IJPMR 2007 April; 18 (1): 21-23

Polio Rehabilitative Surgery Camps

Dr Rahul Khare, MBBS, MS (Ortho), Associate Professor,
Department of Orthopaedic Surgery, Era's Lucknow Medical College, Lucknow

Dr AK Agarwal, MBBS, MS (Ortho), FICS,MAMS,FIMSA, Professor,
Dept of Physical Medicine and Rehabilitation
King George's Medical University, Lucknow

Dr Ratnesh Kumar, MBBS, MS (Ortho), DNB (PMR), Director
National Institute for the Orthopaedically Handicapped, Kolkata

Abstract

Twenty two surgical polio camps were organized in 8 districts of Uttar Pradesh and Madhya Pradesh from January 2000 to May 2006. Over 8000 children were screened, and three groups were made for physiotherapy, calipers and those who needed surgical correction for their deformities. 3370 patients were advised physiotherapy, 2920 were given calipers while 1250 patients were operated. By and large bony operations were avoided. 96 % of cases had full correction of deformities and only 4 % of cases needed further physiotherapy before fitting of orthoses. Such rehabilitative surgical polio camps offer a ray of hope for these illiterate, ignorant and unfortunate patients to lead an independent respectable life.

Key words : **Poliomyelitis Rehabilitative Surgery Camps**

Introduction

Poliomyelitis was recognized as a clinical entity in first half of nineteenth century. Three serological types of the virus are known: Brunhilde , Leon and Lensing. Virus enters the human body by oropharynx, affects anterior horn cells of the spinal cord leading to asymmetrical lower motor neuron paralysis without sensory loss. It is still prevalent in several parts of our country especially the states of Uttar Pradesh and Bihar. The intense Pulse Polio vaccination drive will reduce the incidence of polio however thousands of children with post polio residual paralysis still need treatment. With this paper, we wish to bring forth the factual information that may be needed by those involved in the care of patients suffering from poliomyelitis and involved in camp approach for the management. We hope that this information would help the organizers of the camp to ascertain facilities required.

Materials and Methods

Twenty two surgical polio camps were organized in eight districts of Uttar Pradesh and Madhya Pradesh in co-operation with Rotary Club International and National Institute of Orthopaedically Handicapped, Kolkata from January 2000 to May 2006. These camps were conducted in 3 phases.

In phase one camp patients were screened for surgery, orthoses and physiotherapy. Pre operative assessment and investigations of patients selected for surgery were done which included routine blood tests, urine examination and cardio respiratory assessment by a physician. Cases like CP, myopathy, nerve injury, CTEV, CDH, vertical talus, etc were not included. Case record was made and a clinical pre-operative photograph was taken for each of the selected case.

Those patients selected for surgery were operated under general anesthesia in phase two camps. Only soft tissue releases were done, followed by Plaster of Paris casts with or without traction to maintain the correction.

The common surgeries performed were Soutter's hip release operation for the hip flexion abduction and external rotation deformity, Yount's release for flexion deformity of knee and TA lengthening for equinus at ankle. Sartorius, iliotibial band, rectus femoris and sometimes anterior capsule of the hip joint were cut for the correction of hip deformity. A section of iliotibial band and lateral intermuscular septum were resected about 2.5cm above the superior pole of patella in Yount's release. TA lengthening was done either by open Z-plasty technique, subcutaneous method or by V-Y plasty. Bony surgeries were avoided. Post operative care was assured by taking twice a day rounds looking for vital signs, neuro-vascular signs, complications of plaster of paris (POP), abnormal pain, fever, soakage etc. Stitches were removed after 14 days, dressing was done and plaster repaired. Traction was continued were required. Patients were discharged after suture removal and were called for follow up after

Address for correspondence: Dr Rahul Khare, H-93, South City Rae Bareilly Road, Lucknow Email: drrahulkhare@indiatimes.com

six weeks of the date of surgery in the Phase 3 camps. POP was removed after 6 weeks of surgery. Appropriate physiotherapy was advised in each case. Correction of deformity was reassessed. Trial of fitting of caliper was done. Standing alignment was checked and gait training in parallel bar started. Post orthosis photograph was taken in each case. Each patient was trained for the use of caliper and maintenance of caliper, motivated to perform physiotherapy regularly everyday and to go to school. Counseling of the parents, guardians or care providers was also undertaken.

Further follow up was done at one monthly interval for first six months and then on yearly basis.

Results

Over 8000 children were screened, out of which 3370 patients were advised physiotherapy, and 2920 were given calipers while 1250 patients were operated. Majority of the cases were in the age group of 11 – 15 years as shown in Table No. 1 below.

Table 1. Table showing age and sex.

S.No.	*Age (yrs)*	*Males*	*Females*	*Total*
1	0 – 5	50	32	82
2	6 – 10	243	185	428
3	11 – 15	301	238	539
4	16 – 20	131	70	201
	TOTAL	**725**	**525**	**1250**

Common hip deformities were flexion, abduction and external rotation either singly or in combination. Soutter's hip release was done for the hip deformity. Flexion deformity at knee was corrected by tenotomies and Yount's operation, Equinus at ankle was corrected by TA lengthening – open or percutaneous and pes cavus at foot by Steindler's release. Spinal deformity cases were not operated upon in the camps. By and large bony operations were avoided. Hip and knee together was the commonest site for surgery as shown in Table 2 below.

Table 2. Table showing the site of operation and age

S.No	*Age (yrs)*	*Hip, Knee, Ankle*	*Hip, Knee*	*Knee, Ankle*	*Ankle*	*Hip*	*Knee*	*Total*
1	0 – 5	15	13	13	14	13	14	82
2	6 – 10	82	118	52	70	56	50	428
3	11 – 15	98	145	69	91	75	61	539
4	16 - 20	33	37	33	38	28	32	201
	TOTAL	**228**	**313**	**167**	**213**	**172**	**157**	**1250**

Hip knee ankle foot orthosis (HKAFO) was given to 713 operated children in Phase 3 camps whereas 324 KAFOs and 213 AFOs were given.(Table 3)

Table 3. Table showing type of orthosis and age

S.No	*Age (yrs)*	*HKAFO*	*KAFO*	*AFO*	*Total*
1	0 - 5	41	27	14	82
2	6 – 10	256	102	70	428
3	11 – 15	318	130	91	539
4	16 - 20	98	65	38	201
	TOTAL	**713**	**324**	**213**	**1250**

96 % of cases had full correction of deformities and only 4 % of cases needed further physiotherapy before fitting of orthoses. 190 patients have been followed up for the last four years and the remaining patients have a variable follow up of 2-3 years. 164 patients have been lost to follow up.

Fig. 1 Patient with severe deformities

Fig. 2 Patient before surgery (left) and after surgery with caliper (right)

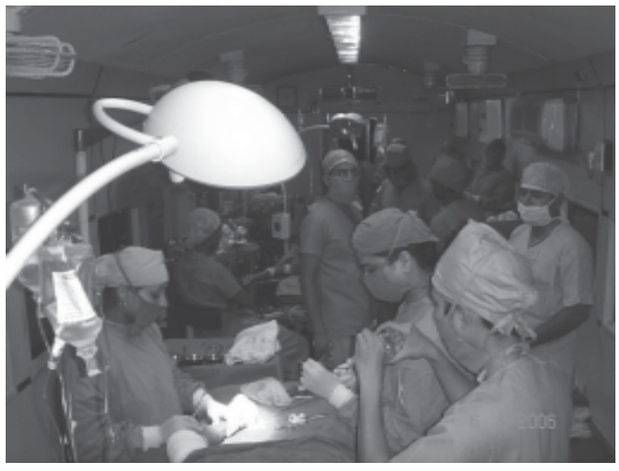

Fig. 3 Surgery in progress in the lifeline express

Fig. 4 Lifeline Express with the surgical team

Discussion

The children affected by poliomyelitis were mostly from the rural areas of our country. They did not come to the cities for treatment because of ignorance, poverty and illiteracy. We decided to go to them in the rural areas and organized the camps near their villages. Making the surgical camps absolutely free of cost (stay in hospital, surgery, medicines, plaster, food, calipers etc) took care of the poverty factor. Aims of surgery in residual stage of poliomyelitis were to correct the deformity, improve function, correct inequality of limb length, restore muscular balance and to facilitate fitting of a caliper.

Proper selection of cases is a very important aspect in camp surgery. Only cases whose deformities are possible to be corrected fully by soft tissues releases and traction were selected. Bony procedures were avoided in the camps. Patients needing bony procedures like osteotomies and arthrodeses, limb lengthening procedures or tendon transfers were advised to come to our hospital in Lucknow where again they were given free treatment as in the camps.

Well equipped operation theatre with proper sterilization facilities was selected. Several sets of instruments, linen, disposables in huge quantities, drugs, sutures etc were arranged. Local anaesthesiologists, physicians and orthopaedic surgeons of that particular area were involved whenever possible as follow up of the patients was better with them.

Patients were discharged after suture removal and were called for follow up after six weeks of the date of surgery in the Phase 3 camps. POP was removed after 6 weeks of surgery. Physiotherapy was advised in each case. Correction of deformity was reassessed. Trial of fitting of caliper was done. Standing alignment was checked and gait training in parallel bar started. Post orthosis photograph was taken in each case. Each case was trained in use of caliper and maintenance of caliper, motivated to perform physiotherapy regularly everyday, and to go to school. Counseling of the parents, guardians or care providers was also undertaken.

Conclusion

Boys predominated in number. Maximum cases were between 6-15 years age group. Maximum surgery was performed on combined deformity of hip and knee followed by hip-knee-ankle and ankle only. Majority of cases required HKAFO followed by KAFO and AFO.

Despite organizing such extensive camps with involvement of social organizations for the past 6 years in 8 districts of Uttar Pradesh and Madhya Pradesh, there are still hundreds of polio-affected children in need of surgical correction of their deformities so as to stand on their own feet. Such rehabilitative surgical polio camps offer a ray of hope for these illiterate, ignorant, unfortunate patients to lead an independent respectable life. Free polio corrective surgery camp in rural areas provides surgery and caliper fitting to hundreds of poor and needy polio affected children belonging to low socio-economic strata of the society at their doorstep by way of reaching un-reached.

It also provides a fresh ray of hope in these physically challenged people from rural India to make them confident, independent, upright and mobile on their feet once again.

Acknowledgment

We are thankful to Rotary International for providing us the opportunity to serve the physically challenged persons.