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Review Article

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ANAESTHETIC AND SURGICAL MANAGEMENT OF LEPROSY PATIENTS UNDERGOING RECONSTRUCTIVE HAND SURGERY: A CASE SERIES WITH LITERATURE REVIEW

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ABSTRACT

Reconstructive hand surgeries are vital in restoring functionality and appearance in leprosy patients who suffer from nerve damage-induced deformities such as claw hand. These procedures not only improve manual dexterity but also reduce stigma and dependency. This case series describes five cases of leprosy patients undergoing various hand reconstructive procedures under different anaesthetic techniques. We discuss preoperative challenges, intraoperative considerations, and postoperative care in the context of current literature.

INTRODUCTION

Leprosy causes nerve damage leading to motor, sensory, and autonomic dysfunction. One of the most debilitating outcomes is claw hand, typically from ulnar and median nerve palsy. Reconstructive surgery, particularly tendon transfer procedures, aims to restore hand function. Anaesthetic considerations include autonomic neuropathy, sensory loss, and chronic ulcers.

Reconstructive hand surgery is not only functionally important but also psychosocially rehabilitative. Several techniques have been developed including Zancolli lasso procedure, Brand's transfer, and Modified Bunnell techniques.[1][2]

Case 1: Bilateral Claw Hand – Zancolli Lasso Procedure

Patient: 38-year-old male, borderline tuberculoid leprosy.

Deformity: Bilateral clawing of the 4th and 5th digits.

Surgery: Flexor digitorum superficialis (FDS) to lateral band transfer using Zancolli technique.

Anaesthesia: Brachial plexus block (supraclavicular).

Post-op: Hand splint applied; physiotherapy initiated on day 3.

Outcome: Full correction at 6 months.

Case 2: Median Nerve Palsy – Opponensplasty

Patient: 41-year-old female with isolated median nerve palsy.

Surgery: Camitz transfer (palmaris longus to abductor pollicis brevis).

Anaesthesia: Axillary block with midazolam sedation[3][4]

Intra-op: Well-tolerated; meticulous dissection of scarred tissue.

Case 3: Combined Ulnar and Median Palsy – Brand's Transfer

Patient: 52-year-old male, lepromatous leprosy.

Surgery: Transfer of ECRL tendon to FDP and intrinsic substitution.

Anaesthesia: Supraclavicular block with blind technique

Challenges: Dry skin, thickened nerves, altered pain perception.

Case 4: Claw Hand with Chronic Ulcers

Patient: 44-year-old female with plantar and palmar ulceration.

Surgery: Modified Bunnell technique + ulcer debridement.

Anaesthesia: Axillary block.

Special Considerations: Use of pressure-relieving mattress; pre-op wound control with antibiotics.

Post-op: Ulcers managed with VAC therapy.[5]

DISCUSSION

Anaesthetic Choice: Regional blocks preferred to minimize systemic complications and allow intra-op neurovascular monitoring.

Surgical Principles: Correction focuses on restoring finger extension and thumb opposition using tendon transfers.

Rehabilitation: Vital for function recovery; includes splinting, physiotherapy, and ulcer care.

Challenges: Scar tissue, delayed presentation, poor compliance, and stigma.

CONCLUSION

Reconstructive hand surgery significantly restores functionality in leprosy patients. A multidisciplinary approach involving anaesthetists, surgeons, physiotherapists, and wound care teams is essential.[6] Regional anaesthesia is effective and safe in most cases, but general anaesthesia may be required depending on patient condition and procedure complexity.

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