



Pediatric otolaryngology in a field hospital in the Philippines



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ABSTRACT

Background: Major natural disasters adversely affect local medical services and resources. We sought to characterize pediatric patients presenting with otolaryngology-head and neck surgery (OTO-HNS)-related diseases/injuries to a field hospital over 11 days of operation, which was deployed to assist the healthcare facilities in Bogo, the Philippines, in the aftermath of typhoon *Haiyan* (Yolanda).

Methods: We reviewed charts of pediatric patients aged 0–18 years visiting our field hospital, who presented with OTO-HNS-related diseases/injuries. We also describe the structure of the field hospital, equipment, facilities and capabilities of our service, discuss medical and ethical concerns, and propose several recommendations for future similar missions.

Results: Of the 863 pediatric visits, 91 (11%) presented with OTO-HNS-related diseases/injuries, 3 of them were of recurring patients. Of the 88 included individual patients, 47 (53%) were boys, with an average age of 6.9 ± 4.9 years. Ear-related diseases, mostly acute otitis media (AOM), and neck-related diseases were the most common pathologies (49% and 16% of the patients, respectively). Antibiotic therapy was administered to 36 (41%) patients, mostly to children with AOM. Despite limited resources, we were able to perform surgical interventions on 8 (9%) patients, which included laceration suturing, abscess drainage and neck surgery.

Conclusions: Otolaryngologists have an important role in the treatment of children affected in a disaster area, at a time of an increased demand for healthcare. Unlike 'acute phase' missions, where traumatic injuries are the focus for treatment, 'subacute' phase missions provide more routine medical and surgical care.

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1. Introduction

A high percentage of pediatric patients has been reported in disasters, occurring both in developed and developing countries, which ranges from 29% to 37% of all injured patients [1–3]. Since most of the care for affected children is largely provided in existing local hospitals in disaster zones, foreign field hospitals deployed in such areas should be prepared to assist treating these children [4,5]. In previously deployed field hospitals from several countries,

an otolaryngologist has not been a regular member of the surgical or the pediatric team.

In November 2013, the Israeli Defense Forces (IDF) launched a humanitarian mission to the city of Bogo in the Philippines, in the aftermath of typhoon *Haiyan* (Yolanda), as done on previous occasions [6–8]. The mission arrived in the area 6 days after the typhoon struck, and established a fully-stocked field hospital nearby the local hospital, which functioned for 11 days, but well beyond the "golden hour" of trauma. As a result, most of the patients presented with ordinary diseases, which may have exacerbated following the disaster, rather than trauma-related injuries. Our main goal was to help filling the gap between the pre-typhoon period and the arrival of governmental and non-governmental organizations to the area, and ensuring continuity of medical care to local residents, initiated in the immediate post-disaster period.

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Fig. 1. Overall view of the Israeli Defense Forces field hospital in Bogo. (A) The pediatric emergency unit (PEU), left, was connected with the adult section of the field hospital, right. Severo Verillo Memorial District Hospital, behind. (B) Treatment provided by one of the PEU personnel in a local patient, held by his mother. (C) The main triage position of the hospital, where children were referred to the PEU after short briefing. Local translators wear yellow vests.

In our pediatric emergency unit (PEU), we provided medical and surgical care to children less than 18 years old. The PEU was set in one large tent, which connected to the joint admission position and to the adult section of the field hospital, just outside Bogo's Severo Verillo Memorial District Hospital, an urban medical center without an otolaryngology-head and neck surgery (OTO-HNS) service (Fig. 1). Our team included 4 pediatricians, one otolaryngologist, and other healthcare personnel. Following initial triage, children were examined and received ambulatory treatments in our PEU, which was opened daily for 12 h. We used basic examination instruments, including portable otoscopes, and foreign body loops. In our mobile laboratory, we performed blood and urinary chemistry analysis, blood count, blood gases, and microbiology cultures (with gram and acid-fast stains). In addition, we brought portable high-quality X-ray and ultrasound machines, which were operated by our team's radiologist and technicians. When required, patients were hospitalized in the local pediatric ward, with full cooperation from the local staff.

The otolaryngology clinic was located inside the local hospital, very close to the PEU, where we could perform minor procedures under local anesthesia, such as suturing lacerations or draining abscesses. Additionally, we were also able to perform several procedures under general anesthesia, using the local hospital's operating room. However, its availability was heavily constrained due to more urgent cases. During our work, local provincial health officials visited our field hospital, together with other fund raisers, and we could hand them a selected list of patients who needed a more thorough workup, which can be done elsewhere.

In this report, we sought to describe the pediatric patients who presented to our PEU with OTO-HNS related diseases/injuries and discuss clinical and ethical concerns we have encountered during our work.

2. Materials and methods

The work has been approved by the IDF Medical Corps Ethical Committee. Each patient had an electronic medical record, as well as a hard copy paper file. Each record included demographic details, a photograph of the patient, diagnosis, management and aftercare instructions. If not fluent in English, all explanations were translated to the caregivers and patients in their own language. All the caregivers of the patients agreed that the patients would be examined, treated and photographed. Informed consent form was signed on the local hospital's official documents.

We retrospectively reviewed charts of pediatric patients, who presented to our field hospital and were treated in the PEU. We used International Classification of Diseases, 9th Revision (ICD-9) codes, to identify patients with a primary diagnosis of ENT-related diseases/injuries (Appendix 1). Data were prospectively collected for each patient, including age, sex, date of presentation, diagnosis,

and treatment provided. Patients who presented with upper and/or lower respiratory tract infections were excluded.

3. Results

3.1. Patients characteristics

Of the 863 pediatric visits to our PEU, 91 (11%) presented with OTO-HNS related diseases/injuries, 3 of them were of recurring patients. Of those 88 individual patients, 47 (53%) were males, with an average age of 6.9 ± 4.9 years. As shown in Fig. 2, boys tended to present at an earlier age than girls, and with more ear-related pathologies. Table 1 shows the distribution of OTO-HNS diseases/injuries, according to the affected organs, and the proportion of patients who had received antibiotic therapy. Ear-related diseases, mostly acute otitis media (AOM), and neck-related diseases, were the most common illnesses, in 43 (49%) and 14 (16%) of the patients, respectively. Antibiotic therapy, either oral or topical, was administered to 36 (41%) of the patients, and was generally dispensed to patients with AOM and acute otitis externa. Oral amoxicillin, and otic drops containing neomycin, dexamethasone and polymixin B, were the two most common agents used, in 13 (36%) and 12 (33%) of all the patients who had received antibiotic therapy, respectively. We operated on 5 of these patients: 2 under general anesthesia (Sistrunk operation, forceps extraction of an ingrown tooth), and 3 under local anesthesia (1 patient with a supraclavicular abscess drainage and 2 patients with lacerations).

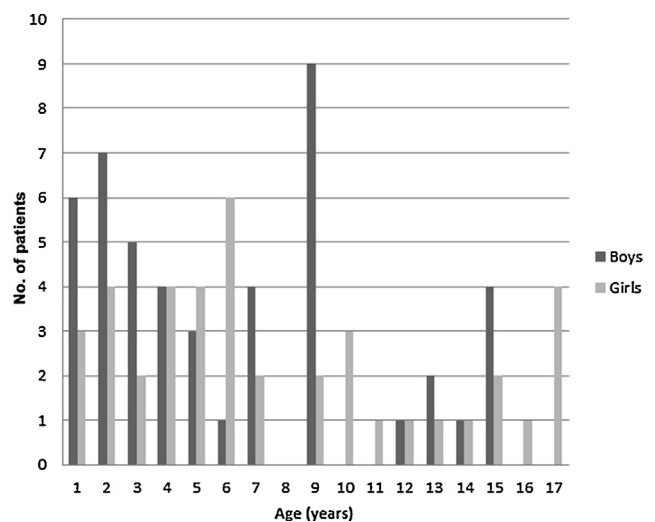


Fig. 2. Distribution of pediatric patients visiting our pediatric emergency unit, by age and gender ($N = 88$).

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