Facing Africa: Noma

Alex Rickart – BAOMS Travel Grant - 26th April - 22nd June 2019

Introduction

Aptly described as the face of poverty, Noma rapidly progresses from oral ulceration to oro-facial gangrene. With a mortality rate thought to be as high as 90% and with so few able to access treatment in its active phase, very little is understood about the disease.

Most commonly affecting children under the age of six, the most recent estimated annual incidence is 20 cases per 100,000 population. Predominantly affecting sub-saharan countries in a belt running from Mauritania to Ethiopia, the incidence is highest in West Africa.

Risk factors can broadly be held under the umbrella of poverty. However, specific factors identified from affected populations highlight viral coinfection, poor oral hygiene, the low coverage of immunisations, malnutrition, poor sanitation and lack of access to clean water alongside an increasing incidence in those affected by the HIV and AIDS pandemic.

What turns the preceding oral ulceration or necrotising ulcerative gingivitis into Noma is as yet undefined, though it is probably due to a combined pathological oral flora in the presence of a child with limited physiological resources and impaired immunity secondary to poor nutrition and concurrent disease. *Fusobacterium Necrophorum* and *Prevotella Intermedia* are purported microbiological isolates. Those children with intra-uterine growth restriction are more often affected. As a result, it is unlikely to be coincidence that the average age of onset is analogous to the timing of the linear phase of growth retardation. This delay in beginning the childhood phase of growth between six and eighteen months is also what causes stunting amongst this population.

Treatment for the acute phase of the disease includes addressing the underlying malnutrition, provision of oral antibiotics and good oral hygiene. For those who survive, predicted to be numbering 770,000 people in the continent of Africa alone, the functional, psychological and aesthetic sequalae are significant. It is these patients that Facing Africa has been treating in Ethiopia since 2009, organising two surgical missions each year.

Pre-Operative Phase

Alongside two fantastic ICU nurses, Sophie and Vanessa, I formed part of the team who would stay in Menagesha, just outside of Addis Ababa for the two-month duration of the mission. One of the key reasons why Facing Africa is able to take on the surgically and anaesthetically challenging cases that Noma presents is the provision of thorough pre and post-operative care. The first two weeks of the mission sees patients arriving from the far-flung corners of Ethiopia, often travelling multiple days by bus. At this point, medical history, examination and further investigations are undertaken, and the patients given nutritional support. Equally important is the social integration between patients and staff alike, especially as these are people who are often ostracised because of their appearance.

This part of the mission gave me an opportunity to test my clinical knowledge and gain experience working in a resource poor environment. Although the primary focus of Facing Africa is in the management of Noma, a plethora of pathology presents for assessment. This ranges from tropical diseases such as muco-cutaneous leishmaniasis through to huge fibro-osseous tumours; it was a fantastic learning experience.

This photo captures not only the social integration and friendships formed between patients, but also demonstrates the range of pathology. From left to right is a mild noma defect, hyena bite and infantile haemangioma (consent kindly given by parents and guardians).

Surgical Phase

After the initial two weeks, the main team arrived. Two cranio-facial surgeons, one plastic surgeon and a maxillofacial surgeon were accompanied by a vastly experienced team of four consultant anaesthetists and a barrage of auxiliary staff.

Straight off the plane, everyone converged to drink plenty of coffee and assess the patients in Menagesha. Having prepared a presentation, it was interesting to run through each case with the team. Perhaps most valuable was to being able to listen the discussions between four consultant surgeons as they talked through the management, alternative approaches and risks and benefits of different surgical solutions for these challenging cases. Ultimately, those who were good candidates for surgery were shortlisted and those who were not, for a variety of often heart-breaking reasons, were turned away. The following day, I was able to attend the planning meeting, where the short-listed cases were discussed further and re-evaluated by the whole team. I was particularly impressed with how meticulous the planning process was and although it is not possible to help everyone, the decision making process helped to ensure those who would benefit most had the reserve to recover well were offered surgery.

The team then ran two theatres over the nine days undertaking a large range of maxillofacial, plastic and reconstructive procedures ranging from free-tissue transfer to ankylosis releases. At this stage my main role was in working up patient's for theatre and in aiding logistics and transfers of patients from Menagesha to Addis Ababa, however, I was able to attend theatres for two days to assist. This was a great opportunity to see procedures I wouldn't be able to see elsewhere, especially important was seeing a primary Noma operation. The extent of scarring and the effect of the disease on the hard and soft tissues was most appreciable intra-operatively.

Post-Operative Phase

At the end of the two-week surgical part of the mission, the team attended for a final ward round in Menagesha. Again, this was very helpful in identifying potential pitfalls, patients of concern and planning for discharge. At this stage, we said goodbye to our colleagues and our team of three, assisted by our brilliant Ethiopian nurses and Facing Africa managerial team, undertook the post-operative care over the following month.

I learnt a great deal from my nursing colleagues who were veterans of previous missions to Ethiopia. Owing to the environments that patients are returning to and the poor or absent provision of local care, it was our role to have patients completely healed before discharge. This taught me a lot about the healing process and certainly it was interesting to see how underlying malnutrition affected recovery and how complications in wound healing could be managed. There were a handful of relatively minor complications and liaising with one of the local surgeons as well as the team at home enabled their transfer to Addis for assessment and subsequent management. Ultimately, it was very rewarding to see the positive effects of surgery on each patient and the team carried out some truly life changing operations of which I was glad to have played my small part.

It was with great sadness that after two short months the mission came to a close. I can't speak highly enough of the work that Facing Africa undertakes in Ethiopia and would highly recommend this role to any maxillofacial junior trainee and I hope to return again one day.

Acknowledgements

Firstly, I would like to thank Chris and Terry Lawrence for the amazing job they have done in setting up and running this fantastic charity. Additional thanks go to Selam, Wassi and Derje, Sophie and Vanessa for their brilliant work, help and support during my time in Ethiopia. Finally, I am very grateful to BAOMS in providing a travel grant to make this trip possible.