

Improvise Meconium Suction Device: A Practical Alternative for Developing Countries

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Summary

Anjay MA, Anoop P Improvise Meconium Suction Device: A Practical Alternative for Developing Countries *Nigerian Journal of Paediatrics* 2003;30:78. An improvised device for intratracheal suctioning of meconium stained newborns is described. This device involves cutting a section of an ordinary suction catheter and connecting its proximal end to a corresponding sized endotracheal tube. This device is simple and effective and can replace the relatively more expensive adapters that may be difficult to find in developing countries.

Key Words: Neonatal resuscitation, Meconium, Suction devices.

Introduction

MECONIUM stained liquor is a common and significant perinatal problem.^{1,2} Asphyxiated neonates born through thick meconium require direct tracheal suction for resuscitation.³ This also reduces the risk of meconium aspiration syndrome.⁴ For this, a direct negative pressure is applied to the endotracheal tube. This requires an adapter to connect the tip of the suction tubing to the proximal end of the endotracheal tube, both of which have fixed standard dimensions. Commercially available adapters are expensive and are not freely available in developing countries. To overcome these problems, we use a simple and effective improvisation.

Materials and Methods

A plain suction catheter size French gauge (FG) 10 and a 3.0 mm endotracheal tube are the only requirements (Fig 1). The standard 15 mm plastic adapter at the proximal end of the endotracheal tube is pulled out. The suction catheter is cut at a length of about 7 cm from the proximal end (Fig 2). The cut end can easily and snugly be inserted into the modified

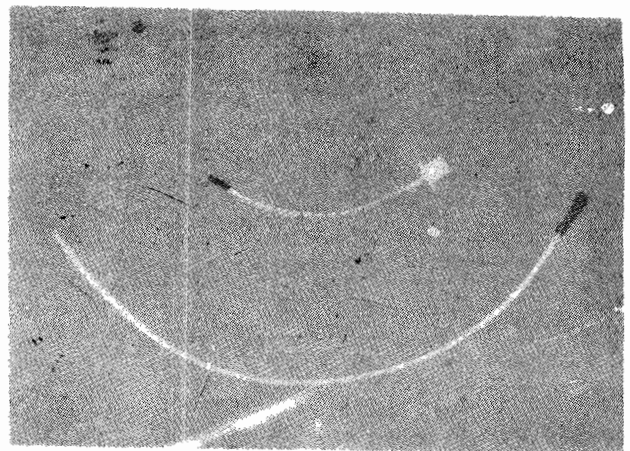


Fig. 1. A 3.0 mm endotracheal tube and an FG 10 plain suction catheter.

endotracheal tube (Figs 3 & 4). Suction catheters of sizes FG 8 and 12 aptly suit 2.5 and 3.5 mm endotracheal tubes, respectively. This improvised device is kept ready and introduced into the trachea when indicated. The proximal end is firmly attached to a standard suction apparatus for adequate tracheal suction.

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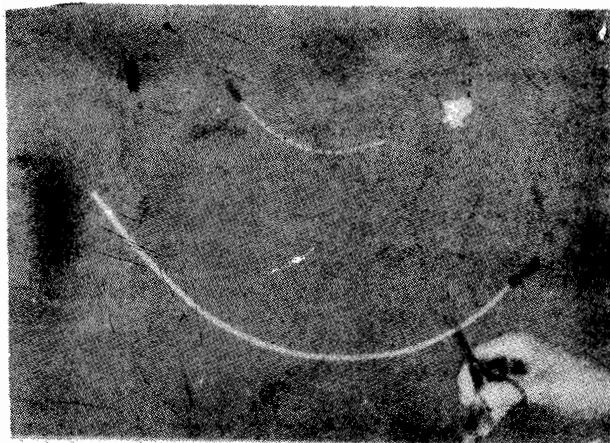


Fig. 2. The plastic adapter is pulled out from the endotracheal tube. The suction catheter is cut at about 7 cm from the proximal end.

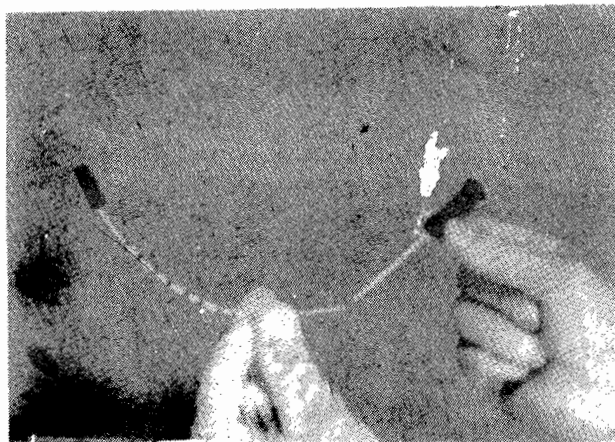


Fig. 3. The cut suction catheter is introduced into the bare proximal end of the endotracheal tube to form an airtight and firm connection.

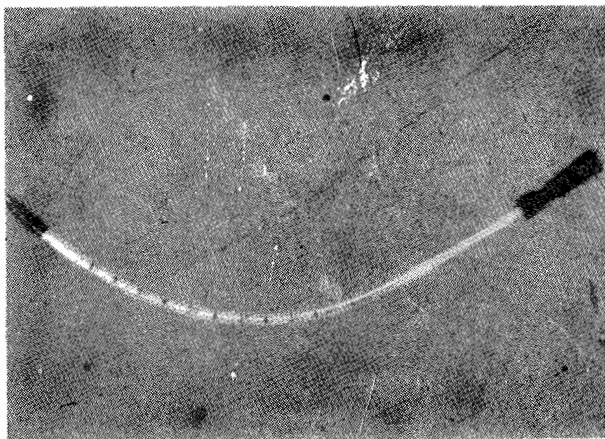


Fig. 4. The improvised meconium suction device.

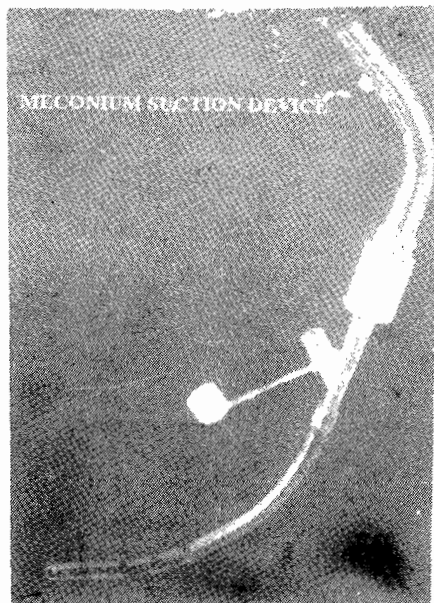


Fig. 5. A commercial meconium suction device.

Discussion

The procedure is simple, uses inexpensive equipment and produces an effective suction apparatus. Immediate resuscitation of depressed or bradycardic babies born through thick meconium requires direct tracheal suction.⁵ Commercial suction adapters (Fig 5) are expensive (\$5 apiece). Non-availability of the adapter has prompted the use of ineffective, outdated methods like direct oral suction or suctioning the endotracheal

tube with a smaller feeding tube, which are not recommended.³ The described improvisation is a viable alternative. Furthermore, problems of disinfection do not arise, as endotracheal tubes are disposable in most centres, as are suction catheters. Nevertheless, this does not preclude possible reuse after thorough disinfection at centres where this is feasible. The only additional expense involved is a plain suction catheter which is 25 times cheaper than a commercial adapter. This results in significant savings in time, money and effort.

for resource-starved hospitals in most developing nations.

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