Letter to Editor

A Cost-Effective Fluid Collection Bag for Laser Photocoagulation in Preterm Infants with Retinopathy of Prematurity

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Dear Editor,

Retinopathy of Prematurity (ROP) is a potentially blinding condition in premature babies due to the growth of abnormal blood vessels in the retina. Laser photocoagulation (LPC) is one of the main treatment modalities for ROP as it reduces the risk of retinal detachment. LPC is usually required in premature infants between 32-60 weeks post-conceptional age, weighing 1.0-4.0 kgs.[1] Premature infants are prone to hypothermia, which may lead to postoperative complications like hypoglycemia, metabolic acidosis, delayed awakening, postoperative apnea, and increased mortality.[2]

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LPC usually takes 30-60 minutes for each eye depending on the severity of ROP. During LPC, saline irrigation is used to protect the cornea from drying, clear the visual field, and minimize injury. During prolonged LPC, a large volume of saline may trickle down the eyes and soak the operating table sheet leading to an increased risk of hypothermia despite other methods for warming like warm operating room, plastic wraps, or radiant heaters.[3]

For ophthalmic surgeries, sterile drapes are used, which have a specifically designed built-in collection bag for irrigating fluid runoff. The attached bag collects excess fluid to maintain a clean and sterile field, prevent fluid accumulation, and soakage of the operating table sheet (Figure 1a). LPC does not require painting and draping of the eyes with sterile drapes which results in saline accumulation and soakage of the operating table sheet during prolonged procedure.

Hence, we have designed a cost-effective solution using a readily available intravenous infusion set bag, face mask nose wire, and adhesive tape (Figure 1b, c).

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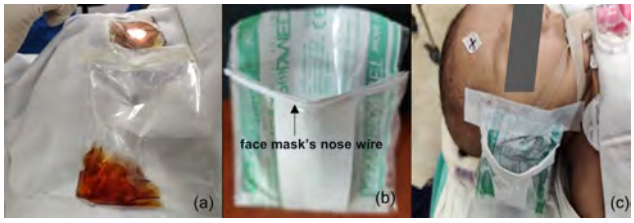

Figure 1:
(a): Sterile drapes with built-in collection bag
(b): Novel bag design with taped face mask's nose wire
(c): Taped novel fluid collection bag

The infusion set bag is cut and the face mask's nose wire is taped on one side with adhesive tape to ensure that the collection bag remains open during the whole procedure. This novel bag is taped at both the cheeks with micropore before the start of LPC. Our design ensures proper functionality, particularly in terms of fluid collection and preventing soakage and resultant hypothermia in preterm infants.

We believe that this low-cost collection bag design can make a significant impact, particularly in the resource limited setting, without compromising the quality of care as well as in effectively preventing hypothermia in preterm infants during LPC.

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Conflicts of interest

There are no conflicts of interest.

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