Dr. Ms. Anita Lisaval

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THE INDIAN JOURNAL OF OCCUPATIONAL THERAPY

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From Managing Editor's Desk

Dear Friends,

In this very first issue of 1987, we bring to you 'First Person Experience' of Dr. P. Malik who has undergone treatment for fracture Patelle. Being on this side of the fence, we do not realise what the person on the other side is going through. It is worth hearing, at times, what our clients have to say about us and our treatment modalities.

In the other article Dr. Ms. Kavita Bedi has presented a novel idea of designing functional prosthesis for Partial Hand Amputees, a very original idea, indeed, much needed in our setup.

We are sure that after reading the Economic Review presented by AIOTA treasurer, Dr. S. L. Rai, you will feel that our National Association has done as proud. Hopefully you all will contribute to make it grow stronger and wealthier by motivating more and more therapists to enrol as its members.

DR. (MRS) RAJNI JAGASIA
Managing Editor

First Person Narration :–

MOBILISATION OF MY KNEE

By Dr. P. Mulik, M.S. (GYN;OBS) DGO.
Chief Medical Officer
RCF Thal.

" Fracture Patella ? Simple ", said the great Surgeon. "Not so simple" he revised when he knew that I was a 53 years old, diabetic, fussy Lady Doctor with a FBS of 237 mgm % and my patella was badly crushed. He cleared the debris, reconstructed the Quadriecps tendon and repaired the injured tissue with great skill & care. Then he immobilised the knee in plaster for 6 weeks, instead of 3 weeks, keeping his attention on acheiving a strong quadriceps tendon. Naturally I found my knee which he has so painstakingly encouraged to give strength imprisoned rigidly by adhesions. "Mobilisation under G.A." He ordered when he observed my obstinate knee which hardly moved in 5° flexion after removing the plaster. After one look at my terrified face he offered me the alternative of mobilisation by Occupational Therapy, "and shake" was his parting advice. "Simple" said the Occupational Therapist. Give me half an hour for 10 days and I will give you a fairly mobile knee. I agreed readily with absolutely no idea of what was in store for me.

He assured me of expert advise and supervision while I performed a few simple exercises. The principle was to relieve chronic pain by acute pain. I realised much later that there was absolutely no difference in the total amount of pain to be tolerated. But, I could control the pain by stopping at will. Last but not the least I could not blame the Occupational Therapist for my pain.

So it started with the bliss of ignorance. I was given the heavy medicine ball to roll up a wooden slope and then lift my leg to let it slide down. I was frustrated failure as I struggled with severe spasm and excruciating pain. No one laughed. Softly they advised me to stop and relax before trying again. So I gathered courage and will power as I looked around at others trying hard like me I dared not accept defeat while the Occupational Therapist kept a kind but watchful eye on my performance. Moreover, I had asked for it so I had to obey him. My performance improved and the pain came down below threshold level within next 3 days.

y'day =

Then he measured and found 25° flexion at my knee. He made me sit on a high bed and gently guided my leg to hang down by gravity from the painfully rigid knee As he requested me to extend the knee against gravity the effect of gentle handling was rudely overtaken by the sudden peak of pain with a minimal of extension. He instructed me to do this simple (?) extension exercise at home about 10 times per hour to prevent extension lag which is more important than promoting flexion. Back home I found myself in the grip of self inflicted vicious cycle of pain – Anxiety – Spasm – Pain. Relaxation was impossible. except once in 10 hrs. But I was relieved to find my quadriceps strong enough. It only needed a little training.

Next came bi-cycle riding. This static bicycle had no resistance and all other adjustments for my comfort? and yet after I managed to ride the seat I could not even swing the pedal without severe spasm. My unsatisfactory performance was praised by the holy chanting of "well done" and "Very good" under the personal supervision of the boss.

Encouraged, I survived the frequent spells of pain, spasm, fatigue and perspiration and continued my efforts. He insisted on my completion of the daily quota of exercises i. e. the ball, the cycle and the stool by keeping myself comfortable with the help of drugs. He could not understand that it was like starting the air-conditioner to reduce the heat of fire in a room. He also did not agree with me when I pointed out the possibility of becoming a drug eddict as requirement, dose, fruquency and duration were determined by my sensitivity to pain which could not be measured. The herculean efforts were rewarded with gradually increasing flexion to 70° and I could swing the pedal from 3° clock to about 11° clock position.

Once again I was told to exert more and expect still more pain as I had to push the pedal in clockwise full circle to break the most troublesome adhesion. Fear, anxiety and tension were added to the already exhausted tolerance. They tried to keep me relaxed during my final effort by telling me ammusing stories. Even my husband was requested to standby with a hankerchief for additional moral support. Suddenly I found myself in tears with excruciating pain while my foot slipped. They were all jubilant. Before I was through my groans and grumbles, and wiping the tears. I was ordered smilingly but firmly to do it again and then again and again. I was told to be happy to have released the bottleneck and that the worst was over. But, I could experience the relief and reduction of pain only after 3 days. The spasm remained the main problem Naturally, the flexion was nearing 90° now and I was given the next target to pedal anti-clockwise.

The stool squatting was a relatively less painfull exercise. It was started at 65° – 70° flexion stage and compensation was allowed initially. It always followied cycling and left me fairly comfortable at the end of the session.

The rewards at the end of two weeks were very very rich. My knee became fairly obedient. I could sit on a chair, in a car, I could climb up and down the stairs with support of rails. My walk appeared still but almost normal. I was allowed to join duty and I could take home the static bicycle and continue the exercises of at home with weekly supervision. I was asseured of uneventful further progress.

But one look at this bicycle wiped away every trace of relief and hope. The seat and pedal of this cycle were vertically too near for my knee. So once again I found myself stickup between 4° clock and 10° clock. With sinking heart and spirits I started the uphill course to achieve complete rotation of the pedal anti-clockwise and then clockwise. This took another week of pain, spasm and efforts. Of course, my performance on the old cycle at weekly visit was superb and for the first time I realised that I have really started the downhill course of unevenentful recovery to normalcy.

Till this point our wavelengths were parallel but now they progressively came nearer and for the first time we were thinking on the same wave length. I agreed with his expectation of a fairly free knee joint with pain and spasm always within tolerable limits with help of drugs rarely required., and of course we shared the pride and pleasure of achievement But he pointed out that recovery can not be complete till my knee joint becomes fully functional. He cautioned me to go slow and keep my enthusiasm in check to avoid overstrain and damage to the good knee.

All in all the experience was similar to the conquering of Himalayas. We start from successively higher base camps to conquer successively higher peaks till we we reach the Mount Everest. The apparently easily down hill course can be uneventful only if speed is controlled to avoid destruction.

FUNCTIONAL PROSTHESIS FOR PARTIAL HAND AMPUTEES

Miss Kavita Bedi

The upper extremity is a system of levers which operate in a different way from the lower limbs The purpose of these levers of the UE is to position the hand-a sense organ and a grasping tool, in space. The impact on a person due to sudden loss of a hand/arm cannot be overstated. Prosthetic fitting and training is essential to successful Rehabilitation and Reintegration of the amputee into Society. The loss of gross, fine, coordinated movements of the hand, tactile sensation, proprioceptive feed-back and aesthetic appaerance can only be compensated to a limited extent by the 3 types of prosthesis that are available at present :—

1) Functional (hook)
2) Cosmetic &
3) Cosmo–functional

As we all know the different sites of amputation in UE can be from the level of shoulder girdle till the level of distal phalanx of finger/thumb.

The different types of prosthesis shown can be used for patients with amput-ation till the level of wrist disarticulation.

Partial hand amputation :— as taken in simplest form of definition would be amputation distal to the radio carpal joint but proximal to Metacarpophalangeal joint i. e. through metacarpals of fingers/thumb at variable distances from the radio carpal joint.

For patients with partial hand amputation the available replacement are :—

1) Cosmetic (glove/leather hand)
2) Functional
   a) Conventional hook/harness &
   b) Adaptation to provide opposition against the stump/any remaining finger.

The vast percentage of mechanical hooks/hands available are not suitable for the patients with partial hand amputations mainly because of :—

1) Achieving length equal to the sound side presents a problem.
2) The inability to eliminate mechanical fingers to accomodate for the remaining digits renders these standard hands useless for prosthetic fittings.
3) If at all the conventional hooks/harness or hands are used, they do not provide a good cosmetic appearance.

Usually most of the time all patients with PHA's either keep their affected hand in pocket or cover the stump with handkerchief while moving in community or society. Probably mainly because of cosmetic appearance.

A large number of amputees which come to Occupational Tharapy department at All India Institute of Physical Medicine and Rehabilitation, are those with partial hand amputations, and as outlined earlier, the replacements which could be offered to them was mostly only the cosmetic hand or an adaptation to provide some function.

Hence a study was undertaken in the O.T. Department in order to devise a prosthesis which would provide not only function but also cosmesis and which would be operated by the nearest joint i. e. wrist joint.

Methodology :— Consists of 2 aspects :—

1) Designing the prosthesis and
2) Clinical applicalion of the prosthesis

Designing :—

a) Material used - Plaster of paris powder, bandages, ABS (Acrylo butostyrine), Metal strips of mild steel material, rivets, cable wire, zip, fitters for the last 2 passive fingers, Velcro strap, rubber bands, spacers and cosmetic glove.

b) Fabrication of Prosthesis : is explained below in short from the positive cast of the stump, the socket of ABS was moulded. This socket was fitted on the patient's hand and consisted of :—

1) Proximal dorsal portion and
2) Distal palmar portion.

Both these parts are joined by metal strips laterally with rivets, the movement axis of which coincides with the axis of the wrist joint in flexion-extension plane.

The 2 distal strips are further continued distally where the fingers are attached. This becomes the axis of the MP joint of the fingers and thumb.

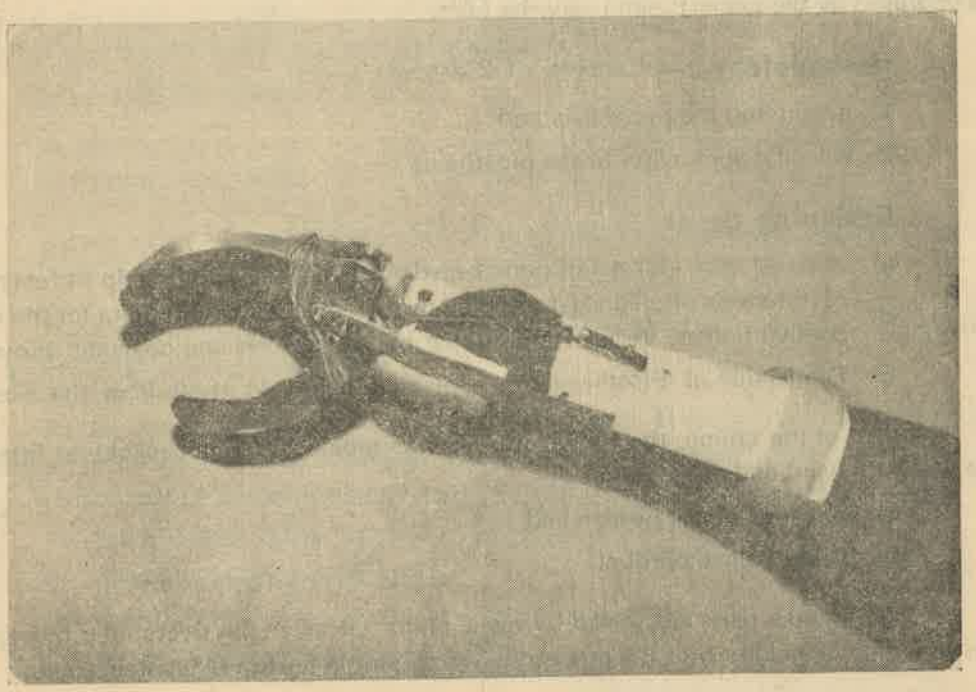
The length of the fingers is the same as on the normal side. The axis of MP joint from wrist is measured correspondingly from the normal side thereby maintaining the total length of the affected side same as normal side.

The movements possible at the MP joint are flexion extension with wrist extension/flexion.

The two fingers move together and the thumb moves at right angle to the fingers. This movement is brought about by joining the two fingers and thumb, posteriorly with 2 metal strips which are then attached to a cable.

The fingers and thumb are kept closed by rubber bands.

This cable crosses the wrist joint and is fixed on forearm piece dorsally. The length of the cable is so adjusted that the initial position of the fingers and wrist is nearer to the anatomical position of hand at rest by the side of the body. i.e. wrist in slight extension and fingers in flexion at MP joint.



The forearm and palmar portion are attached on to the stump by velcro straps.

in order to provide a cosmetic appearance to this prosthesis' a PVC glove was used matchlng in colour to that of the skin.

It was slit open on the inner side right upto the palmar portion. A zip was attached to it. This glove was then put on the fingers of the prosthesis. The passive fingers (i.e. ring and little finger) were fitted with fillers.

c) Mechanism of operating the Prosthesis :—

wrist flexion of few degrees from the resting state puts tension on the cable. This tension on the cable pulls on the metal strips which are an extension from the fingers and thumb.

This therefore opens the fingers against the tension of the rubber bands. Bringing the wrist back into extension releases the tension on the cable, thereby allowing the rubber bands to close the fingers. This prosthesis is therefore with voluntary opening terminal device.

2. Clinical application of the Prosthesis :—

Once the prosthesis was made, it was fitted on the patient. Routine check out of the prosthesis was done. Then the patient was taken up for training. Trainining included general prosthetic training programme which was then transferred to various activities of the daily living.

This Prosthesis was fitted on 5 patients :—

3 were right and 2 left sided amputees. The average length of stump is 2-2½".

Before giving the prosthesis, the patients were assessed in detail regarding their **motivation** level and their **requirements** (i e. in terms of their job/vocation/ school, etc.) All the 5 patients selected had high motivation and their work, demanded the use of both UE's. These patients have been followed up for nearly 5 months.

Follow up showed that they were using the prosthesis as supportive extremity for bilateral activities and for light unilateral activities e g. drinking water during meal times while eating with normal hand, etc.

Discussion :—

The fitting of this prosthesis with partial hand amputations high-lighted the following points :—

1) Putting on and taking off is easy.
2) Training with prosthesis is easy.
3) The prosthesis extends only till mid forearm, blocking only the wrist joint and keeping forearm, elbow shoulder etc free for good mobility.
4) This therefore provided functions at different levels, i.e. overhead, sideways, etc - easily without making the patient go into awkward postures.

5) Force of closing terminal device – adjustable by increasing or reducing rubber bands.
6) Total opening span of terminal device is about $2\frac{1}{2}$ – 3" (average)
7) Light in weight
8) Appearance wise - acceptable to the patients and
9) Over all length of UE cah be adjusted in comparision with the normal side.

Conclusion :—

The various factors mentioned aboye and others have proved that this prosthesis is useful to this group of patients and provides a combination of both i.e. functional and cosmesis which is very essential to human beings. Finally one more point, that as the results are very encouraging, further work at the Institute is still continuing as there is lot of scope for further improvement.

My sincere toanks to Mrs. J. P. Masur - Chief Occupational Therapist for her valuable guidance and help in the course of this project. Also my thanks to Dr. A. K. Mukherjee - Director All India Institute of Physical Medicine & Rehabilitation for permtting me to present the paper and allowing me to avail the facilities at the Institute.

This paper was presented at the Silver Jubilee Conference of AIOTA held at Bombay On Sept. 20 — 22, 1986.

CORRECTION :— Please note

We have been informed by Prof. Mrs. M. M. Shahani, the chairperson of Silver Jubilee Conference Committee of A.I.O.T.A., that the rolling trophy for best adaptation was awarded to Dr. Mrs. Nirmala Venkateshwaran of Government Institute of Rehabilitation Medicine, Madras.

This information was omitted due to over sight, from the conference report, printed in December' 86 issue of I.J.O.T. She has expressd her regrets for the same.

MANAGING EDITOR

THE ALL INDIA OCCUPATIONAL THERAPISTS' ASSOCIATION
AN ECONOMIC REVIEW

It is a well known fact that the strength of any organization lies in the integrity and unity of its members. The All India O.T. Assn. has gone through various changes with many ups and downs during past decade. If we take a look back, a few years ago it was passing through a crisis; where it was struggling for survival with a very low economic status and a low line of its members. But the changes may occur if the efforts are made. In the past few years the situation has been dramatically changed to the present stable position. The continous efforts, dedication and service to the members has given a sound base to the Association economy and its functioning.

I would like to put forth the factual data with some of the facts and figures in order to review the development of our Association economy for atleast last 3 years. This may give a clear picture of the present position. The data is given at the end of this report.

A few months ago we celebrated Silver Jubille conference at Bombay, which turned out to be a Golden Jubilee for the Association as 50 Life members registered during the year 1986. It has been a glorious fact that the Life membership strength which was only 11 till the year 1983 has been brought up to 85 at the end of the year 1986.

In addition to Life membership; Active membership and student membership has also been showing slow but steady growth; which needs to be enhanced further. Our esteemed members should take a note of it and try to encourage and motivate the members in arrears and old Therapists (non members) to renew their ties with the Association and join their hands in strengtnening the Association.

The capital investment which was negligible a few years ago has now grown in to a respectable sum. The details of the deposits will give an idea about the maintainance of the capital investment amount. At present Rs. 65,000/- is deposited in a money multiplier deposit with a nationalised bank. Another amount af Rs. 20,000/- is invested with Unit Trust of India scheme for Charitable Trusts. The total capital investment tunes up to Rs. 85,000/- till the year 1986. This is a record in itself and it reflects a sound and stable base for the future needs of the Association.

The enthusiastic and dedicated team of Office bearers has not only helped in collection of membership but also in collecting funds through advertisements, donations etc. These efforts have brought the yearly turn over of the Association to the tune of above Rs. 66,000/- in the year 1986 which was fluctuating between Rs. 15 to 20 thousands before 3 years. Thus the economic position of the Association has been stable in order to meet with the increasing needs in last 2-3 years.

	Up to 1983	1984	1985	1986	Total
Life Members	11	11	13	50	85
Active Members	181	266	280	255	
Student Members	–	58	70	97	

Details of Investments / Deposits :

Date	Amount	Maturity value	Mat date	No. of certificate
9-3-85	15,000/-	30,367.50	9-9-91	MMDC/D No. 114048
8-7-85	5,000/-	10,122.50	8-1-92	,, 114087
24-4-86	25,000/-	50,612·50	24-10-92	,, 301720
28-11-86	5,000/-	10,122.50	28-5-93	,, 301841
24-4-87	15,000/-	18,277.50	24-4-89	,, 653852
19-1-87	20,000/-	(180-Units) Unit Trust of India		,, 01 87 0470
Total	Rs. 85,000/-			

DR. S. L. RAI
Hon. Treasurer-A.I.O.T.A.
C/o. Paraplegia Centre,
Civil Hospital, Ahmedadad-16

ANNOUNCEMENTS

A.I.O.T.A executives are compilling Directory of Occupational Therapy.

There is a suggestion to put abridge history of origin & development of Occupational Therapy in various parts of India. To make this attempt a broad based & multifaceted executives of AIOTA has decided to call for all information pertaining to this topic by public announcement We request to all senior members from various parts of India to send their contributions to president AiOTA. Due credit will be given to contributor if their material is used. However executive committee will be final authority in selecting & changing the script of the material & they may reject any article without assigning the cause. Members are requested to support this project.

Dr. Mrs. I. R. Kenkre
Hon. Sectetary,

NEWS ABROAD :— TEACHING POSITION

HONG KONG POLYTECHNIC

Director – Dr. Johh L. Clark

The Hong Kong Polytechnic, established in 1972, is the largest institution of higher education in Hong Kong. It offers over 200 courses in a variety of subjects up to degree and post-degree level. The number of enrolled students is approximately 25,900 with a full-time equivalent population of around 12,900. The infra-structure, recently revised, consists of 7 academic Divisions containing 26 teaching departments.

The Polytechnic invites applications for the following posts tenable from september 1987 :

Department of Rehabilitation Sciences

Senior Lecturer / Lecturer in Occupational Therapy

Qualification for Appointment and Salaries

Senior Lecturer : HK$ 229, 500 - HK$ 297, 420 p.a.

Candidates should have (a) a good honours degree or professional qualification and preferably an advanced specialist qualification; (b) substantial professional experience; and (c) potential for academic leadership.

Lecturer : HK$ 123,960 - HK$ 219,360 p.a.

Candidates should have (a) a good honours degree or equivalent professional qualification and (b) at least three years' relevant postgraduate experience.

Duties :

Teach the Professional Diploma in Occupational Therapy Course and any related extension courses; contribute to the planning, implementation and revalidation of course units; and perform any relevant administrative duties as directed.

Conditions of Service :

Appointment on 2-year contract initially. Continuation thereafter is subject to mutual agreement. Benefits include a terminal gratuity of 25% of basic salary received over entire contract period, leave, subsidised accommodation for overseas appointees and local appointees on a salary of HK$ 188,940 p.a. or above, medical and dental benefits and children's education allowance. Further information forms are obtainable from the General Secretary, Hong Kong Polytechnic, Hunghom, Kowloon, Hong Kong.

P.S :— While applying please mention I.J.O.T.

EDITOR

ANNOUNCEMENT

1) Please note following change in the Bylaw No. VII Election in subclause No. 7 & No. 9 which may be read as follows. It is effective from 22-2-87

7) The nomination form shall be returned to the election committee on or before 20th August.

The election committee chairman will asceitain from the nominated candidates whether they are willing to contest the election.

9) Crossed draft Rs. 100/- a deposit in favour of Treasurer (delete secretary)

Hon. Secretary
I. R. Kenkre

ANNOUNCEMENT

We are pleased to announce that Chairperson, Silver Jubilee Organizing Committee, Prof. Mrs. M. M. Shahani has handed over a cheque of Rs. 7000/- to President, AIOTA to start biannual " Silver Jubilee Oration " during A I.O.T A. annual Conference. Executive committee in their meeting dated 22-2-87 has taken decision to invest this money in long term project & utilize the interest for the oration. Eminent persons in the field of Occupational Therapy & related field may be invited for this oration. Executive Committee will formulate the rules regarding conduction of the oration. The inaugural Silver Jubilee oration will be in 1988.

Hon. Secretary
I. R. Kenkre

हार्दिक शुभेच्छा

प्रकल्पग्रस्त युवक संघटना अलिबाग

फोन : C/o ४०४

द्वारा : अलिबाग तालुका खरेदी-विक्री संघ;
पेट्रोल पंपाशेजारी अलिबाग; जि. रायगड.

विजयकुमार आंब्रे अध्यक्ष	**अनंत नाईक** उपाध्यक्ष	**महमद हफिाज कुरेशी** कोषाध्यक्ष
मंगेश हळदवणेकर सेक्रेटरी		**प्रभाकर पाटील** सल्लागार

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