

Impact of Yearly Head and Neck Surgery Trip to Rural Kenya

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Map of KENYA⁴
Population²:
41 million
Otolaryngologists³:
22

ABSTRACT

Objective: Surgical specialty trips to third world countries have been both praised and criticized for contributions to low-resource regions. Our objective was to learn the impact of a yearly Head and Neck Surgery trip through initial analysis of two years of patient data.

Methods: Review of a prospectively maintained data repository cataloging surgical patients treated on a yearly Head and Neck surgical trip to Malindi, Kenya, during 2010-2011. Basic demographics, distance traveled for care, access to physicians, pre-operative diagnosis, surgical procedure(s), and pathology results were recorded for each patient.

Results: In two years, 226 surgeries were performed. The majority of patients had access to a local physician and 2/3rds were seen by one for their chief complaint, yet very few patients were offered prior surgical treatment. The most common operations performed were adenotonsillectomy, hemithyroidectomy, and biopsy/keloid/lipoma excision. A wide variety of cases were performed, pathologies encountered, and there were no immediate surgical complications.

Conclusion: Annual surgical specialty trips to rural, resource-limited regions are worthwhile and offer procedures not otherwise available. It is important to collect patient, surgical, and pathology data on such trips. By continuing to collect valuable data, surgeons can determine the best procedures to teach local physicians and provide needed resources.

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INTRODUCTION

Despite having 25% of the global burden of disease, Sub-Saharan Africa has only 3% of the World's health workers, in stark contrast to the United States, which has 10% of the global health burden of disease, yet 42% of the World's health workers¹. Little is collectively known about the scope of Otolaryngology-related disease and pathology in Sub-Saharan Africa. Even less has been reported from the country of Kenya, where diagnostic equipment, necessary instruments, and Otolaryngology trained physicians are in short supply, especially in rural areas (Image 1). In a country of 41 million people², Kenya has 22 Otolaryngologists per a report in 2006³.

A team of physicians and support staff from our institution travel to the small town of Malindi, Kenya once yearly for a two-week Head and Neck Surgery trip. We created a prospective database to describe the demographics, disease burden, nature of presentation, and factors limiting access to care of patients treated on the trip, as well as monitor the volume of procedures performed and pathologies encountered over time. We herein report our findings over two annual trips in 2010 and 2011.

METHODS AND MATERIALS

Patients of all ages with surgical head and neck needs were treated at both Tawfik Hospital and Malindi District Hospital (Image 2) in November 2010 and November 2011 during 2, 2-week surgery trips. Patients were screened by members of our team during the trips or selected by the one ENT surgeon in Malindi throughout the prior year. Appropriate IRB approval was obtained and protocol followed for informed consent.

Demographic information was obtained during pre-surgery patient interviews and surgery and pathology details were added post-op by surgeons and Pathologists. De-identified data was recorded on pre-printed, small note cards (Figure 1). Data points corresponded with an electronic, password-protected database updated with available information post-trip.

Figure 1. Note card for data collection

Table 1. Descriptive Findings

| Findings | #/n (%) |
|--|--------------|
| Patients treated in 2010 | 106/223 (48) |
| Patients treated in 2011 | 117/223 (52) |
| Female patients treated | 128/223 (58) |
| Patients presented with imaging | 34/194 (17) |
| Presented with CT scan | 22/34 (65) |
| Traveled more than 100km | 40/138 (29) |
| Access to local physician | 109/137 (80) |
| Previously offered surgery for chief complaint | 35/168 (22) |
| Same-day hospital discharge | 44/136 (32) |
| Hospital stay <2 days | 110/136 (81) |

Table 2. Interesting Pathology

| Final Pathology | n |
|-------------------------------------|---|
| Papillary thyroid carcinoma | 5 |
| Pleomorphic adenoma parotid | 5 |
| Cemento-ossifying fibroma | 4 |
| Odontogenic fibromyxoma | 3 |
| Ameloblastoma | 3 |
| Adenoid cystic carcinoma | 2 |
| Sinus Histiocytosis (Rosai-Dorfman) | 1 |

Table 3. Interesting Procedures

| Interesting Procedures | n |
|-------------------------------|---|
| Anterolateral thigh free flap | 2 |
| Fibular free flap | 1 |

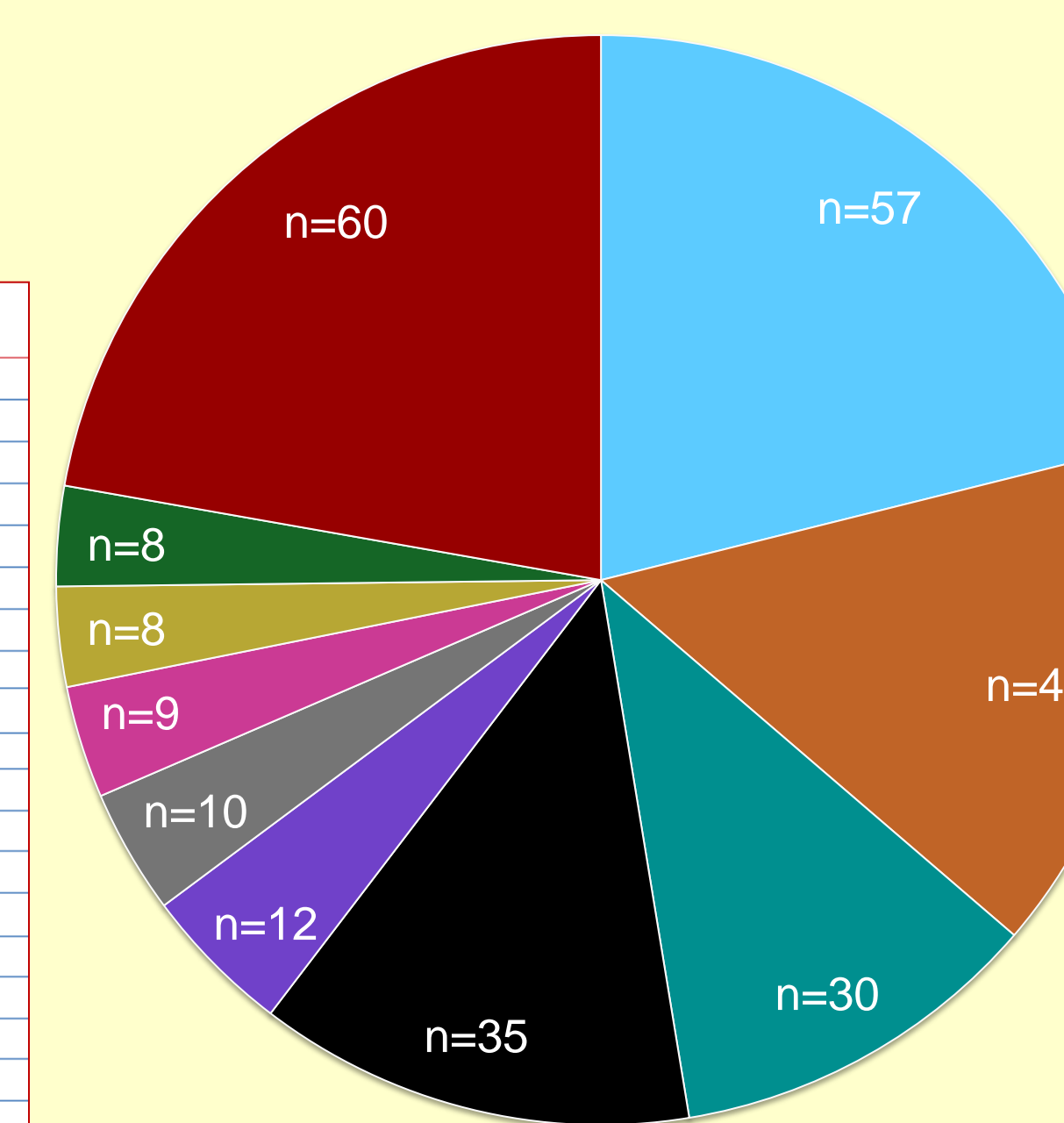


Figure 2. Surgical procedures performed

RESULTS

- 226 procedures were performed in 2 years
- A wide variety of cases were performed, from routine (Figure 2) to complex cases (Table 3)
- Patient age ranged from 3 months to 85 years, median age: 24 years
- 50% of patients traveled from outside Malindi for surgery and 1/3 traveled >200 km round trip
- 80% of patients reported access to medical care, 67% had been seen specifically for their chief complaint by a local physician, yet only 22% were offered prior surgery (Table 1)
- Only 50% of patients were previously given a definitive diagnosis for their chief complaint by a local physician
- In over 1/3 of patients, their chief complaint had been present for 5 or more years (Figure 3)
- 17% of patients presented with previously obtained imaging, mainly CT scans (Table 1)
- The majority of procedures performed under general anesthesia (93%) and there were no major complications.
- Pathology specimens were obtained whenever possible, and a wide variety of pathology was encountered (Table 2)



Image 1. Typical home in Malindi



Image 2. External view Malindi OR

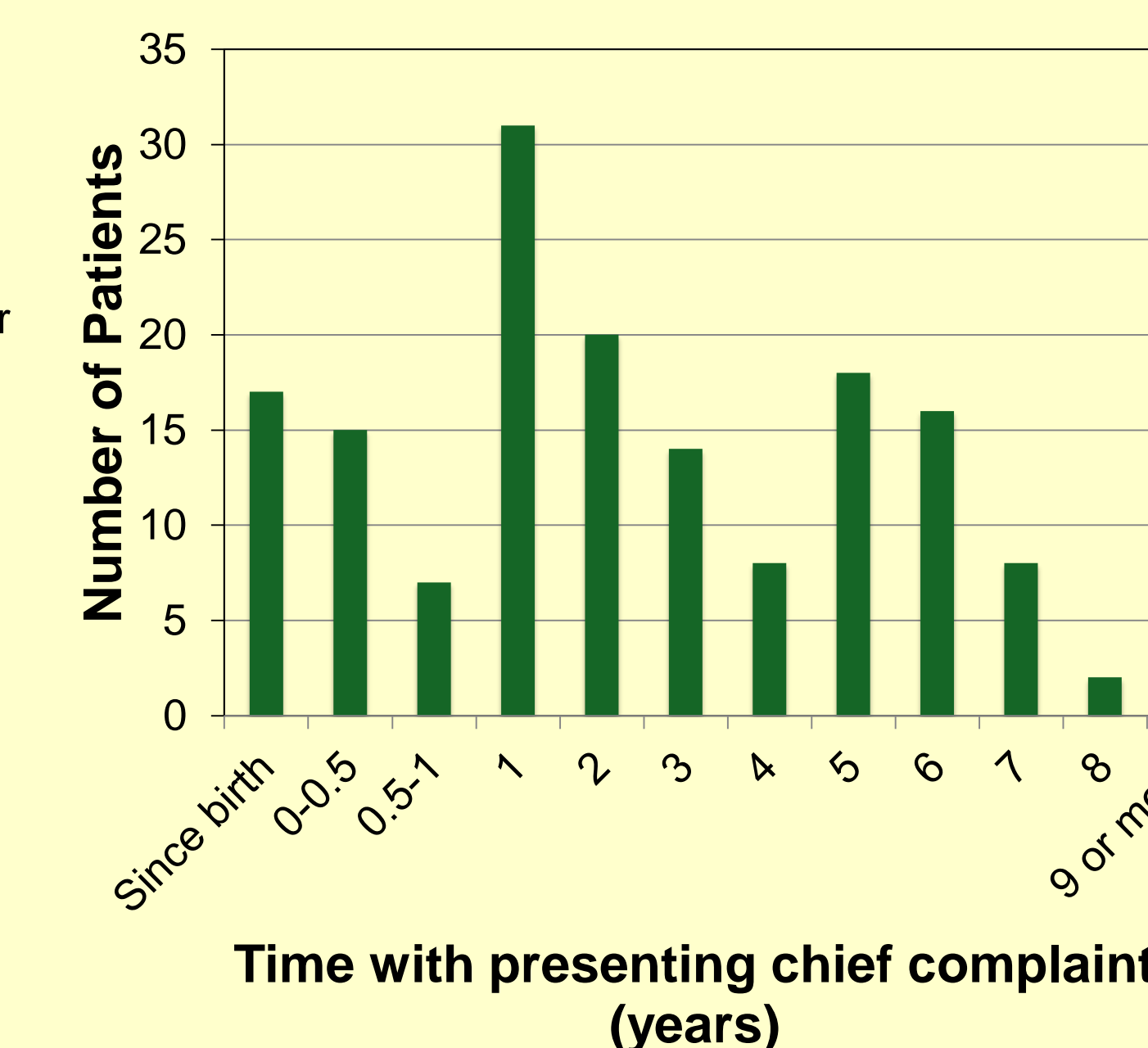


Figure 3. Length of time with chief complaint

DISCUSSION

To our knowledge, this is the first report of findings during a head and neck surgery trip to rural Kenya. The majority of patients had access to health care; however, half had not received a definitive diagnosis from a local physician and very few were previously offered surgery. We performed a wide variety of procedures and although many could be considered "commonplace" from a Western perspective, 50% of patients had waited five or more years for surgery. As well, even if offered, most patients in the region can not afford "elective" surgery. Parotid, thyroid, and even difficult tonsil surgeries were reserved for our team because the local ENT surgeon did not feel comfortable. Therefore, in Malindi, the ability to perform many "routine" otolaryngology procedures is not feasible either because the available surgeons are not adequately trained, or patients are unable to pay. Thus, without yearly trips, the treatment of both benign and malignant head and neck diseases still remains a challenge to the region of Malindi, Kenya, and presumably, other parts of Africa. Our report is limited by short-term follow-up and recall bias during patient interviews, yet presents a feasible and concise model for data capture on international surgical trips.

CONCLUSION

Annual surgical specialty trips to rural, resource-limited regions such as Malindi, Kenya, are necessary, worthwhile, and offer procedures not otherwise available. It is important to collect patient, surgical, and pathology data on such trips. By continuing to collect valuable data, surgeons can ultimately determine the best procedures to teach local physicians and provide needed resources. Therefore, our study contributes a snapshot of disease burden of rural patients in Kenya and provides otherwise unknown insight into the region's surgical needs.

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