

Microtia Mission in Quito, Ecuador

with Helping Us Give Smiles (HUGS) & The Face Charity (TFC)

Report by

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Introduction

The HUGS microtia mission was located in Quito, Ecuador at the Fundacion Tierra Nueva, Hospital Un Canto a la Vida between 24th April – 5th May.

Microtia

Microtia, literally 'little ear', describes the congenital condition of a unilateral or bilateral missing or small ear. It can appear on its own or as part of a syndrome, such as Goldenhar syndrome, hemifacial microsomia or Treacher-Collins syndrome. Only 1 in 10 of those affected with microtia experience bilateral microtia. Fortunately, microtia is a rare condition affecting about 1 in 7,000 babies (0.014%), with a male and Asian dominance. It is not understood why, but the right ear is more commonly affected.

Microtia is commonly associated with some degree of deafness or hearing loss – unless the condition is bilateral, development of speech and language is generally unaffected. In those with bilateral microtia, hearing aids can be used to support development of speech and language. Surgical intervention is confined to the cosmetic due to poor outcomes for inner ear operations. The charity mission this year concentrated on ear reconstruction using cartilage grafts from the rib. This is a two-stage operation carried out around secondary school age (9-11) Stage one involves placing carved cartilage under the skin and in stage two, the surgeon lifts the ear from the head with a block of stored cartilage. The team uses the Firmin technique.



An example of an ear reconstruction using a rib graft from this year's (2018) mission.

HUGS Charity

Dr. Vito C. Quatela, a recognized leader in the field of aesthetic facial surgery, is the founder and president of the HUGS Foundation. He is Board Certified by the American Board of Facial Plastic

and Reconstructive Surgery (ABFPRS) and the American Board of Otolaryngology – Head and Neck Surgery (ABO).

In 2003, Dr. Quatela founded the HUGS Foundation with a simple goal in mind. He wanted to change the lives of children using a team of skilled surgeons to correct congenital facial deformities. These children have been deprived of a healthy and joyful life due to their congenital deformity and lack of medical care.



Quito, Ecuador

Quito, officially known as San Francisco de Quito is the capital of Ecuador, a country located in South America and is 25km from the equator. It is the first city in the world that was named a World Heritage Site by UNESCO. After La Paz in Bolivia, Quito is the second highest capital city in the world at 2,850 meters. Furthermore, Quito is the second most populated city in Ecuador, after Guayaquil – with a population of 2.6 million in 2014.

The Latin American Collaborative Study of Congenital Malformations (ECLAMC) detected a high frequency of Microtia in Quito (Ecuador). 46 041 live births were assessed from two hospitals. The observed prevalence rate for Microtia was over five times higher in Quito (17.4/10 000) than in the other cities (3.2/10 000).

Consultant Members of the Team

- Paul Sabini, MD, FACS. Delaware
- Vito C. Quatela, MD. – Rochester, New York
- Scott K. Thompson, MD. – Salt Lake City, Utah
- Tessa A. Hadlock, MD. Boston, Mass.
- Joseph Dusseldorp, B.Com., MBBS (Hons), MS, FRACS (Plast). Boston, Mass



Tessa Hadlock is currently the professor of facial plastics and facial reanimation at the Mass. Eye and Ear Hospital. She has a \$3million research fund to research facial reanimation and her normal practice is microtia repair and gracilis free flap reconstruction for facial paralysis.

Joe Dusseldorp was Francoise Firmins fellow previously. He will hopefully join the Face Charity in the Philippines once he take up a consultant post in Sydney.

Schedule / Process Overview

On the first day, a clinic was held where patients were triaged for first stage, second stage surgery or follow-up surgeries, e.g. laser hair removal of aberrant follicles. Requests and demands of the patients were assessed and full anaesthesiologist evaluation were carried out, for example, the decision to treat under local or general anaesthetic. Required tests were ordered and the surgery schedule for the week is drawn up, including which procedures to carry out and when.

Photos were taken throughout with consent and there was a chance to assess the outcomes of previous years. Each day, the team travelled together to the hospital on a provided bus. The OR generally started around 0800 with the team arriving at 0730 am to prepare. Each working day was between eight and twelve hours and took place over three operating rooms. 43 patients were operated on during the week between the ages of 11 and 38.

The normal operative schedule was a first stage (development of pocket, harvest of rib, carving of ear, insertion of drains, bandage) each morning. In the afternoon the second stage was undertaken (insertion of block of left over cartilage to project the ear forward) and a revision case.

Pneumothorax

One patient developed a pneumothorax. This was noticed relatively quickly and treated by deflating the lungs, suturing the parietal pleural tear. The repair was tested and it was sound. Subsequently it was felt that it was only the parietal pleura that was involved.

There was a change of anesthetist during the case, and the hand over was poor therefore the second anesthetist continued manual ventilation lead that likely led to the development of a further pneumothorax (or a second pneumothorax) that was treated with decompression (removal of repair of parietal pleura) and insertion of chest drain. This situation was made worse by the fact that the chest drain equipment was all old, no one was familiar with it – with the exception of one of the theatre nurse volunteers who worked in cardiothoracics and ENT. A Pneumothorax Kit will be produced and teaching session will be held before every mission for key staff.

Personal Experience

It was a great experience to work with the senior and respected facial plastic ENT surgeons from across North America and make professional and personal connections. I am excited that we have recruited a new plastic surgeon to join us on our mission to the Philippines. I am also excited that I have been offered a fellowship in Paris with Firmin's replacement in due course. I also hope to visit Tess Hadlock at the Mass Eye and Ear and see some facial re animation surgery.

Learning Points

This is a list of notes I made throughout the mission

- 1 excise follicles to reduce hair growth on ear
- 2 if no block graft use rolled skin graft from chest
- 3 posterior based flap to cover chock (block of cartilage to
- 4 sneak extra bit of cartilage in at the top end to get forward projection of superior origin
- 5 first day protocol.
- 6 make pocket before getting out ribs
- 7 local in pocket
- 8 Divide muscles between rectus and intercostals
- 9 bury chock superficially
- 10 carve to opposite site standard issue pattern. Measure height. Use canthus alar and commissure to sort out position. Relate position to eyebrow also.
- 11 skin graft scar should be behind ear - allow graft to pull the ear skin over the edge of the helix
- 12 drainage of haematoma. Penrose drain.
- 13 placement of needles - you need to consider the helix and base plate separately. Pins far back on helix.
- 14 lobule placement is determined by opposite side via template and axis
- 15 anterior based flap is wrapped around chock

Photos



Pre Op Marking



Rib Carved but not assembled.



Rib Carved and assembled



Inserted with suction drains



Second Stage with Projection and Skin Graft



the**face**charity