

End Polio Camp Surgery

delve deeper to make a difference!

Poliomyelitis is considered the teacher of Orthopaedics! It teaches us Orthopaedic surgeons about careful clinical examination, muscle charting, gait evaluation, soft-tissue handling, tendon transfers, bony deformity correction, Limb Lengthening and much more. Primarily, it teaches us to carefully observe and think about the patient and effects of treatment.

With the Pulse Polio program-implemented by the Govt of India and funded and supported by Rotary International-a big success, new cases of Polio are rare. However, it is a fact that we still have almost 4 million victims of the disease. With Orthopaedic surgeons no longer considering Polio as interesting, glamorous or financially rewarding, interest in tackling the disease is unfortunately taking a backseat.

However, I would like to prove that nothing could be further from the truth and that our experience over a decade in deploying the Ilizarov Techniques for Polio has yielded rich dividends-in terms of scientific advances, & benefits to patients. This White Paper is a plea to Orthopaedic Surgeons and NGO's to take stock of the situation to eradicate the after effects of Polio and decrease the suffering of the almost 4 million victims in India. The plea is for Rotary & Other NGO's to delve deeper in the problem and see the inadequacy and fallacy of promoting Post Polio care on a Camp Surgery basis. A brief study of the problem will reveal that we need to move towards the Institute based model of treating Polio for maximum efficacy and humane and scientific treatment of those suffering.

In this White Paper we will explore:

- o Primary & Secondary effects of Polio on the patients
- o Problems faced by patients after thoughtless & careless surgery
- o Current facilities available and constraints to surgeons
- o Fallacies of camp surgery and its problems
- o Model of treating Polio on a mass scale, effectively

Scale of the Problem

Conservative estimates put the incidence of Polio victims already suffering from the disease to be at least 4 million. Each of these patients has at least 2 or 3 bony deformities and limb problems, which need to be tackled. This makes at least 7 to 8 million surgeries that need to be performed!

Orthopaedic Problems in Polio victims

The polio virus affects the motor cells in the spinal cord and cause a paralysis of muscle groups in the hands or legs to a variable extent. This causes bony shortening and joint deformities, contractures & instability.

The commonest problem is Fixed Flexion Deformity in the knees. This causes inability to lock the knee in full extension, resulting in a tiring gait and frequent falls. Compensatory movements like hand-to-knee, protrusion of the buttocks, bending forwards while walking, a external rotation or internal rotation deformity creates further problems in walking.

Abduction & Flexion Contractures of the hip joint make weight bearing on the affected lower limbs very difficult. An abduction contracture in the Right hip makes it appear longer and the Left cannot reach the ground despite being equal.

In severe cases the patients are not able to walk at all.

Many crawl on their hands and knees and many scrape along the floor. Less severe cases cause a lurch in the limbs which is tiring and painful. Many fall down frequently and suffer injuries and fractures. If these fractures are not carefully set, they cause deterioration in the walking status-those walking straight would now need a hand-on-the-knee gait pattern-typically seen in Supracondylar Fractures treated by conservative methods. The lurch and instability causes excessive wear and tear of all the joints. Excess pressure on the joints of the opposite limb become predisposed them to early painful arthritis-typically by the age of 40-45 years.

Because of stunted growth, one of the legs becomes shorter and is frequently dangles. Even a 2 cm shortening causes a severe strain on the other leg which has to bear all the weight.

Problems faced by Patients after treatment

Many patients fear that they will become worse after surgery. This fear is well grounded because many unthinking surgeons make many mistakes of indication as well as performance in surgery which does indeed do more harm to these patients.

Multiple Deformities in the lower limbs present special problems: If a patient has a mild FFD Knee and an Equinus deformity in the ankle; the unwary surgeon falls prey to the insistence of the patient that the heel be made to touch the ground. Hence a TA Lengthening is done. Hereafter the knee which was stabilized by the tight heel cord will become unstable and the patient develops a hand-to-knee gait!

After limb lengthening some patients become worse--this is because not all polio limbs need to be equalized. The pelvis has to ride higher for the limb to clear the floor and this increases the energy cost of waking. They should be left short when the ankle dorsiflexors or hip flexors are poor.

oAfter Limb Lengthening, the instability of foot deformities worsens because of a mild valgus alignment in the tibia.

After Tibial lengthening instability of the frame may lead to Procurvatum deformity. This simulates a flexion deformity. Therefore patients develop a hand-to-knee gait postoperatively.

After performing a triple arthrodesis for a Calcaneus deformity, the patient is unable to walk without a stick! This is because, with a Calcaneus deformity, the patient has a lateral escape mechanism on uneven ground due to the laxity of subtalar joints. After they are fused by Triple Arthrodesis, the only escape is in dorsiflexion. This results in knee flexion, and in presence of weak knee extensors, causes falling down which is prevented by a stick!

After correction of a large flexion deformity in the knee joint-in a patient who is able to crawl around well-the knee becomes painful as well as stiff. Hence now the patient simply cannot walk at all.

After forceful correction of knee flexion contracture, there is paralysis of the medial popliteal nerve and loss of sensation in the foot. This is pure unmitigated disaster.

After Ilizarov correction of a foot deformity, the ankle becomes stiff and the patient is unable to squat down for toilet!

Current facilities available

The problem of Polio is not seen in the Western World since the last 30-40 years. Hence no research is being done in this field and no new surgeries have been designed to counter this problem. None of the advances in medicine, technology or Orthopaedics have been applied to Polio.

In India, there are very few hospitals dedicated entirely to the problem of Polio. At best there may be 2 or 3, which are dealing with this problem in a big way. Adequate facilities, infrastructure and funds are not available for treatment and for research.

Problems faced by Orthopaedic Surgeons

Orthopaedic surgeons are not interested in the treatment of Polio as it can be frustrating and financially unrewarding. Frustrating because patients expect that after surgery they will become 100% well but the reality is that there can be only a step-wise improvement. Hence to tackle Polio at an individual level can be a daunting and deterring experience.

Adequate training is not available for young surgeons to understand and tackle this disease effectively. Hence they have no interest in this most challenging of Orthopaedic subjects. Patients frequently do not understand the need for Follow-up. The effects of surgery need to be supported by carefully made Callipers and Orthoses. Patients need to be seen frequently so that their progress is observed and deterioration stopped in good time. This needs secretarial backup and adequate record keeping.

Presenting work on Polio in conferences is not rewarding as it is considered an uninteresting problem. Orthopedic surgeons are more interested in recent developments in the science like Total Joint Replacements and Intramedullary nailing and Ilizarov Techniques etc. The reality is that with some thought all of these advances can be applied to the problem of Polio with vastly satisfying results.

Problems with Camp Surgery

Camp surgery belongs to the middle of the 20th Century and not the beginning of the 21st! It was necessary in the days following independence when we did not have enough Orthopaedic surgeons. Now the number of orthopedic surgeons in the country number no less than 8-10,000. A sufficient number can be motivated to learn the tricks and tips of Polio surgery. There is no longer the need for one man to perform "heroic" feats like operate on 200 patients in one day.

Let us visit a typical day in the camp surgeries performed by a famous Orthopaedic surgeon. He is frequently hosted by local Rotary Clubs and is championed by Rotary today and lauded and decorated for his work. I have been an eyewitness to one such camp conducted in our vicinity recently.

Camp surgery frequently is a showcase of the worst aspects of Indian psyche. Organizers get a big kick out of seeing hundreds of poor and pathetic souls line up quietly, They wait for hours without food, water, space, enough air to be seen by a "Godman" surgeon for no more than 2 seconds. No detailed examination or Muscle charting or Xrays are done. He does not utter a word to them. They are then herded into crowded ward floors. Many are starving for more than 8 to 10 hours when they come up for surgery.

Patients are given hospital clothes and made to sit on the floor quietly awaiting their turn. Operated patients are rushed out-many howling in pain. On asking about painkilling medication; the organizers have no clue and the operating team declares: "it is none of our concern". In the Operating suite: 15 patients are simultaneously lined up in one large room. Each patient gets operated within about 10 to 15 seconds. What follows could be a scene from the 19th century! A small incision is taken, a bone cutting Osteotome is inserted and hammered quickly and then the bone is cut with a crunch using manual force by the surgeon. When asked, he declares "I never take Xrays--if you see them you will go mad!". When asked pertinent scientific questions by local Orthopaedic surgeons: he is unable to give any thought provoking answers and has no conclusions about the correlation of surgeries to the results. No inferences have been drawn after performing thousands and thousands

of surgeries. It seems that the surgeon is only pre-occupied in performing a quick job. There is no thinking involved. One was taught in University that a good surgeon is one whose skill resides in his brain and not his hands alone. Is this surgeon an angel or a daemon one wonders! Mechanically and compulsively performing hundreds and hundreds of "surgeries" without any thought to the consequences and results. Even the plastering is done by orderlies and technicians. Brute force is used by them to correct deformities. Finesse, quality of results and scientific thinking for improving quality of results have no role in this camp surgery setup. After surgery, patients are quickly wheeled into wards and left to their own fate. No one is there to examine them and ensure that nothing is going wrong. It has been reported from all over India that at least 4-5 patients after every camp develop gangrene and other disastrous complications. Only a small minority of patients do well. The vast majority have minimum improvement and may develop other complications. After the surgeon and his team go away, no one is there to change the plasters or take accurate fitting of the calipers. No one has any idea what is happening to the patient and no one is responsible.

To add insult to injury, these surgeries are not free! The operating team earns a cool Rs 2 lakh 50 thousand in one day. The travel and other costs of the team are also borne by the organizers. The same scene is repeated by the same team all over the country. Based on this model, Rotary clubs are encouraging other surgeons to follow the same model. Essentially Rotary & other NGO's are helping Indian Polio surgery to re-enter the dark ages!

What Polio Surgery Deserves

In the 1950's after the Polio epidemic in USA, a large number of Hospitals for Crippled children were built in most major cities. March of Dimes were undertaken to gather funds. Majority of Orthopaedic surgeons were recruited to tackle the big task. In a matter of a few years most of the surgeries were performed and the patients rehabilitated.

What we need in India today is the follows:

We need large and well equipped hospitals-ideally one in every state-specially catering to the needs of Polio patients. We have no dearth of talented & intelligent surgeons. We must have a team of no less than 10 Orthopaedic surgeons in each hospital-including the trainees. They may be working in a honorary or employed capacity. They must be given the environment and encouragement to do good and selfless work.

Polio patients must be examined by a group of Orthopedic surgeons as well as Physiotherapists. Xrays must be taken and stored carefully and also digitized for computer storage & retrieval. Video recording must be done of walking patterns of the patients-before and after surgery. Gait Analysis must be done with commercially available Gait Analysis systems-this will help in improving the documentation as well as results.

Planned surgery must be done in fully equipped Operation Theatres. Portable X-ray and C-Arm Image Intensifier units must be available to allow accurate surgery. Proper planning and analysis should be done to give best results to the individual patient and his needs.

Postoperative Care: good nursing facilities must be available. Pain relief and humane treatment is a must-regardless of poverty and social status. Physiotherapy and walking and exercises must be supervised. Plasters must be changed & Ilizarov apparatus if applied must taken care of by trained personnel.

Orthoses and Calipers must be measured and individually given and modified when need arises. Computerized records must be maintained. Follow-up notices must be given to the patients. The result will be that scientific inferences will be drawn about the best surgeries to be performed and newer, innovative and cost-effective techniques will evolve. This will reduce the burden of handicapped

on the society. If we can actually and measurably decrease the suffering of handicapped; they are likely to contribute to society and become productive.

We have to take out the uncertainty and haphazardness and introduce the element of scientific thought and bold action in Polio surgery. Orthopaedists are dynamic people who are leaders and are the first to incorporate modern and effective ideas in day-to-day life. They should not support absurd and barbaric methods of Camp surgery any more.

It is time for us to act with conviction and vision for a better future of the Polio victims.

Work done by Center for Ilizarov Techniques, Akola

Over the last decade, Dr. Milind Chaudhary and his team at the Center for Ilizarov Techniques, AKOLA; has been working on the problem of Poliomyelitis quietly and effectively. More than 600 operations have been done in a careful and scientific manner. Meticulous records have been kept. New Operations have been designed and performed at our hospital:

Ilizarov Supracondylar Osteotomy for correction of the hand-to-knee-gait;

Ilizarov Recurvatum Deformity with simultaneous Femoral & Tibial correction

Ilizarov Recurvatum Tibial Osteotomy and

Lengthening Over Nails-with special emphasis on smaller nails for Polio patients. This decreases duration of treatment and margin of error while performing lengthening.

We have made maximum use of the Ilizarov Techniques to solve all the problems in Polio. Since the last 5 years, in collaboration with other charitable organizations, the Dr., R. N. Chaudhary Trust-a public charitable trust active since 1981-humane and scientific treatment is being given to Polio patients and continuously developed for more efficacy. Patients are given a date for surgery. Patients are admitted for as long as needed. The best equipment is used in the OT to ensure proper results. Diligent and persistent Follow-up care is given by Doctors and trained staff. They are treated with the due respect that is accorded to private patients.

Lessons have been learned about improving results in Polio and diligently implemented. Teaching and dissemination of knowledge is given a high priority. Almost 20 young Orthopaedic surgeons have been taught in 6 month fellowships all the tips & tricks of the Ilizarov Technique & Polio surgery.