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## Umblicoplasty for large protruding umbilicus accompanying umbilical hernia: a simple and effective technique

Accepted: 21 July 2003 / Published online: 11 March 2004  
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**Abstract** A large umbilical protrusion with redundant skin accompanying an umbilical hernia sometimes needs umblicoplasty. Although several different techniques for making umbilical depression have been used, the results of the plastic surgery are sometimes unsatisfactory due to postoperative flattening or disappearance of the umbilical depression. To make a permanent umbilical depression that is cosmetically acceptable, we have modified the techniques. Umblicoplasty was performed in 14 children whose ages ranged from 6 months–6 years and 3 months (median, 1 year and 10 months) and who had umbilical hernia with a large umbilical protrusion. After the fascial defect was closed, the diameter of the umbilicus was reduced to half that before surgery by removing fan-shaped skin flaps and approximating skin edges, and then inverting the umbilicus and fixing it caudally to the fascia and skin. There were no postoperative complications, and no flattening or disappearance of umbilical depression was observed during the follow-up of 10–19 months. The authors' technique of umblicoplasty for a large protruding umbilicus accompanying umbilical hernia is a simple method that produces acceptable cosmetic results.

**Keywords** Umbilical hernia · Umblicoplasty

### Introduction

Umbilical hernia is a common condition of infancy that pediatric surgeons see in daily practice. Umbilical hernia with a small fascial defect usually closes spontaneously by 1 year of age and generally does not require surgery. A large umbilical hernia, however, sometimes needs umblicoplasty for a protruding umbilicus with redundant skin, even after the fascial defect has spontaneously closed. Although several different techniques for making an umbilical depression have been used [1, 2, 3], the results of the plastic surgery are sometimes unsatisfactory due to postoperative flattening or disappearance of the umbilical depression. To avoid postoperative complications and to make a permanent umbilical depression that is cosmetically acceptable, we have modified the techniques. Herein we report the results of our simple technique for umblicoplasty that we have recently used in patients with umbilical hernia and large umbilical protrusion.

### Materials and methods

Between March 2001 and November 2001, 14 children (seven boys and seven girls) with an umbilical hernia with large umbilical protrusion (usually 2–2.5 cm in diameter) were treated with the surgical technique described below. During infancy (< 12 months of age), umbilical hernias were followed up without any treatment such as compressive strapping or taping. Surgical repair was considered in patients older than 1 year of age, except for a 6-month-old patient whose parents preferred early surgical repair to conservative follow-up with observation. Surgery was indicated either when spontaneous closure of the fascial defect was incomplete or when umbilical protrusion with redundant skin was prominent. The age of the patients at surgery, therefore, ranged from 6 months–6 years and 3 months (median, 1 year and 10 months).

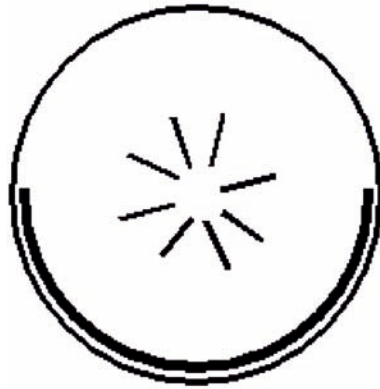
Under general anesthesia, an umbilical hernia with large umbilical protrusion was repaired as follows: An infraumbilical incision along a skin crease was made inside the umbilicus, and subcutaneous fat tissue was bluntly dissected (Fig. 1). After the

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**Fig. 1** Umbilicoplasty for a large protruding umbilicus accompanying umbilical hernia. An infraumbilical incision along a skin crease is made inside the umbilicus



**Fig. 2 A** Two fan-shaped skin flaps (shaded areas) are excised, and skin edges are approximated (white arrows) and sutured with 5-0 absorbable sutures. **B** Then a cap- or cone-shaped umbilicus is inverted and anchored to the fascia



(A)

(B)

hernia sac was transected, the peritoneal edges and the fascial edges were approximated in a classical “vest-over-pants” fashion [4] with 2-0 non-absorbable sutures. A second layer of interrupted sutures was placed to secure fascial closure. Then the remnant of the hernia sac was sharply dissected from the undersurface of the umbilical skin so that it could be easily inverted. Two fan-shaped skin flaps were excised, and the skin edges were approximated and sutured with 5-0 absorbable sutures (Fig. 2). Then the cap- or cone-shaped umbilicus was inverted, and the neoumbilicus was anchored to the fascia at its bottom. After the skin was closed, two more anchoring sutures with 5-0 monofilament nylon suture with a pledget were placed to fix the umbilicus to the skin in the caudal direction. Gentamicin ointment was applied to the wound, which was then covered with a protective dressing. The two nylon sutures were removed 2 weeks after the operation (Fig. 3).

**Results**

The 14 patients were followed up for 10–19 months. There were no postoperative complications in the wound, and no flattening or disappearance of the umbilical depression was observed during the follow-up period. All the parents expressed their satisfaction with the appearance of the neoumbilicus.



**Fig. 3** Neoumbilicus 1 month after umbilicoplasty

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## Discussion

A large umbilical hernia needs umbilicoplasty for a protruding umbilicus with redundant skin, even after the fascial defect spontaneously closes. In our method, the diameter of the neoumbilicus was reduced to half that of the protruding umbilicus by removing fan-shaped skin flaps and approximating skin edges. It was obvious that the reduction in diameter was crucial to assure permanent umbilical depression, and there actually were no complications such as flattening or disappearance of the umbilical depression. In addition, the reduced size of the umbilicus and the caudally directed umbilical depression were approved by the parents. Therefore, we think our

technique of umbilicoplasty for a large protruding umbilicus accompanying umbilical hernia is simple and effective and that its results are cosmetically acceptable.

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