OBJECTIVES:
The complex contours of the auricle hinder the placement of a routine pressure dressing following otoplastic surgery. Here, we create a custom-fitted and durable bolster dressing using Polyvinylsiloxane (PVS) impression material to maximize the functional and aesthetic outcomes following stage I microtia repair and auricular hematoma evacuation.

RESULTS:
Initially a paste-like consistency, the PVS material was able to conform to the unique auricular convolutions of both applications prior to solidifying into a clean and odorless polymer. In all six patients who underwent stage I microtia repair, desirable aesthetic relief was achieved as the nourishing skin flap was intimately bolstered against the carved cartilage framework. The combination of vacuum suction and bolster fixation prevented the formation of dead space and resulted in a good contour of the repair (Figure 1). There were no surgical complications or allergic reactions to the PVS.

In the immediate post-operative period following stage I microtia repair, obliteration of potential space between the implanted cartilage scaffold and the overlying skin is essential to an aesthetic result (1). This also prevents hematoma formation in the subcutaneous pocket which is a major risk for infection of the implant. In a separate scenario, traumatic auricular hematoma results in blood collecting in the potential space between perichondrium and the underlying cartilage (2). Left untreated, fibrocartilage develops from the damaged perichondrium resulting in a deformity known as “cauliflower ear” (3). Management consists of early evacuation of the hematoma, followed by external compression to prevent re-accumulation within the space (4).

In both cases, the intricate contours of the human auricle hinder the placement of a routine pressure dressing. PVS impression material is a silicone elastomer consisting of an addition-polymerization reaction between two pastes (a base and an accelerator) which can be dispensed from a dual cartridge. Upon mixing, it forms a polymer material that is clean, odorless, and is readily tolerated when applied to the skin or mucosa (5,6). Modern PVS has a working time of approximately 3-5 minutes before the final set.

DISCUSSION:
In the past, we simply used rolled-up petrolatum gauze to fill the auricular convolutions defined by the underlying cartilage implant. This gauze was then held in place with a standard Glasscock ear dressing. Daily wound checks in the immediate post-operative period necessitated revision of the pressure dressing each time the bolster was taken down for inspection. The creation of a custom-fitted PVS mold provided a bolster which served two purposes.

Firstly, it conformed to the unique convolutions of the auricular fossae, leading to obliteration of dead space between the costal cartilage framework and skin which is essential for a desirable aesthetic outcome and the prevention of hematoma formation. Secondly, its durability and ability to retain its shape allows for frequent removal and reaplication for wound inspection. Management of traumatic auricular hematoma consists of early evacuation by incision and drainage, followed by external compression to prevent re-accumulation within the potential space between perichondrium and underlying cartilage. Compression dressings and bolsters vary widely and have included the use of through-and-through suturing, tie-over dressing, thermoplastic splints, silicone splints, and plaster of paris dressing (7). The durability of the PVS bolster allowed the patient to resume his martial arts sparring activity during the immediate post-operative period.

CONCLUSION:
PVS impression material is a silicone-based product that molds to the complex contours of the ear. This property allows it to function as a bolster to decompress potential spaces following various otoplastic procedures.

REFERENCES:

Figure 1. (a) Completed stage I microtia repair with surgical drains in place. (b) Custom-fitted PVS bolster (view from bolstering surface demonstrating auricular convolutions). (c) Auricular bolster in place prior to applying Glasscock dressing (different patient from (a)).

Figure 2. (a) Auricular hematoma prior to evacuation. (b) Custom-fitted PVS bolster (view from bolstering surface demonstrating auricular convolutions). (c) Auricular bolster sutured in place. (d) Resolution of hematoma after one week of treatment.