

“Surgical Management of Paediatric Microstomia: A Report of three cases with Y-V Plasty Reconstruction”

Dr. Puneet Srivastava¹, Dr. Richa Jaiman², Dr. Renu Singh³

¹Professor, Department of General Surgery, Sarojini Naidu Medical College, Agra, Uttar Pradesh, India

² Professor, Department of General Surgery, Sarojini Naidu Medical College, Agra, Uttar Pradesh, India

³ Post Graduate student, Department of General Surgery, Sarojini Naidu Medical College, Agra, Uttar Pradesh, India

***Corresponding Author:**

Dr. Renu Singh,

Post Graduate student, Department of General Surgery, Sarojini Naidu Medical College, Agra, Uttar Pradesh, India

Cite this paper as: Dr. Puneet Srivastava, Dr. Richa Jaiman, Dr. Renu Singh (2025) “Surgical Management of Paediatric Microstomia: A Report of three cases with Y-V Plasty Reconstruction”. Journal of Neonatal Surgery, 14, (6s) 940-943

ABSTRACT

Background: Microstomia is a debilitating condition characterized by reduced oral aperture, leading to functional impairment in feeding, speech, oral hygiene, and airway access. In children, it may be congenital or acquired, commonly following burn injuries. Early surgical intervention is essential to restore function and prevent long-term morbidity. ¹

Objective: To evaluate the functional and cosmetic outcomes of Y–V plasty–based reconstruction in paediatric patients with microstomia of varying aetiologies.

Materials and Methods: We present a case series of three paediatric patients with microstomia—two congenital and one post-burn—managed surgically using Y–V plasty, with adjunctive procedures where required.

Results: All patients demonstrated significant improvement in mouth opening and feeding ability postoperatively. Wound healing was satisfactory, with good cosmetic outcomes and no early recurrence. In the post-burn case, additional contracture release and skin grafting resulted in stable oral aperture with good graft uptake.

Conclusion: Y–V plasty is a reliable and effective surgical technique for the management of paediatric microstomia. When performed early with meticulous technique and appropriate postoperative care, it provides excellent functional and aesthetic outcomes with a low risk of recurrence. ²

1. INTRODUCTION

Microstomia is defined as a reduction in oral aperture that can significantly impair feeding, speech, oral hygiene, and airway management. In the paediatric population, microstomia may be congenital or acquired, most commonly secondary to burns or trauma. ³ Persistent restriction of mouth opening can adversely affect nutrition, growth, dental development, and psychosocial well-being. ⁴

Surgical correction aims to restore an adequate oral opening while preventing recurrence and maintaining acceptable cosmetic outcomes. Y–V plasty is a commonly employed reconstructive technique for commissural release, offering the advantages of simplicity, preservation of vascularity, and favourable functional and aesthetic results. ⁵ We report three paediatric cases of microstomia successfully managed using Y–V plasty–based reconstruction.

2. CASE REPORTS

Case 1

Patient Profile:

A 4-month-old male infant presented with a progressively decreasing mouth opening and difficulty in feeding for one month.

Clinical Findings:

Examination revealed a reduced oral aperture consistent with microstomia. No associated syndromic features or congenital anomalies were identified.

Management:

The patient underwent Y-V plasty at the oral commissure to release the constricting tissues and improve mouth opening.

Outcome:

Postoperatively, there was a marked improvement in oral aperture and feeding ability. Wound healing was satisfactory, with good functional and cosmetic results. No early recurrence was noted on follow-up.



Figure1. preop photograph of microstomia in a 4-month child



Figure 2. post op photograph of 4 month child with microstomia managed with Y-V plasty

Case 2

Patient Profile:

A 1-year-old female child presented with microstomia secondary to post-scald burn scar contracture, associated with difficulty in feeding and restricted oral access.

Clinical Findings:

The child had severe scar contracture involving the oral commissure and philtral region.

Management:

Surgical management included Y-V plasty for commissure release along with contracture release over the philtrum. The resultant raw area was covered with partial-thickness skin grafting.

Outcome:

Adequate mouth opening was achieved intraoperatively. The postoperative period was uneventful, with complete graft uptake. There was significant improvement in oral aperture with satisfactory cosmetic outcome.



Figure 1,2,3: post scald burn microstomia with philtrum contracture (preop, post op day 5, post op day 12)

Case 3

Patient Profile:

A 3-year-old male child presented with restricted mouth opening since infancy, accompanied by difficulty in feeding and poor oral hygiene.

Clinical Findings:

Clinical examination revealed bilateral commissural narrowing consistent with congenital microstomia. There was no history of trauma or burns, and no associated craniofacial or syndromic abnormalities were present.

Management:

Bilateral Y–V plasty was performed at the oral commissures to release the constriction and increase the oral aperture, with attention to preserving symmetry and vascularity.

Outcome:

Postoperatively, the child demonstrated significant improvement in mouth opening, allowing normal feeding and improved oral access. Healing was uneventful, and the cosmetic outcome was satisfactory. No recurrence was observed during follow-up, and caregivers were advised regular mouth-opening exercises.

3. DISCUSSION

Microstomia in children poses significant challenges related to nutrition, speech development, oral hygiene, and airway access. Early surgical intervention is essential to prevent functional deterioration and long-term morbidity.⁶

Several surgical techniques have been described for the management of microstomia, including Z-plasty, rhomboid flaps, and free tissue transfer in severe cases.⁷ Among these, Y–V plasty remains a reliable and effective technique for commissural reconstruction due to its ability to lengthen the oral aperture while maintaining tissue vascularity and commissural symmetry.^{5, 8}

In post-burn microstomia, adjunctive scar release and skin grafting may be required to prevent restenosis.⁹ Postoperative physiotherapy plays a crucial role in maintaining mouth opening and reducing recurrence rates.¹⁰

4. CONCLUSION

Y–V plasty is an effective and versatile reconstructive option for the management of paediatric microstomia. When performed early with meticulous surgical technique and supported by appropriate postoperative care and physiotherapy, it yields excellent functional and cosmetic outcomes with minimal recurrence.

REFERENCES

- [1] Posnick JC, Goldstein JA. Surgical management of congenital and acquired oral commissure deformities. *J Oral Maxillofac Surg.* 1993;51(8):831–837.
- [2] Converse JM, Wood-Smith D. Reconstruction of the oral commissures. *Plast Reconstr Surg.* 1963; 31:357–368.
- [3] Chicarilli ZN, Ariyan S. Burn contractures of the oral commissure. *Plast Reconstr Surg.* 1987;79(1):68–75.
- [4] Grabb WC, Smith JW. *Grabb and Smith's Plastic Surgery.* 6th ed. Philadelphia: Lippincott Williams & Wilkins; 2007. p. 682–686.
- [5] Millard DR. Commissuroplasty by Y–V advancement. *Plast Reconstr Surg.* 1959;23(3):224–232.
- [6] Mathes SJ, Hentz VR. *Plastic Surgery.* 2nd ed. Philadelphia: Saunders Elsevier; 2006. p. 455–460.
- [7] Achauer BM, VanderKam VM. Management of postburn perioral contractures. *Clin Plast Surg.* 2000;27(1):77–88.
- [8] Hallock GG. Utility of local flaps in commissure reconstruction. *Ann Plast Surg.* 1990;24(2):112–118.
- [9] Sheridan RL, Hurley J, Smith MA. Burn scar contracture of the mouth in children. *Burns.* 1995;21(6):438–441.
- [10] Barret JP, Herndon DN. Principles and practice of burn surgery. *Plast Reconstr Surg.* 2003;111(2):729–746...