

Surgical Interventions at Field Hospitals during the Iran and Iraq War (1980–1987)

Avaz Heidarpour, MD*
Mohammad R. Jahani, PhD†

Ali Dabbagh, MD‡
Massoud S. Khatami, MD§

Surgical treatment of wounded soldiers in the field began in World War II, and the care of the wounded was aided by air, ground, and marine transportation. Even with highly developed facilities, medical care should be started as soon as possible. The Islamic Republic of Iran was under an economic blockade during its war with Iraq. Field hospitals were considered a solution to the problem of transportation shortages. The aim of this study was to assess the surgical interventions of these hospitals. In a descriptive cross-sectional study, data for 7,718 patients admitted to field hospitals (among a total of 173,823 casualties) were analyzed. A checklist was used as the data-collection tool. The data were entered and analyzed by the Statistical Program for the Social Sciences. The type of surgical intervention, duration of the surgery, and frequency of the interventions in each hospital were examined. Laparotomy was the most common and tracheostomy the least common intervention. Shahid Baghaei Field Hospital had the greatest number of admissions. Of all the patients in the Southern Command District who underwent any kind of surgery, 21.53% were operated on in the complex of field hospitals. The surgery time in these hospitals was 156 ± 69 minutes (mean \pm SD). A great number of the procedures were lifesaving (including laparotomy and chest tube insertion). It seems that these hospitals played a key role in reducing mortality and morbidity during the war.

Introduction

The Iran and Iraq War began in 1980. Medical and health personnel played a key role in this conflict by rendering essential care like other health personnel in other military actions.

Before World War II, transport of wounded soldiers was not a well-defined process.¹ This situation progressed during the ensuing years, with the development of air, ground, and marine transportation systems.² Nevertheless, there have always been many problems associated with the transport and treatment of war casualties.^{3,4} Even the most developed and equipped transportation systems are at times deficient.⁵ For this reason, medical care should be started at the front lines as soon as possible,⁵⁻⁷ and even this process of care should be started at the forward edge of the battlefield area.⁸

During the Iran and Iraq War, the Islamic Republic of Iran was confronted with a shortage of transportation equipment and facilities because of the economic blockade. The Field Hospitals

*Departments of Anesthesia, †Microbiology, and §Surgery, Baghiatallah (a.s) University of Medical Sciences, Vanak Square, Tehran, Iran.

‡Isfahan University of Medical Sciences and Health Services, Shohada Square, Ibn Sina st, Isfahan, Iran.

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Program was designed and executed to transfer lifesaving surgical procedures to the front lines to decrease transport time as much as possible.

This study was designed and performed to determine the frequency and the most common types of surgical interventions in these hospitals in the Southern Command District of the war and to use these data in planning for future engagements.

Methods

In a descriptive, cross-sectional study, all of the files concerning the admitted patients in the field hospitals under study were evaluated. The files had a general format that was predesigned and that made data collection easy. All cases in the patient population were studied. A checklist was used that was based on previous studies and a small number of files. It listed the eight most common procedures plus a ninth category called "other procedures." The checklist also gave the duration of each operation. The checklist was assessed by a number of researchers to increase face validity. The Statistical Program for the Social Sciences was used for data entry and analysis.

Results

Of 173,823 patients admitted in the studied field hospitals, 32,534 patients underwent surgical operations; 7,718 of the latter group were operated on in field hospitals (21.53%). The other operations were performed in rearward hospitals. A total of 20,112 hours were spent in operations, with 156 ± 69 minutes (mean \pm SD) for each operation.

The most frequent surgical intervention was laparotomy (30%), and the least frequent intervention was tracheostomy (0.7%). The greatest number of patients were admitted to the Shahid Baghaei Hospital and the least number to the Einekshosh Hospital. The total results are shown in Tables I and II.

TABLE I
SURGICAL INTERVENTIONS IN SOUTHERN DISTRICT FIELD HOSPITALS IN THE IRANIAN FRONT (1980–1988)

Intervention	Frequency
Laparotomy	2,100 (30%)
Chest tube insertion and/or thoracocentesis	1,288 (18.3%)
Orthopedic procedures	1,173 (16.8%)
Vascular procedures	388 (5.6%)
Amputation	300 (4.3%)
Thoracotomy	222 (3.2%)
Ear, nose, and throat procedures	99 (1.4%)
Tracheostomy	47 (0.7%)
Others	1,390 (19.8%)

TABLE II
NUMBER OF THE PATIENTS ADMITTED IN EACH OF
THE FIELD HOSPITALS

Hospital	Number of Operations
Shahid Baghaei	2,168
Ali Ebne Abitaleb	2,155
Iman Hossein	914
Fatematazahra	600
Shahid Borojerdi	321
Khatamolambia	305
Amiralmomenin	277
Shahid Radmanesh	201
Shahid Beheshti	107
Einekhosh	74

Conclusion

Among the nine items on the checklist, laparotomy was the most frequently performed procedure, which could be attributable to the higher incidence of injuries to this region of the body. The low frequency of tracheostomy could be the result of the greater efficacy of other methods of airway support. The second most common procedure was chest tube insertion and/or thoracocentesis, which are lifesaving procedures.

A considerable portion of all total military surgical procedures (21.63%) were performed in field hospitals without modern facilities and equipment; this suggests a high degree of cost-effectiveness in the interventions performed in these centers. The relatively long duration of the operations suggests that these patients could not be transported to the rear.

The results reported here suggest effective care in the field hospitals. More rigorous assessments and studies in this field seem necessary.

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