

Profile of Reconstructive Surgery Cases in Leprosy in Central UP - India: Experience of PPP Model

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Abstract

109 cases of leprosy were identified in the camps using private public partnership (PPP) between non-governmental and governmental organizations. The patients were admitted and operated free in the Department of Physical Medicine and Rehabilitation and Plastic Surgery, Chhatrapati Shahuji Maharaj Medical University, Lucknow during 2007-08. 75.2% were males and 24.8% females. Maximum cases (81.7%) were between 11 to 40 years. Overall illiteracy was 68.8%. 89.9% were having hand lesions with equal distribution in either hands in 32 cases each. Clawing of both hands was observed in 28 cases. Foot lesions were seen in 18 cases out of which nine cases each were of foot drop and plantar ulcer. In 84 cases (77.1%) Dermolipectomy with or without Zancolli procedure was performed. Tibialis Posterior transfer was done in nine cases of foot drop. The nine cases of plantar ulcer were treated by proper local dressing followed by below knee Plaster of Paris cast with walking iron (weight relieving) followed by PTB calliper with MCR padded open shoes. PPP helped

identify more patients and get help to avail free treatment including surgery done at the government hospital including travel and food expenses paid by the non-governmental organization.

Keywords: Leprosy, Reconstructive surgery.

Introduction

With the introduction of multi-drug therapy (MDT) in 1982, followed by progressive implementation of short, fixed duration drug therapy gradually reduced the number of leprosy cases registered for treatment. However, it is estimated that out of nearly 500,000 existing leprosy cases, nearly 100,000 (20%) are in need of reconstructive surgery, some of them may require more than one surgery. The disability rate in one study was 16.23%¹. In another study of 514 leprosy cases 229 (44.56%) had disability. Disability was most commonly seen in lepromatous leprosy. There was an increasing trend in disability with increasing age of patient and duration of disease. Disability rate was higher in males as compared to females².

There are a large number of leprosy cured patients in the rural areas who require reconstructive surgery to minimize the impact of deformity leading to reduced social stigma and rehabilitation. Reconstructive surgery has been done in camps successfully in various parts of the country. The reconstructive surgery also helps in functional improvement which is necessary for their activities of daily life. Due to many unavoidable reasons like poverty, illiteracy lack of awareness regarding reconstructive surgery, lack of transportation and lack of basic facilities even in Medical Colleges/District Hospitals, a majority of leprosy cases do not come forward voluntarily for reconstructive surgery even if it is provided to them free of cost.

An experiment of private public partnership (PPP) between Rotary International (RI), UP State Government and Chhatrapati Shahuji Maharaj Medical University (CSMMU), Lucknow was initiated. Experience from this approach are presented here on the work undertaken during 2007-2008.

Material and Methods

All three stake holders of PPP were invited to participate in a meeting which included representatives of Rotary

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Bibliography

Kumar V, Agarwal AK, Singh AK. Profile of Reconstructive Surgery Cases in Leprosy in Central UP - India: Experience of PPP Model. IJPMR 2010; 21 (2): 37-39.

Article received

First: December 29, 2009

Revised: February 26, 2010

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International, State and District Leprosy Officers and consultants from two departments of CSMMU (Physical Medicine and Rehabilitation and Plastic Surgery). The meeting was aimed at finding out the means to mobilise the leprosy cured cases for reconstructive surgery at CSMMU. It was decided to have a camp approach in four stages.

Stage I. Capacity building by training of doctors and field workers engaged in National Leprosy Education Programme (NLEP) in three districts namely Lucknow, Barabanki and Hardoi, in UP, India. Lectures and case demonstrations of six hours each was done.

Stage II - The team of experts from CSMMU, District Leprosy Officer and member of Rotary international visited the rural areas for identification and selections of cases that required reconstructive surgery at different PHC/District Hospitals on specified dates and time.

Stage III- Preoperative physiotherapy and exercises were given to the patients for two weeks before undertaking hand and foot surgery. Admission of such cases in Department of Physical and Medicine Rehabilitation (PMR) was done followed by reconstructive surgery in Department of Plastic Surgery, CSMMU on a prefixed date.

Stage IV Immediate follow up of all operated cases, including proper supervised post-operative physiotherapy.

All the patients requiring reconstructive surgery along with one attendant were given free transportation from and to their home district to Lucknow. The patients were not charged the costs for admission, food, surgery, surgical supplies and medicines. Even for followup, the patients were reimbursed the transportation costs by Rotary International (RI). Average total cost of reconstructive surgery for each patient was approximately Rs.6500/-.

Fifteen rural leprosy camps were conducted in different PHCs and District Hospitals of Lucknow, Barabanki and Hardoi, with the help of health personnel. Nearly 250 leprosy cured cases were screened by the team of experts from the Departments of PMR and Plastic Surgery, CSMMU. Out of which 116 cases were found suitable for reconstructive surgery and all cases were called for admission in batches of 15 to 20 cases. Finally 109 cases were admitted in PMR, CSMMU. All admitted cases were subjected to routine hematological investigation i.e. hemoglobin, total and differential leucocyte counts, bleeding time, coagulation time, blood sugar, Australia antigen, HIV tests and routine urine examination. The cases having local infection, abscess and upper respiratory tract infection, were excluded at the time of screening.

Criteria for patients selected for reconstructive surgery were as follows:

1. Course of MDT completed.
2. Flexible deformity.
3. No local infection.
4. Willing and motivated for reconstructive surgery.
5. Prefererably younger age group.

Observations and Discussion

Out of 109 cases admitted, males (75.2%) outnumbered females (24.7%). Maximum cases were in their 3rd and 4th decade of life (Table 1), that is the age of maximum productivity. Hence, it is important to do screening to pick out cases for surgery and making them more able to earn their living.

Level of literacy in relation to gender was also studied. 75 cases (68.9%) were illiterate followed by 26 cases (23.8%) who had studied up to class 8th class. Out of 27 female cases, 23 were illiterate (85.5%) whereas out of 82 males, 52 were illiterate (63.4%) (Table 2).

Still illiteracy is a major constraint among people of rural area which is solely responsible for lack of awareness regarding benefit of health related programmes.

A majority of cases came from Hardoi district followed by cases from Barabanki and Lucknow (Table 3). This can be explained due to the simple fact that cooperation, motivation and sincerity of the leprosy staff involved in NLEP and also the leadership quality of District Leprosy Officer, Hardoi. It is quite surprising to note that a very small number of leprosy cases (16 out of 109 cases) came for reconstructive surgery from Lucknow, the capital of Uttar Pradesh. It may be noted that the prevalence of Leprosy affected patients in each area was not taken into account.

The study of incidence of occupation versus education and gender showed that out of 27 females 21 were housewives. Nearly half the males were working as farmers (Table 4). Six were students out of 20 cases below 20 years. This again shows that a lot needs to be done to improve "education for all" programme.

Hand lesions were found in 98 cases (89.9%). Clawing of one hand was seen in 32 cases, whereas bilateral claw hand deformity was found in 28 out of which 22 were males and six females (Table 5).

Foot lesions were found in 18 cases, out of which nine each had foot drop and plantar ulcer (Table 6).

Various techniques of reconstructive surgery were done in 100 cases of leprosy. Nine cases of plantar ulcer were treated by closed plaster technique. The types of reconstructive surgeries done are listed in Table 7.

Age	M	F	Total
0-10	1	0	1
11-20	13	06	19
21-30	22	10	32
31-40	29	09	38
41-50	16	1	17
51-60	1	1	2
Total	82	27	109

Table 1. Age and sex distribution.

Literacy	M	F	Total
Nil	52	23	75
Up to 8th	22	4	26
9th -12t	5	0	5
Above 12th	3	0	3
Total	82	27	109

Table 2. Literacy and sex distribution.

District	M	F	Total
Barabanki	19	5	24
Lucknow	12	04	16
Hardoi	51	18	69
Total	82	27	109

Table 3. Geographical distribution by sex.

Occupation	Sex		Education (Standard)			
	M	F	Nil	< 9	9-12	> 12
Housewife	0	21	18	3	0	0
Student	6	-	01	4	0	1
Farmer	40	0	30	10	0	0
Service	14	0	05	4	4	1
Non working	22	6	21	5	1	1
Total	82	27	75	26	5	3

Table 4. Sex wise education and occupation

Hand Lesion	M	F
None	10	1
Right Claw	25	7
Left Claw	21	11
Nerve	1	01
Bil. Claw	22	6
Nerve + Claw	3	1
Total	82	27

Table 5. Types of hand lesion.

Foot	M	F
Normal	64	27
Foot Drop	09	0
Plantar Ulcer	09	0
Total	82	27

Table 6. Types of foot lesion.

Technique of Surgery	M	F	Total
Dermolipectomy	50	16	66
Zancolli Lasso	10	08	18
Tendon Transfer for hand	01	01	02
Tendon Transfer for foot	09	00	09
Contracture Release	01	01	02
Tarsorrhaphy	01	00	01
Opponensplasty	00	01	01
Neurolysis	01	00	01
Total	73	27	100

Table 7. Types of surgeries done.

In a majority of cases dermolipectomy with or without Zancolli technique was performed which gave static correction. Foot drop was successfully corrected by tibialis posterior transfer and results were satisfactory. Proper post operative care was provided to each case in the indoor ward. The patients were discharged after seven days of surgery and were admitted again after 3-4 weeks for removal of stitches and for physiotherapy. Post reconstructive surgery cases were given exercises in groups and individually for another four weeks. The final outcome was reviewed in the follow-up camps at the primary health centres or district hospitals.

Conclusion

PPP model worked successfully in the rural areas for patients with leprosy to avail advantage of free expertise at their doorstep. Confidence gained in the rural population helped sensitize more to come forward to get reconstructive surgery done at a specialized centre. This initiative of private public partnership where a tertiary health care service provider (CSMMU) provided their infrastructure, time, manpower and skill; with financial support from a non-governmental organisation (Rotary International) and field support from the state government (UP). Individually, for any one of the organizations it would not have been possible to have the patients be sensitized, be able to afford the treatment or be operated at the peripheral health facility without the expertise. To help more leprosy cured persons, such kind of partnership approach should be encouraged.

Acknowledgements

1. Rotary Club, Lucknow: For funding transport, food, medicines, cost of surgery and post operative treatment.
2. State Government UP: For field support.

References

1. Reddy BN, Bansal RD. An epidemiological study of leprosy disability in a leprosy endemic rural population of Pondicherry (south India). Indian J Lepr. 1984; 56 (2): 191-9.
2. Girdhar M, Arora SK, Mohan L, Mukhija RD. Pattern of leprosy disabilities in Gorakhpur (Uttar Pradesh). Indian J Lepr. 1989; 61 (4): 503-13.