Indications and outcomes of refeeding via mucous fistula in neonates: a retrospective study at a tertiary care center

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PURPOSE

Mucous fistula refeeding (MFR) preserves intestinal function in ostomized neonates by reinfusing proximal output into the distal limb. We aimed to define its indications, effectiveness, and complications.

METHODS

A retrospective review (2011-2024) of neonates ostomized after neonatal surgery who received MFR for bowel stimulation/decompression and/or to reduce parenteral nutrition (PN) dependence and complications. Patients were categorized into four groups based on the underlying pathology: intestinal atresia, meconium ileus, intestinal ischemia and necrotizing enterocolitis (NEC).

145 patients reviewed → 29 patients included

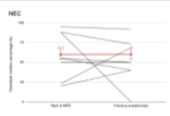
RESULTS

NECROTIZING ENTEROCOLITIS (n=9)

Population:
Male/Female n(%): 5 (55%)/4(44%)
Mean GA: 29.8±5.8

Nutritional changes

Necrotizing enterocolitis n=9			
Type of Nutrition (%)	**Start of MFR (%)**	**Previous anastomosis (%)**	**p value**
Parenteral Nutrition (PN)	55%	50%	> 0.05
Enteral Nutrition (EN)	45 %	60%	> 0.05



Days of MFR: 25.6±10.0

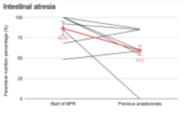
-Full permeability of the distal intestinal end was achieved previous to the reanastomosis.

INTESTINAL ATRESIA (n=8)

Population:
Male/Female n(%): 5 (62.5%)/3(37.5%)
Mean GA: 35.1±3.1

Nutritional changes and outcomes

Intestinal Atresia n=8			
Type of Nutrition (%)	**Start of MFR (%)**	**Previous anastomosis (%)**	**p value**
Parenteral Nutrition (PN)	86.65%	59.5%	< 0.05
Enteral Nutrition (EN)	11.5%	46.25%	< 0.05
Bowel segment diameters	**Mean bowel segment size discrepancy ratio at first intervention**	**Mean bowel segment size discrepancy ratio at re-anastomosis**	**p value**
	12.1:1	3.7:1	<0.05



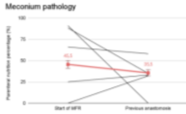
Days of MFR: 25.6±5.9

MECONIUM PATHOLOGY (n=6)

Population:
Male/Female n(%): 2 (33%)/4(66%)
Mean GA: 30.2±4.0

Nutritional changes and outcomes

Meconium pathology n=6			
Type of Nutrition (%)	**Start of MFR (%)**	**Previous anastomosis (%)**	**p value**
Parenteral Nutrition (PN)	45.5%	35.5%	> 0.05
Enteral Nutrition (EN)	54.5%	67.5%	> 0.05
Contrast enema	**Normal**	**Microcolon**	**p value**
n(%)	5(80%)	1(20%)	<0.05



Days of MFR: 34.2±18.0

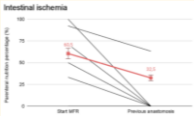
-Decompression and distal and distal bowel permeability were ensured in all patients.

INTESTINAL ISCHEMIA (n=6)

Population:
Male/Female n(%): 5 (83%)/1(16%)
Mean GA: 26.8±5.4

Nutritional changes

Intestinal ischemia= 6			
Type of Nutrition (%)	**Start of MFR (%)**	**Previous anastomosis (%)**	**p value**
Parenteral Nutrition (PN)	60.5%	32.5%	< 0.05
Enteral Nutrition (EN)	38.4%	73.6%	< 0.05



Days of MFR: 45.5±28.0

Nine patients n= 9 (31%) achieved full enteral feeding prior to reanastomosis.

Complications	n=29	%
Intestinal content reflux*	15	51.1%
Accidental tube displacement	10	30.3%
Skin erosion	2	6.1%
Prolapse	2	6.1%
Bleeding	2	6.1%

*Much of this leakage is inherent to the technique as the goal is to progress to the total effluent of the proximal end or until reflux occurs.

Only three patients required home TPN upon discharge.

CONCLUSION

Abdominal MFR promotes intestinal growth, reduces parenteral nutrition needs, and aids decompression and stimulation in meconium ileus and intestinal atresia. In NEC, commonly associated with larger resections and less distal remaining colon, no differences have been observed except for stimulating the rest of the colon and checking its permeability prior to reanastomosis.

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