

Report from Otology humanitarian mission in Mekelle, Ethiopia

By Manuela Cresswell (ENT Specialist Registrar)

Global ENT Outreach (GEO) is a charity that provides teaching in Otology in low-resource settings all over the world. I was privileged to participate in one of their biannual visits to Northern Ethiopia at Ayder Specialty Hospital in Mekelle from 22nd to 28th June 2019, thanks to the generous support of the TWJ Foundation.

The team involved in this mission included 2 audiologists and 5 ENT doctors: 2 consultants, 2 core surgical trainees and myself as a senior registrar. Team members travelled from the US and the UK via Addis Ababa and thence to Mekelle.

The aims of this mission were:

- To inaugurate the first temporal bone laboratory and course in Ethiopia and train the local ENT trainees as well as visitors from other African countries.
- To carry out major otology surgery with the local doctors (ENT trainees, otology fellows and consultants) as an opportunity to provide one-to-one training whilst providing clinical care to the Ethiopian population.

On the first day the team met with Dr Yilkal Tassew (lead for ENT at Ayder Hospital) and Dr Joshua Wierdermann (GEO fellow) as well as the local ENT trainees. Firstly, we observed a comprehensive ward round of ENT inpatients. We subsequently headed to the outpatient department to review the patients triaged for surgery. The operating list was programmed for the week, scheduling patients from remote areas for the beginning of the week and those local to Mekelle later in the week. The 2 audiologists in the team were instrumental in assisting the Ethiopian clinic nurses in hearing assessments for patients.

The temporal bone course started in the afternoon with interactive lectures by GEO founder Dr Richard Wagner.

During the following days the team was divided in 3 groups:

- **Temporal bone course.** A team led by Dr Wagner supervised the 9 candidates whilst they drilled cadaveric temporal bones. Each candidate had one-and-a-half days to drill the temporal bone. 2 candidates came from outside Ethiopia, one from Somaliland and one from Zambia.
- **Outpatient team.** The audiologists spent the week training and supervising the Ethiopian ENT nurses who carry out audiometry. They had ample time to review the principles of audiometry, discuss case studies, demonstrate the need for masking and instruct in troubleshooting. We reviewed difficult cases before or after the theatre sessions.
- **Operating room team.** A team led by Dr Mike Hoa (Consultant Neurotologist) carried out 19 major ear surgeries (10 tympanoplasties, 5 stapedectomies, 3 mastoid explorations and 1 ear canal mass excision with blind sac closure). Most of the time 2 operating tables were running at the same time in the same room. As a senior

registrar, I was able to operate under supervision and train the local ENT trainees and fellows in ear surgery techniques. Key skills taught were harvesting of temporalis fascia, harvesting of tragal and conchal cartilage, raising of tympanomeatal and conchomeatal flaps, assessment of ossicular chain mobility, mastoidectomy and tympanic membrane reconstruction.

Every day after about 4 pm all the local and visiting doctors gathered for lectures in the ENT ward and watched the videos from the surgeries carried out during the day. The lectures were given by the consultant Otologists and supported by high quality video examples of all the techniques.

The Ethiopian doctors were very friendly and welcoming and spoke very good English. I was humbled to see how hard-working and committed they are to the mastering of clinical and surgical knowledge. They were all extremely generous to each other with their knowledge, and it was common to see senior registrars explaining surgical steps to the juniors. They knew all the patients by heart and were very interested to get involved in research projects.

The type of pathology encountered in Ethiopia appeared very different to ear disease in the UK. Tympanic membrane perforations were almost always subtotal or total and in most cases bilateral, requiring novel tympanic reconstruction techniques. The incidence of otosclerosis is much higher in the Ethiopian population and patients often present late, with fixation of not only stapes but malleus and incus and/or cochlear otosclerosis. Several patients had tympanosclerosis of the middle ear with calcified bands fixing the ossicles and tympanic membrane and very large air-bone gaps on audiometry. Surgically, these cases were extremely challenging as surgical landmarks were difficult to identify.

Several projects arose from this mission and we ensured that the Ethiopian ENT trainees were involved in them and so will be named authors for any future publications and presentations.

This was a fantastic opportunity for me to learn different surgical perspectives and techniques from local doctors and US consultants. Moreover, it was very rewarding learning at the same time as teaching others. I was very pleased to be able to share my existing skills and knowledge in surgery, outpatients and the temporal bone laboratory with local doctors.

The value of this amazing mission lies in its focus on education and training for Ethiopian doctors. This ensures that the interventions have sustainability and that the benefit isn't limited to the patients receiving direct clinical care during the mission: its impact extends into the future when Ethiopian doctors will continue to provide care to others, using the skills and knowledge learned and practised during our visit.