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## Negative pressure manoeuvre in microtia reconstruction with autologous rib cartilage<sup>☆</sup>

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Received 12 December 2008; accepted 1 July 2009

### KEYWORDS

Microtia;  
Auricle;  
Negative pressure

**Summary** In microtia reconstruction, maintaining a healthy contact between the skin and the fabricated cartilage framework is essential to attaining a smooth and accentuated contour of the reconstructed auricle. Conventional means to achieve this include bolster sutures and continuous suction drains, both of which have associated shortcomings. A new dressing method was developed and applied in 10 consecutive patients who underwent the first of a two-stage microtia reconstruction using the Nagata technique. A small catheter was introduced into the space between the skin and the cartilage framework. Negative pressure was applied through the catheter, drawing the skin onto the cartilage framework. This evens out the skin, accentuates the contour of the framework and concurrently eliminates potential dead space. Skin contact on the framework is maintained whilst the catheter is removed and an occlusive transparent dressing is applied to the ear. Of the 10 cases in which this manoeuvre was performed, one had to be converted to the bolster suture technique due to a persistent air leak from the wound. Overall results of the nine cases in which this technique was carried out successfully demonstrate smooth skin contour and excellent definition of the fabricated framework. This negative pressure manoeuvre provides a simple, safe and consistent approach to achieving a smooth and accentuated contour in auricular reconstruction.

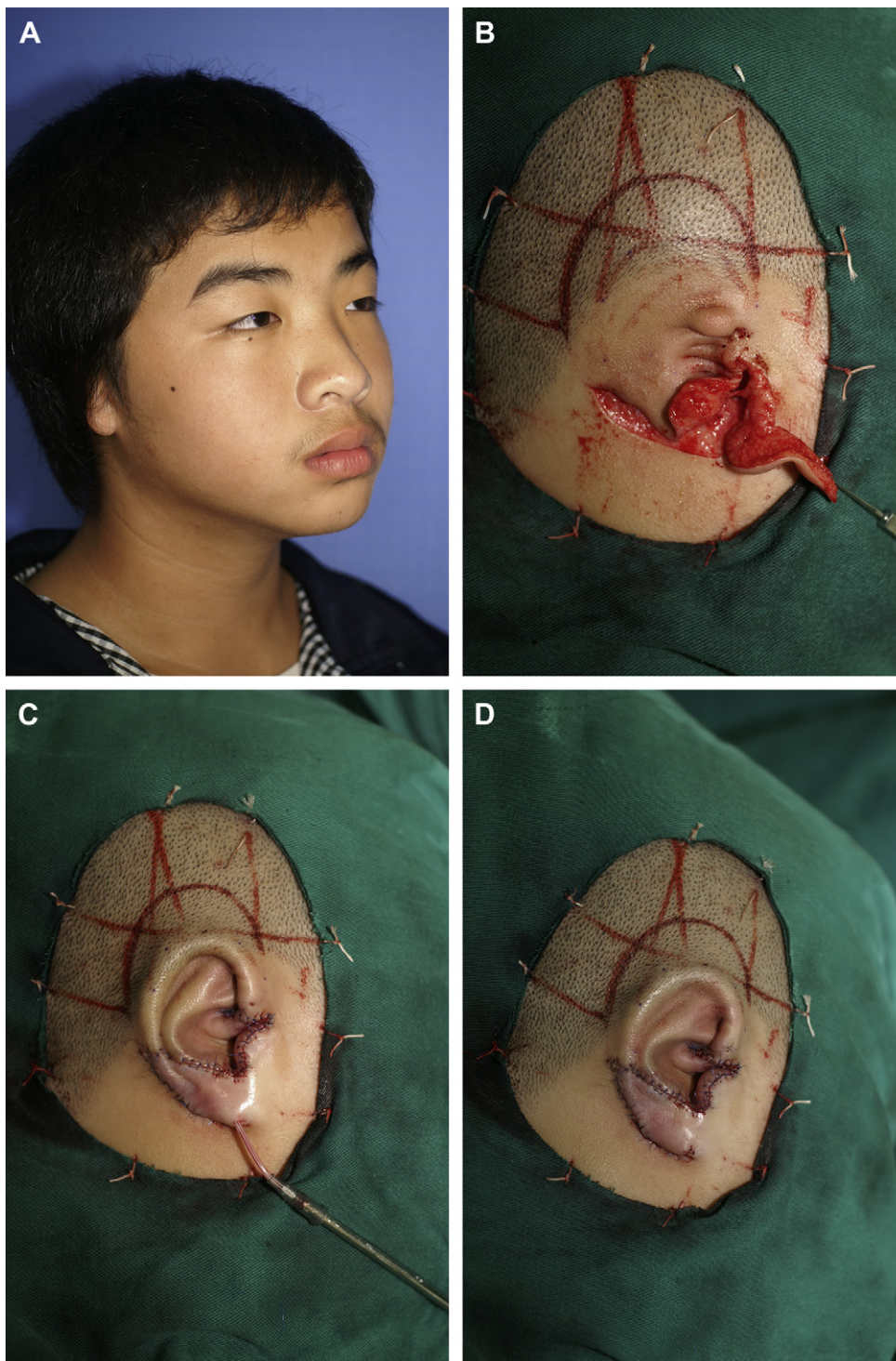
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The detailed three-dimensional (3-D) morphology of the external auricle demands an intricate approach to its reconstruction. Current debate surrounds the optimal dressing method after wound closure to achieve smooth draping of skin over the complex 3-D cartilage framework.<sup>1</sup> We introduce a new technique in which a negative pressure manoeuvre is used to evenly drape the skin over the 3-D cartilage framework and to facilitate postoperative wound care without drains or bolster sutures.

<sup>☆</sup> Presented in part at the 7th Asian Pacific Craniofacial Association meeting, Taipei, Taiwan, 5–8 October 2008.

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**Figure 1** (a) Pre-operative picture of a 13-year-old male with lobule-type microtia. (b) The skin pocket is prepared using the technique described by Nagata for insertion of the fabricated 3-D cartilage framework. (c) The suction catheter is placed into the space between the skin and the cartilage framework. The skin is drawn onto the framework as negative pressure is applied. (d) The accentuated contour of the reconstructed auricle is maintained after removal of suction catheter, as long as skin tension remains minimal and airtight conditions are maintained.

Ten consecutive microtia patients underwent the first of the two-stage auricular reconstruction using the technique described by Nagata.<sup>2</sup> During the first stage, the fabricated 3-D cartilage framework was inserted into the skin pocket.

The Nagata technique uniquely enables creation of an ample skin pocket, and ensuring minimal skin tension is a prerequisite to effectively performing the negative pressure manoeuvre. After wound closure, a 16-gauge

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