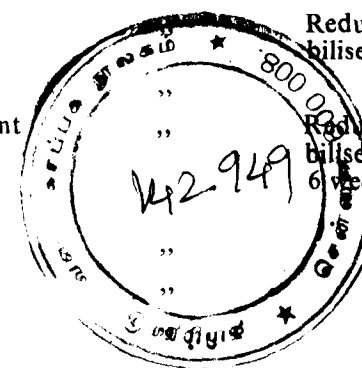
Twelve cases have been described in detail and the results of treatment were assessed.

BIBLIOGRAPHY

1. Robert James: "Injuries about the elbow in children". B.M.J. 1932, 1, 739.
2. Siris I.E. "Supra-condylar fractures of Humerus. Analysis of 330 cases". Surg. Gynaec. & Obst. 1939, 68, 201.
3. East Wood W.J. "T. Shaped fracture of Humerus". J.B.J.S. 1937 19, 364.
4. Evans E. Mervyn. "Intercondylar fractures of Humerus". J.B.J.S. 1953 35B 146.
5. Lawson T. "Fractures Humerus". J.B.J.S. 1930, 12, 911.
6. Reich, R.S. "Intercondylar fractures treated by traction". J.B.J.S. 1936, 18, 997.
7. Fagge C.H. "Supra-condylar fractures of Humerus". B.M.J. 1936, 1, 604
8. Girdlestone; G.R. "Avoidable disasters". B.M.J. 1936. 349.
9. Trynn. A.H. "Intercondylar T. Shaped fracture".
10. Wilson, P.D. "Capsulectomy for relief of flexion contracture following elbow fractures", J.B.J.S. 26, 71-86.
11. Nicholson, J.T. "Compound comminuted fractures involving elbow joint, treatment by resection of fragments". J.B.J.S. 28, 565-75 July, 46.
12. Console A.D. "Segmental arterial spasm associated with supra-condylar fractures". Surgical Clinics of North America. 28, 267-72. April 48.
13. Spear H.C. "Bapture of Brachial artery following supra-condylar fractures". J.B.J.S. 33 A: 889-94 October 51.

14. Birount W.P. "Fractures in children". Journal of American Medical Association. 146, 699-704 June 24. 1951.
15. Wilson P.D. "Fractures of lateral Condyle of Humerus". JBJS. 1936 18, 312.
16. Speed J.S. & Macy H.B. "Fractures of Humeral Condyles in children". J.B.J.S. 1933, 15, 903.
17. Mclarie M. "Injuries of lateral condyle of humerus in children". J.B.J.S. 36, B, 84-89, Feb. 54.
18. Brooks D.M. "Traumatic ulnar neuritis". J.B.J.S. 1950, 32B, 291.
19. McGowan A.J. "The results of transposition of the ulnar now for traumatic ulnar neuritis". J.B.J.S. 1950, 32B, 293.
20. King, T. "Epicondylactory for ulnar neuritis." J.B.J.S. 1950, 32B, 440.
21. Watson James, R. "Nerve lesions in injuries of the elbow". J.B.J.S. 1930, 12, 121.
22. Devidson A.J. & Horwitz. M.T. "Tardy ulnar paralysis". J.B.J.S. 1935, 17, 844.
23. Walker H.B. "Displacement of epicondyle in to elbow joint. B.J.S. 1938, 15, 677.
24. Cotton, F.J. "Elbow dislocation and ulnar nerve injury". J.B.J.S 1939, 11, 348.
25. Roberts N.W. "Interla epicondylar in elbow-Four cases treated by Manipulation" Lancet 1934, 2, 78.
26. Fairbank & Buxton: "Displacement of epicondyle into elbow joint". Lancet 1934, 2, 208.
27. Schmir A.A. "Internal epicondyle epiphysis and elbow injuries". Surg. Gynaec. Obst. 80, 416-21. April 45.
28. Patrick. J. "Fracture of medial epicondyle with displacement into elbow joint". J.B.J.S. 28, 143-47., January 46.
29. Patterson R.F. "Fractures of the neck of the radius in children". J.B.J.S. 1934, 16, 695.
30. Jeffery, C.C. "Fracture of the Head of the Radius in Children". J.B.J.S. 1950, 32-B, 314.
31. Evans Mervin. "Pronation injuries of forearm with special reference to Anterior Monteggia fracture". J.B.J.S. 31-B, 578-88 November '49.
32. Penrose J.H. "Monteggia fracture with posterior dislocation of the radial head". J.B.J.S. 33-B, 65-73. February '51.
33. Perkins, G. "Fractures of the Olecronon". B.M.J. 1936, 2, 668.
34. Naughton, Dunn. "Operation for fracture of the Olecronon" B.M.J. 1939, 1, 214.
35. Rombold, C. "Operation for suture of fracture of Olecronon. J.B.J.S. 1934, 16, 1947.
36. Hey Groves. E.W. "Fractures of the Olecronon". B.M.J. 1939, 1, 296.
37. Highsmith L.S. "Side-Swipe fractures". Arch. of Surgery. 52, 513-22 May 1946.
38. Watson Jones: "Fractures and joint injuries":

No.	Name	Age	Sex	Duration	Mechanism of injury.	Diagnosis.	Displacement	Complications	Treatment	Result
1.	Mrs. N.	33	F	4 days	Fall on outstretched hand.	Supra-Condylar T shaped fracture	Posterior and medial displacement of fragments.	Nil	Treated with skin traction in extension in Thomas arm splint.	Good
2.	Mrs. S.	30	F	2 "	"	"	"	"	"	"
3.	Mr. S.	45	M	1 day	"	"	"	"	"	"
4.	Mr. P.	44	M	2 days	"	"	"	"	"	"
5.	Mrs. V.	38	F	5 "	"	"	"	"	"	not known
6.	P.N.	35	M	10 "	"	"	"	"	"	"
7.	R.	32	M	2 "	"	"	Posterior displacement with little splaying of fragments.	"	Displacement corrected with a little moulding and P.O.P. applied	"
8.	G	45	M	4 "	"	"	"	"	Skin traction in extension in Thomas arm splint.	"
9.	S	7	M	2 "	"	Supra-Condylar fracture Lt.	"	"	Skin traction in extension in Thomas arm splint.	"
10.	K	8	M	1 day	"	"	Posterior displacement	"	"	"
11.	S.R.	9	M	1 "	"	"	No displacement.	"	Reduced and Immobilised in flexion.	Good
12.	S.J.	12	M	1 "	"	"	"	"	"	"
13.	S.	6	F	2 days	"	Supra Condylar fracture.	Posterior displacement	"	Reduced and immobilised in P.O.P. for 6 weeks.	Not known.
14.	P.R.	6	M	1 day	"	"	Posterior and medial displacement.	"	"	"
15.	S.N.	8	M	1 "	"	"	"	"	"	"
16.	Y.R.	6	M	1 "	"	"	"	"	"	"
17.	A.M.	11	F	1 "	"	"	"	"	"	"
18.	A.N.	11	M	1 "	"	"	"	"	"	"
19.	D.R.	8	M	4 months	"	Old unreduced Supra-Condylar fracture.	Posterior	Volk Man's contracture.	Under Anesthesia fingers stretched as much as possible and cock up splint given.	Not known
20.	K.M.	6	M	2 days	"	Supra Condylar fracture (Rt.)	"	Soft tissue inter position.	Reduction tried thrice, but not satisfactory P.O.P. slab given and discharged.	"
21.	R.S.	18	M	2 months	"	Old Supra Condylar fracture.	"	Posterior dislocation present.	Sham reduction of the dislocation done twice and slab given.	"
22.	S.	7	M	1 day	"	"	Posterior and lateral	Nil	Reduced and P.O.P. given.	Good.
23.	K.S.	10	M	1 "	"	"	No displacement	"	"	"



No.	Name	Age	Sex	Duration	Mechanism of injury.	Diagnosis.	Displacement	Complications	Treatment	Result
24.	Y.S.	10	M	2 days	Fall on the point of elbow.	Supra Condylar fracture (Lt.)	Posterior and medial	nil	"	"
25.	P.S.	8	M	1 day	"	"	"	"	"	Not known
26.	V.K.	10	M	3 days	"	"	"	"	"	"
27.	G.G.	7	M	2 "	Fall on out-stretched hand.	S.C.F. (Lt.)	Nil	Nil	Reduced and P.O.P. applied in flexion	Not known
28.	S.L.	7	M	1 day	"	S.C.F. (Rt.)	"	"	"	"
29.	K.S.	6	M	1 "	"	"	"	"	"	"
30.	S.S.	8	M	2 days	"	S.C.F. (Lt.)	Posterior and medial	"	"	"
31.	V.G.	7	M	"	"	"	Posterior	"	"	"
32.	M.K.	8	M	1 day	"	S.C.F. (Rt.)	Posterior and medial	"	"	"
33.	V.R.	25	M	"	"	S.C.T. shaped fracture (Lt.)	Posterior	"	"	"
34.	B.S.	9	M	2 days	"	S.C.F. (Lt.) "	Posterior and lateral	"	Reduced and P.O.P. applied in flexion	Good.
35.	K.A.	6	F	3 "	"	"	"	Threatend gangrene, Extensive odema absence of pulse.	Limb placed in Thomas splint & raised odema subsided in 3 days. Pulse returned 1 week later fracture reduced & P.O.P. slab given in flexion.	Functional recovery after 3 months is fair.
36.	B.R.	6	M	1 day	Not known	Old S.C.F. (Lt.)	Medial tilting	Cubitus varus	Nil	—
37.	M.M.	3	F	"	"	S,C.F. (Rt.)	Posterior	Nil	Reduced & P.O.P. in flexion.	Good.
38.	K.R.	12	M	2 days	"	S.C.F. (Lt.)	"	"	"	"
39.	M.R.	6	M	2 "	Fall on the point of elbow	"	Posterior and medial	"	"	"
40.	G.P.	8	M	1 day	Unknown	"	Nil	Nil	P.O.P. given for 4 weeks	"
41.	L.M.	4	M	"	"	" (Rt.)	Posterior and lateral	Nil	Reduced & P.O.P. applied for 4 weeks	Unknown
42.	S.A.	8	M	"	Fall on out streched hands.	" (Lt.)	Posterior	Nil	"	Good.
43.	E.S.	8	M	"	"	" (Rt.)	Posterior and Medial	Nil	"	Good.
44.	C.S.	10	M	"	"	"	"	"	"	Not known.
45.	J.S.	9	M	"	"	" (Rt.)	"	"	"	"
46.	K.A.	6	M	"	"	" (Lt.)	Posterior and lateral	"	"	"
47.	A.R.	6	M	2 days	"	"	Posterior & Medial	"	"	Good.
48.	V.V.L.	6	F	25 "	"	"	Nil	Myositis Ossificians.	Advised active movements of the elbow.	Not known.
49.	M.R.	10	M	2 "	"	"	Nil	Nil	Slab & bandage for 4 weeks.	Good.
50.	C.A.	4	M	1 day	"	"	Posterior & Medial	"	Reduced & P.O.P. applied and flexion.	Not known.
51.	G.R.	8	M	"	"	"	"	"	"	"
52.	S.B.	4	F	2 days	"	"	"	"	"	"

No.	Name	Age	Sex	Duration	Mechanism of injury.	Diagnosis.	Displacement	Complications	Treatment	Result
53.	S.S.	8	M	1 day	"	"	Posterior & Medial	Mysositis ossificans	Reduced & P.O.P. applied for four weeks.	Not Known.
54.	K.B.	8	M	"	"	"	"	"	"	"
55.	A.S.	9	M	one day	"	"	Mal-united with medial Angulation.	Cubitus varus deformity.	Nil	—
56.	L.S.	8	M	"	"	"	Posterior and medial	—	Reduced and immobilised in flexion for four weeks.	Good.
57.	K.K.	10	F	5 months	"	S.C.F. (Rt.)	Backward Anglution.	Malunated with backward Angulation.	—	Limitation of flexion.
58.	R.S.	10	M	1 day	"	"	Posterior	Nil	"	Good.
59.	D.R.	19	M	3 year	Not known	" (Lt.)	Posterior and medial	Miositis ossificans	Advised active movements of elbow	Not known
60.	K.A.	6	M	2 days	Fall on out stretched hand.	"	Backward angulation	Nil	Reduced & immobilised in flexion for four weeks.	Good.
61.	C.A.	4	M	3 months	Not known	S.C.P. (Rt.)	Nil	Nil	P.O.P. slab applied for four weeks.	"
62.	T.R.	30	M	4 days	"	" (Lt.)	Nil	Nil	"	Not known
63.	C.R.	3	M	1 day	"	"	Posterior & Medial	"	Reduced & immobilised in flexion for four weeks.	"
64.	M.A.K.	7	M	"	Fall on the point of elbow.	"	Backward angulation	Nil	Angulation corrected and immobilised P.O.P.	Good.
65.	K.S.	8	M	"	"	"	Nil	Nil	Slab and bandage for four weeks.	"
66.	P.A.S.	10	M	1 day	Not known	"	"	"	"	"
67.	P.V.R.	7	M	3 days	Falls-on out streched hand.	"	"	"	"	"
68.	K.M.	6	F	1 day	"	"	"	"	"	"
69.	P.S.	11	M	"	"	"	"	"	"	"
70.	C.T.	6	F	"	"	"	"	"	"	Not known.
71.	S.S.	10	M	"	"	"	Posterior & Medial	"	Reduced & immobilised in flexion for four weeks.	"
72.	D.S.R.	11	M	"	"	" (Rt.)	Nil	"	Slab and bandage for four weeks.	"
73.	B.S.	6	F	"	"	" (Lt.)	Posterior & lateral	"	Reduced & immobilised for four weeks.	"
74.	B.S.R.	12	M	"	"	" (Rt.)	Posterior and medial	1. Cubitus varus 2. Ch. Osteomyelitis Lower end of humerus.	Advised a course of Pencillin.	"
75.	R.D.	8	M	15 days	Not known	"	Medial angulation	Cubitus varus deformity.	Advised Osteotomy	—
76.	K.A.	14	M	4 months	"	" (Lt.)	Posterior & lateral	Nil	Reduced & Immobilised in P.O.P. for 4 weeks.	Not known
77.	S.S.	16	M	3 months	"	Old case of S.C.F.	Posterior	Nil	"	"

No.	Name	Age	Sex	Duration	Mechanism of injury.	Diagnosis.	Displacement	Complications	Treatment	Result
78.	B.V.	6	M	1 day	Fall on out-stretched hand	S.C.F. (Rt.)	Posterior & Medial	Soft tissue inter position.	Reduction tried thrice But unsuccessful. Slab & bandage applied and patient asked to report six weeks.	Unknown.
79.	C.K.	9	M	2 days	"	"	No displacement	Nil	Immobilised in P.O.P. causing for 6 weeks.	"
80.	P.R.	12	M	1 day	"	" (Lt.)	Rotated 90 on a vertical axis	"	Open reduction done and the fragment sutured in position.	Good.
81.	P.A.	4	M	3 days	Fall on out-stretched hand.	Fracture of the lateral condyle.	The fragment is rotated 90 on the horizontal axis and 45 on vertical axis.	Following open reduction the elbow dislocated posteriorly. It was then reduced under general anaesthesia.	Open reduction done	Not good only 10° of movement possible at the elbow.
82.	V.V.	10	M	2 days	"	"	Rotated by 90 on the vertical and horizontal axis.	Nil	Open reduction and immobilisation in P.O.P. for six weeks.	Fair.
83.	S.K.	10	M	1 day	"	"	"	"	"	Good.
84.	M.R.	5	F	"	"	"	No separation	"	Immobilised in flexion with P.O.P. casing and asked to report after 6 months.	Good.
85.	S.V.B.	9	M	4 days	Fall on flexed elbow	Fracture of lateral condyle.	Rotated 90 on a horizontal axis	Nil	Open reduction.	Good.
86.	V.A.	9	M	2 "	Fall on out-stretched hand.	"	"	"	"	Not known
87.	P.P.	6	M	"	"	"	Rotated 90 on horizontal and vertical axis.	"	"	"
88.	C.R.A.	9	M	3 days	"	"	No displacement	"	Immobilised in P.O.P. casing for 6 weeks.	"
89.	K.	9	F	2 days	"	"	"	"	"	"
90.	F.R.	24	M	4 days	Hit on the elbow with a stick.	Fracture lateral epicondyle.	Displaced to joint level	"	"	"
91.	J.A.	25	F	6 "	Fall on outstretched hand.	Fracture medial epicondyle.	Tilted medially and downwards.	"	Head of the radius excised.	Good.
92.	N.P.	10	M	3 "	"	Fracture medial condyle.	The fractured fragment is displaced outward	"	Head excised.	Not known.
93.	D.S.	12	M	4 "	Falls on the out stretched hand.	Fracture head of the radius.	Onward and downward	"	"	"
94.	B.B.	30	M	2 "	"	"	"	"	"	Joint stiff movement not recovered properly
95.	A.K.	40	M	"	"	"	Antero-medial displacement.	"	"	Good
96.	T.R.	26	M	5 "	"	"	Downward and lateral	"	"	"
97.	P.E.	50	F	8 "	"	" (Lt.)	"	"	"	Not known.
98.	A.S.	20	M	4 years	"	" (Rt.)	"	"	"	"

No.	Name	Age	Sex	Duration	Mechanism of injury.	Diagnosis.	Displacement	Complications	Treatment	Result
99.	K.L.	13	F	2 days	"	"		Evidence of myositis Ossificans.	Advised active movements.	Joint stiffness due to myositis following massage.
100.	M.S.	11	F	3 "	"	"	Downward and onward.	Nil	Excision of head done	Not known.
101.	C.S.	30	M	4 months	"	Fracture head treated by excision. (Lt.)	"	"	"	"
102.	R.	22	M	2 days	Fall on outstretched hand	Fracture head of the radius.	No displacement	Nil	Elbow immobilised in P.O.P. for six weeks.	"
103.	K.	10	M	6 "	"	"	Inward tilting of the medial fragment.	"	Excision of head done.	"
104.	P.L.	50	F	4 "	"	Fracture neck of the radius with fracture of the shaft of the ulna. (Rt.)	Downward and outward tilting.	"	Refused operation	
105.	P.	36	M	3 "	"	Fracture of head of radius near its middle left.	Nil	Osteoarthritis of the elbow.		Not known
106.	B.S.	30	M	2 "	"	Fracture head of radius left.	Slight anterior displacement	Nil	Excision of the head done.	"
107.	S.R.	30	M	4 months.	"	Old fracture head of the radius.	Outward	"	"	"
108.	Ch.S.	30	M	1 day	"	Fracture head of the radius (R.T.)	Anterior and medial	"	"	"
109.	P.A.	25	M	2 days	"	" (Lt.)	Fragment consisting of medial 1/4 displaced medially.	"	"	"
110.	B.S.	20	M	2 "	"	"	1. The fractured head is displaced medially 2. Upper end of the radius is displaced Forwards 3. Anterior angulation of the fractured ulna	"	Head of the radius was excised and the fracture dislocation reduced. Immobilised., in P.O.P.	Not known.
111.	A.A.K.	35	M	"	"	" (Rt.)	No displacement	Nil	Open reduction and screw fixation done	"
112.	S.	11	M	4 "	"	Extension type of anterior Monteggia fracture dislocation with fracture head of radius.	"	"	"	"
113.	D.P.	30	M	3 days	Alleged to have been hit on the elbow with a stick.	Fracture olecronon process (rt.)	"	"	Treated by immobilising in P.O.P.	"
114.	G.A.	25	M	1 month	Fall on semiflexed rt. elbow.	"	Wide separation of the proximal and distal fragments.	Not known.	Not known.	"
115.	A.G.	60	M	4 days	Direct hit on the elbow.	Comminuted fracture of olecronon.	—	1. Myositis ossificans. 2. Chronic osteomyelitis, upper end of ulna and lower end of humerus	Sham reduction done twice; drainage of wound done once. Penicilin and streptomycin.	"

No.	Name	Age	Sex	Duration	Mechanism of injury.	Diagnosis.	Displacement	Complications	Treatment	Result
116.	G.	20	F	2 days	Not known	Comminuted fracture of olecranon	1. Head of the radius displaced anteriorly. 2. Over riding of the ulna with slight lateral angulation.	Nil	The fracture and dislocation were reduced under general anaesthesia and immobilised in P.O.P.	Good
117.	D.S.	45	M	1 year	Fall on the semiflexed elbow.	Old compound fracture olecranon (rt) excision of olecranon done elsewhere.	1. Head of the radius displaced anteriorly. 2. Anterior angulation of ulna.	1. Myositis ossificans 2. Chronic osteomyelitis, upper end of ulna and lower end of humerus.	Nil	
118.	N.A.	27	M	1 day	Fall on the outstretched hand.	Monteggia fracture dislocation (rt.)	"	"	Reduced and immobilised in P.O.P.	Not known
119.	J.S.	9	F	8 years	Not known.	Old unreduced Monteggia fracture dislocation (left.)	"	"	"	"
120.	M.J.	12	M	4 days	Fall on outstretched hand.	Monteggia fracture dislocation (lt.)	"	"	"	"
121.	S.P.	6	M	2 "	Fall on the flexed elbow.	" (Lt.)	Lateral angulation of ulna anterior dislocation of head of radius.	"	"	"
122.	A.S.	26	M	21 "	Fall on outstretched hand.	" (Lt.)	"	Myositis ossificans Non union of ulna.	Excision of head of radius done. Ulna exposed, fibrous tissue removed and few cuts given into the bony ends to reach the narrow.	Good.
123.	C.B.	10	M	2 "	"	" (Rt.)	Anterior angulation of ulna with anterior displacement of head of radius.	Nil	Reduced and immobilised.	Not known.
124.	T.D.	28	M	2 months	Hit with a stick	" (Rt.)	"	"	Excision of head of radius done and fracture-ulna reduced.	"
125.	T.P.	8	M	10 days	"	" (Lt.)	"	Myositis ossificans.	Excision of the head of radius with some callum done.	"
126.	K.S.	11	M	6 days	"	Fracture head of radius.	Anterior displacement.	Nil	Excision of the capitulum done.	"
127.	D.V.	38	M	4 months	"	Monteggia (Rt.)	"	"	"	"
128.	T.R.	20	F	3 days	Fall on the point of elbow.	Fracture of the capitulum, (lt.)	"	"	"	"
129.	K.B.	25	M	2 "	Fall on outstretched hand.	" (Rt.)	"	"	"	"
130.	P.R.	18	F	4 "	Beaten on the elbow with a stick.	" (Rt.)	"	"	"	"

Notes & News

MEETING OF DRUGS CONSULTATIVE COMMITTEE

A meeting of the Drugs Consultative Committee was inaugurated in New Delhi, on July 16, by Shri V. K. B. Pillai, Secretary, Union Ministry of Health.

Representatives of almost all States attended the meeting which was presided over by Shri S. K. Borkar, Drugs controller, Government of India.

On the representation of the All India Unani and Tibbi Association, the Drugs Consultative Committee recommended that bona fide Ayurvedic and Unani drugs should not be controlled under the Drugs Act.

The Committee has proposed that manufacturers of patent and proprietary medicines should market their products in the form of tablets or capsules in strip packings so as to facilitate their purchase in original packings. The Committee has also suggested that patent and proprietary medicines in the form of liquid should also be sold in consumer packings.

The Committee discussed the conditions to be complied with by manufacturers of drugs, particularly those relating to building and accommodation with reference to practical difficulties encountered in enforcing them. The Committee considered at length measures for ameliorating the shortage of technical personnel, which was stated to be a major handicap in the enforcement of the provisions of Drug-Rules.

QUALITY OF INDIAN D. D. T.

The United Nations International Children's Emergency Fund (UNICEF) authorities have accepted the Indian standard specification for D. D. T. (IS 565-1955).

The UNICEF authorities have reported after conducting tests that both the Indian

and the WHO specifications for D. D. T. would result in comparable products.

With assistance from the UNICEF and the World Health Organisation (WHO), a factory in Delhi was set up by the Government of India for the production of D.D.T. for the anti-malaria campaign. Another factory at Alwaye has also commenced production.

The Delhi D.D.T factory was so far producing D.D.T to the WHO specification. On the basis of the concurrence of the UNICEF and WHO authorities and the Union Ministry of Health, the Hindustan Insecticides (Private) Limited, which manages the D. D. T factory has agreed to produce D. D. T. in conformity with the Indian standard specification in future.

INDIGENOUS SYSTEMS OF MEDICINE

An Adviser on indigenous systems of medicine has been appointed by the Central Government and three advisory committees of experts in Ayurveda, Unani and Homeopathy have also been constituted for scrutinizing research and development schemes received from institutions through State Governments and for recommending grants for the purpose.

The Government of India's decision to recognize the best in indigenous systems of medicine, including Ayurvedic and Unani, and for this purpose to promote research and impart scientific training in these systems dates back to resolutions of the National Planning Committee and the first Conference of Health Ministers held in 1948.

In pursuance of the recommendations made at that Conference the Government of India have given assistance to the State Governments for the upgrading and establishment of new colleges in these systems. They have established besides, the Central Institute of Research in Indigenous Systems of Medicine, and the Post Graduate Train-

ing Centre in Ayurveda, at Jamnagar. In accordance with the decision of the Central Council of Health at their meeting held on January 8, 1958, the State Governments have been requested to take whatever steps they consider necessary for promoting the indigenous systems of medicine.

These policies have been the product of a series of developments. The first of these was the appointment in 1946 of a committee under the chairmanship of Shri R. N. Chopra, to examine the question of development of indigenous systems of medicine in all its aspects and make suggestions for the purpose. The Chopra Committee's report, in its broad principles, was accepted by the Government of India.

PANDIT COMMITTEE

The Government of India considered the question of the formulation of an all-India policy in regard to health in 1949; and as a sequel, another committee was appointed under the chairmanship of Dr. C. G. Pandit to work out a detailed scheme for the development of a centre of research in Ayurvedic and Unani systems of medicine and suggest ways for giving them instruction in the colleges of modern medicines as well.

The committee also recommended that students of modern medicine should also be admitted to the research centre for further studies in indigenous systems of medicine. On the question of imparting instruction concurrently in Ayurveda and modern system of medicine, the committee approved the Bhore Committee recommendation for the institution of chairs in the History of Medicines in Universities. Under this scheme a grant of Rs. 7,200, (being 75 per cent of the expenditure on the scheme) was sanctioned to the Government of Madras in 1957.

CENTRAL RESEARCH INSTITUTE

Following the Pandit Committee's recommendations, the Government of India set

up in 1953 a Central Institute of Research in Indigenous systems of Medicine in association with the Gulab Kunverba Ayurvedic Society in Jamnagar. The functions of this institute are: to promote research in indigenous systems of medicine so as to make them more effective and beneficial, and to provide facilities for training of workers in methods of research.

In furtherance of this policy, a post-graduate training centre was established at Jamnagar in 1956. Twenty five students were admitted at this centre to start with, and both vaidyas and graduates of modern medicines were eligible for admission. Training in the institution is conducted entirely on Ayurvedic lines and the students are required to undertake research as a part of the training and all facilities are provided to them for qualifying for higher degrees in Ayurveda.

In February 1954 the Rajakot session on the Central council of Health urged that practice of Ayurvedic, Unani, and Homoeopathic systems of medicine by persons who are not registered as practitioners of any system should be prohibited by legislation.

In pursuance of this policy the Dave Committee was appointed by the Government of India on April 27, 1955, to; (1) survey the existing facilities for teaching Ayurvedic, Unani and Homoeopathic systems of medicine; (2) recommend specific measures to be taken to improve facilities for training and to establish uniform standards of education in these systems; and (3) make suggestions for the regulation of practise in these systems of medicines including the desirability of State control.

The Committee's reports published in 1956, were placed before the Central Council of Health at their meeting held in December 1956 and again before the Council's meeting held in January 1958. After full consideration, the Council left it to the State Governments to take such steps as

EDITORIAL NOTICE



We invite the members of the Medical profession to contribute original articles for publication in the 'Mediscope'. Please send only original type-script (not carbon copy) with double spacing to facilitate the printers and proof readers. Kindly see that the Graphs, charts and other diagrams are drawn in black ink on white paper so that sharp and clear blocks could be made. Let the photographs be as large as possible in black and white with clear details. Out-of-pocket expenses incurred for supplying photographs, Graphs, Diagrams, & Charts can be met by us within reasonable limits if the author desires.

References:— Foot notes and bibliographic references should follow the style of the Quarterly Cumulative Index Medicus of the American Medical Association. This requires the following in the order mentioned below:

- Surname and the initials of the author
- Title of the article,
- Name of the periodical with its vol. No., page No., and the date of the publication.

The 'Mediscope' is published under the direction of the Editor and the Editorial Board, who reserve the right of publication or rejection of any article.

The Editor or the Editorial Board or the publisher do not accept any responsibility for the accuracy of the statements or the opinions expressed by the contributor.

Proofs can be sent for author's approval if specific instructions are received along with the manuscripts, provided time permits.

Reprints:— 25 copies of reprint of the article published in the 'Mediscope' will be supplied *free of cost* to the author. Extra reprints can be supplied at nominal cost if instructions are received along with the contribution.

Copyright:— The 'Mediscope' is covered by copyright; but prior permission in writing of the publisher is essential for reproduction in reputed medical journals.

Communications:— All communications should be addressed to the Editor, 'Mediscope' Journal of Medicine & Surgery, 57, Burkit Road, T'Nagar, Madras-17.

they considered practicable and desirable for the development of Ayurveda and other indigenous systems of medicine, and recommended that the Government of India should actively encourage research in Ayurveda, Unani and Homoeopathic and other indigenous systems.

Apart from encouraging research the Union Ministry of Health gives grants-in-aid to State Governments for the establishment and running of teaching institutions in indigenous systems of medicine. In the First Five Year Plan a provision of Rs. 37.5 lakhs was made for giving grants to research schemes, out of which a sum of about Rs. 13 lakhs was sanctioned during the Plan period. The scheme itself came into being during the latter half of the Plan period and the response from State Governments and research institutions was of a limited nature.

Central assistance is being given for the following schemes under the Second Plan.

- To meet the recurring cost of maintenance of research beds in selected institutions for approved research schemes, at the rate Rs. 2,000 per bed per annum;
- for ad hoc research scheme on the merits of each scheme; and (iii) for improving the existing teaching institutions and for the establishment of new teaching institutions in the States.

In addition assistance is also being given for improving the teaching institutions which are already included in the State plans. The pattern of assistance for this purpose will be 75 per cent of the non-recurring expenditure, including the cost of the college building (subject to the ceiling fixed by the Government of India) and 50 per cent of recurring expenditure of the college (not the hospital) for the period of the Second Five year plan.



CLINICAL DIAGNOSIS OF LEPROSY

The clinical diagnosis of leprosy infection with *mycobacterium leprae* in early

stages has been presenting severe difficulties to medical men, owing to the absence of skin blemishes or lesions on the patient's body. Investigations carried out at the Indian Institute of Biochemistry and Experimental Medicine at Calcutta in collaboration with the Premanand Leprosy Dispensary, one of the leading Institutes in the country for the treatment of this disease, have given hopeful results.

These investigations have shown that serological tests may be usefully employed for detection of the early and silent phases of leprosy.



TRAINING OF AUXILIARY NURSE-MIDWIVES

The Union Ministry of Health has sanctioned a sum of Rs. 20,000 for the training of Auxiliary Nurse-Midwives at the Dayanand Hospital, Ludhiana during 1958-59.

Snaction has also been given by the Ministry to the U. P. Government's scheme for the training of 1,800 Dais during 1958-59 at 30 units in the State.



EXPERT COMMITTEE ON EPIDEMICS

The Indian Council of Medical Research has constituted an expert committee to inquire into the epidemiology of small-pox and cholera, and to suggest short-term and long-term measures for controlling the spread and eradication of these diseases.

This expert committee will collaborate closely with expert committees which are to be set up by State Governments.

Corrigendum

VITAMINETS FORTE 'ROCHE'

In Vol. I. No. 5, Aug '58 issue, page, 187, it is inadvertently printed as 'Vitamin B 2' while the correct reading should be 'Vitamin B 12'. The error is regretted.

Editor.

MIC (Capsules, tablets, Liquid, Injection)

for **Liver diseases...**

Composition:

- **Each Mic Capsule contains:-**

Methionine	250	mg.
Inositol	50	mg.
Choline Di-hydrogen Citrate	200	mg.

- **Each Mic Tablet contains:-**

Methionine	125 mg.
Inositol	25 mg.
Choline Di-hydrogen Citrate	100 mg.
Folic Acid, B.P.	1 mg.
Vitamin B ₁₂ B.P.	1.5 mcg.

- Each 30 c.c. of Mic Liquid contains:-**

Acetyl Methionine	1.56	G.
Inositol	0.31	G.
Choline Chloride	1.25	G.

- Each 2c.c. ampoule of Mic Injection contains:**

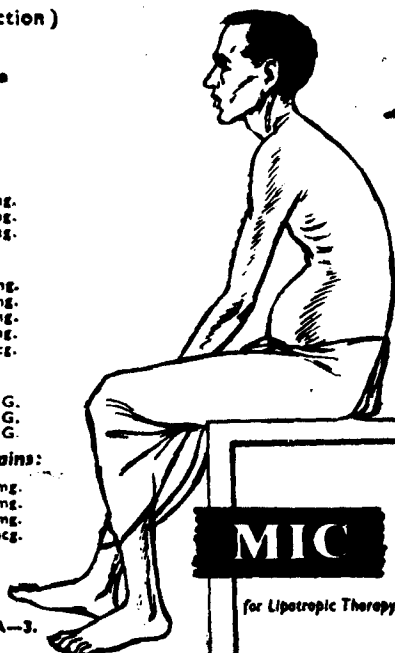
Acetyl Methionine	50 mg
Inositol	100 mg
Choline Chloride	200 mg
Vitamin B ₁₂ B.P.	10 mcg

Alambic.

ALEMBIC CHEMICAL WORKS CO. LTD., BARODA-3.

You can put your confidence in Alembic.

四、环境因素



T.C.F.

VITAMIN B-COMPLEX

ORAL-LIQUID

(Including Vitamin B₁₂, mainly derived from natural sources)

PARENTERAL

(Vitamin B₁, B₂, Niacinamide, B₆, Choline and d-Pantothenyl Alcohol with liver base)

TABLETS

(Vitamin B₁, B₂, Niacinamide,
B₆, and Calcium Panthothenate)

▶ FORTE CAPSULES

(A concentrated preparation including Vitamin B₁₂ and yeast powder)

Products of: **TEDDINGTON CHEMICAL FACTORY PRIVATE LTD. Bombay**

Sole Distributors: W. T. SURÉN & CO. PRIVATE LTD. P. O. Box 229, Bombay 1

WT. 5116

[illegible]