FEASIBILITY OF RECONSTRUCTIVE SURGERY UNDER GENERAL HEALTH CARE AND ITS IMPACT IN ODISHA, INDIA

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INTRODUCTION:

• Reconstructive surgery (RCS) is the main component of Disability Prevention and Medical Rehabilitation (DPMR).

• As per DPMR guidelines, only Medical colleges and certain tertiary care centers undertake RCS.

• The distance of these institutions greatly limits the accessibility for the patients.

• During 2004-07, LEPRA India initiated RCS in the General Health system by hiring visiting surgeons.
OBJECTIVE:

Evaluation of results of RCS in Leprosy done in Government Secondary (District) and Tertiary hospitals under the DPMR programme.
METHODOLOGY

• Selection of RCS centres:
  ✓ limitations in tertiary centres;
  ✓ centres selected for easy approach;
  ✓ selected on the basis of disability burden,
  ✓ located at different zones of the state,
  ✓ a cluster of districts benefited.
METHODOLOGY (contd.)

• Equipping the centre for RCS:
  ✓ RCS was not in practice in GHS,
  ✓ OTs were provided with OT table, light, AC, specific instruments/equipments for RCS,
  ✓ Some consumables.
METHODOLOGY (contd.)

• Training the Surgeons & Nurses:

✓ State Govt. selected interested Plastic, Ortho, General surgeons & concerned OT nurses for the training;

✓ So far we have trained 14 surgeons;

✓ Hands-on-training by renowned RCS surgeons of the country at model institutions and exposure visit to SIHR&LC, Karigiri.

✓ Sponsored them to conferences.
METHODOLOGY (contd.)

• Mobilisation for RCS:
  ✓ Affected persons at villages are motivated by ASHA & HWs and referred to PHC DPMR clinics,
  ✓ Fit & willing patients are selected at PHC DPMR clinics & referred to DNTs/RCs,
  ✓ After assessment & recording at DNT/RC they are referred to the RCS centres for final selection by the surgeon & PT.
  ✓ Wage loss compensated by Govt.
METHODOLOGY (contd.)

• Pre physio – RCS – post physio – follow up:
  ✓ Mobile deformities,
  ✓ Hygiene of the part & infection free,
  ✓ Restoration of mobility,
  ✓ Donor muscle isolation,
  ✓ Counseling, motivation & training for use of new muscle,
  ✓ Hospitalisation for about 2 months,
  ✓ Follow up at 1\textsuperscript{st}, 3\textsuperscript{rd}, 6\textsuperscript{th}, 12\textsuperscript{th} months & then every year for 3 years.
Type of surgery performed:

- Claw Correction:
  - Zancollis Lasso using Sublimus, ECRL, Palmaris longus or Fascia lata as per requirement,
  - Brand’s Procedure – inserting to lateral bend,

- Thumb Correction:
  - Ring/Middle finger sublimus opposition,

- Foot-Drop Correction:
  - Tibialis posterior to tail transfer (Peroneous longus rare),

- Lagophthalmos:
  - Johnson’s method – graft Palm. Longus/Fascia lata
  - Gilles’ method – Temporalis fascia
• Outcome measures assessed:

A. CLAW FINGERS

Open hand position:

Good - MP: 10(HE) to 30(F), PIP: 0 to 20(F),
Fair – MP: 10-20(HE) to 30-50(F), PIP: 20 to 30(F),
Poor – MP: > 50(F), PIP: > 30.

Lumbrical position:

Good – PIP: 0 to 30
Fair – PIP: 31 to 60
Poor – PIP: > 60

Fist:

Good: Finger tip touches distal palmar crease,
Fair: Finger tip touches palm,
Poor: Unable to touch the palm.
B. THUMB

Abduction

Good - > 45°,
Fair - 35-45°,
Poor - < 35°,

Pinch

Good - Pulp to pulp,
Fair - Pulp to side,
Poor - Unable to do pinch.
C. FOOT

System 1:

- **Good** - Active dorsi-flexion beyond neutral,
- **Fair** - Active dorsi-flexion to neutral,
- **Poor** - Unable to do active dorsiflexion to neutral,

System 2:

Walking pattern –

- **Good**: Heel to toe gait,
- **Fair**: Flat gait,
- **Poor**: High stepping gait
• EYE

**Good:** Complete eye lid closure without biting;

**Fair:** Incomplete eye lid closure (up to 3 mm) with moderate effort of biting;

**Poor:** Incomplete eye lid closure (more than 3 mm) with moderate while biting;
STUDY SUBJECTS

Total persons undergone RCS - 1307
  Male – 980, Female - 327

Total Persons followed up - 285
  Male - 222, Female - 63
  MB - 230, PB - 55

No. of surgeries: 314 (24%)
  Hand - 180 (57.3%)
  Foot - 116 (37.0%)
  Eye - 18 (5.7%)
### Patient Profile:

<table>
<thead>
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<th>Organ</th>
<th>Total</th>
<th>&lt; 14 yrs</th>
<th>15 – 25 yrs</th>
<th>26 – 50 yrs</th>
<th>51 + yrs</th>
<th>Gender</th>
<th>M</th>
<th>F</th>
<th>Type</th>
<th>MB</th>
<th>PB</th>
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<tbody>
<tr>
<td>Hand</td>
<td>180</td>
<td>1</td>
<td>58</td>
<td>112</td>
<td>9</td>
<td>129</td>
<td>46</td>
<td></td>
<td>134</td>
<td>28</td>
<td></td>
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<tr>
<td>Foot</td>
<td>116</td>
<td>0</td>
<td>20</td>
<td>85</td>
<td>11</td>
<td>100</td>
<td>20</td>
<td></td>
<td>91</td>
<td>21</td>
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<tr>
<td>Eye</td>
<td>18</td>
<td>0</td>
<td>4</td>
<td>13</td>
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<td>243</td>
<td>71</td>
<td></td>
<td>239</td>
<td>55</td>
<td></td>
</tr>
</tbody>
</table>

- 93% of the beneficiaries belong to productive age group;
- 23% were women, 76% MB type and 57% Hand cases.
Results of Assessments:

HAND

- Good: 132 (73.3%)
- Fair: 29 (16.1%)
- Poor: 19 (10.6%)
- Total: 180 (100%)

161 (89.4%) persons showed improvement in their functional ability and their livelihood & living status. 19 persons (10.6%) did not show any improvement or marginal improvement.
Results of Assessments:

**FOOT**

- Good - 103 (88.8%)
- Fair - 10 (8.6%)
- Poor - 03 (2.6%)
- Total - 116 (100%)

In 113 (97.4%) persons normal walking pattern restored. Three (2.6%) persons did not show any improvement or marginal improvement.
Results of Assessments:

**EYE**

Good - 14 (77.8%)
Fair - 3 (16.7%)
Poor - 01 (5.6%)
Total - 18 (100%)

17 (94.4%) persons showed improvement in closure of their eyes and satisfied except one person.
Results of Assessments:

TOTAL OPERATIONS

- Good - 249 (79.3%)
- Fair - 42 (13.4%)
- Poor - 23 (7.3%)
- Total - 314 (100%)

While considering all the interventions, 92.7% of the beneficiaries showed restoration of their functions which helped them in earning their livelihood.
Overall observation:

- Overall ‘good’ result is 79.3% and ‘foot’ contributed 88.8%;
- Together with ‘good’ & ‘fair’ the result is 92.7%, of which ‘foot’ alone is 97.4%;
- ‘Hand’ shows 10.6% ‘poor’ result - this is 7.3% of total.

Factor for unsatisfactory result:

- Sometimes poor selection of case;
- Inadequate compliance by the beneficiaries to instructions & irregularity in follow up,
- Improvement could have been better with more intensive counseling.
- Poverty is also a factor for unsatisfactory result.
Client Satisfaction:

285 beneficiaries expressed their perceptions on the level of their satisfaction, which is analysed as below:

- **Excellent** - 145 (50.8%)
- **Good** - 85 (29.8%)
- **Fair** - 29 (10.2%)
- **Poor** - 26 (9.2%)
Client Satisfaction

- Excellent: 50.80%
- Good: 29.80%
- Fair: 10.20%
- Poor: 9.20%
Conclusion:

- RCS is feasible in secondary care centres with training and logistic support.
- Mindset of GHS staff need to improve to accept RCS.
- Such centers are more accessible.
- ‘Good’ results in RCS can be assured by
  - proper selection of beneficiary,
  - pre-operative preparations,
  - meticulous post-operative management and
  - ensuring regular follow up.
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