Desert Storm: The Dentist in the Forward Support Battalion

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Providing dental care during operation Desert Storm while assigned to a forward support battalion (FSB) was a unique experience for a dental officer. The dental officer must be prepared to be both flexible and readily available to assist in medical as well as dental missions. This article presents a different perspective of the experiences of a dental officer assigned to a FSB in direct support of an armored brigade in combat.

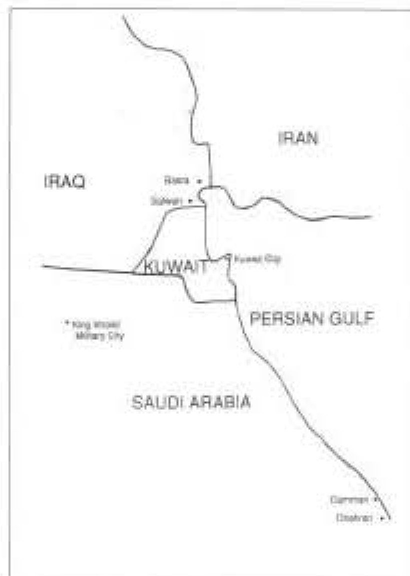

Figure 1. General overview of the Persian Gulf region.

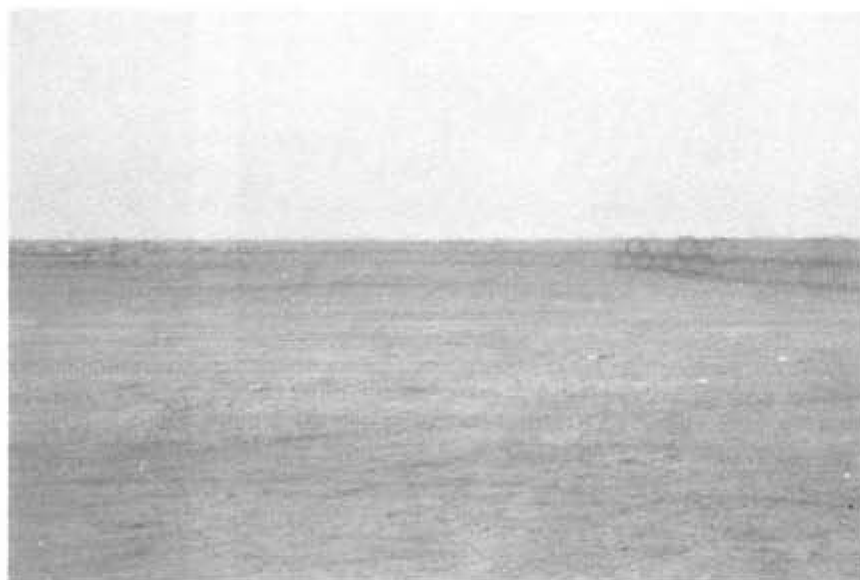

Figure 2. Tactical Assembly Area (TAA) — Saudi Arabia.

On Nov 8, 1990, while on a field training exercise at the Hohenfels Training Area in Germany, the Third Brigade of the Third Armored Division was alerted to prepare for deployment to Southwest Asia (SWA). The brigade's vehicles and equipment were scheduled to be at the port in Holland by Dec 14. Many long hours were expended to insure the equipment was ready to ship. The dental van was fully stocked with the premise that dental supplies would not be available for at least six months due to the unavailability of supplies from the Division Medical Supply Office (DMSO). Prior to deployment, supply requests were placed by division dentists to DMSO to ensure supplies would be available in SWA.

Each brigade is provided direct support by a Forward Support Battalion (FSB). The dental officer is located in the medical company (clearing company) of the FSB. This officer is responsible for providing emergency dental care, triage of casualties and assisting with ATLS procedures. He is the final authority for all dental matters within the brigade.[1] The challenge in the desert environment was to be versatile and highly mobile in order to keep pace with a rapidly moving force.

Saudi Arabia

On Jan 1, the 54th FSB was deployed to SWA. Upon arrival in Saudi Arabia, troops were positioned at the port of Damman and other locations around Dhahran, awaiting arrival of the equipment. The majority of the time was spent on training, with emphasis placed on nuclear, chemical and biological (NBC) warfare. A small area was established with limited supplies for the screening of sick call patients. Dental patients were screened and acute emergencies referred to a dental HA team. These dental teams were positioned in areas of large troop concentrations. They provided a great service while division dentists awaited the arrival of their equipment. By the end of January, the ships had arrived with the equipment and maintenance was completed on the vehicles. After surviving numerous SCUD missle attacks in MOPP 4 gear, the battalion moved Northwest into the desert to a Tactical Assembly Area (TAA) north of King Khalid Military City (KKMC) (Figs 1 & 2).

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After a three day journey into the desert, the medical company set up operations. The primary vehicle for the dental section in an armored brigade is the 5-ton expansible truck van (Figs 3-5). Prior to movement into the desert, there was much concern about the performance and survivability of the 5-ton trucks in the deep sand. The vans are considered "top heavy" in their construction, but they performed extremely well during the entire operation. The low transfer enabled the van to traverse the deep sand.

Dental emergency services were readily available at the TAA with the fully operational van. During dental sick call, the majority of patients

Figure 3. 5-ton expansible truck van.

Figure 4. Dental equipment.

Figure 5. Truck expanded.

Figure 6. Movement in column formation into Iraq.

Figure 7. Post-war Kuwait.

Figure 8. Post-war Kuwait.

treated were third molar problems (pericoronal infections), cracked fillings, temporary replacement fillings and root canals which had been started prior to deployment. In addition to providing emergency dental care, the dental officer and assistant participated in training within the company. In wartime, the dental officers function is to triage the casualties and assist in ATLS if needed. Planning and training were continuous events. It was imperative that every member of the team knew their roles. The biggest threat, and one which caused the most concern, was the NBC capabilities that Iraq possessed. Since the peace efforts were nonproductive and a ground war seemed imminent the Third Armored Division moved closer to the Iraqi border to a forward assembly area (FAA). Units were ordered to prepare to move on short notice. Therefore, the dental van was expanded and a minimal amount of equipment was assembled to cover dental emergencies.

Nuclear Biological Chemical Warfare (NBC)

One of the major threats during the campaign was Iraq's NBC arsenal. Many hours were spent studying and training on survivability in this environment. Self-survivability seemed to be difficult enough, but the possibility of contaminated casualties made the situation much more difficult. Different situations were considered and training was conducted to prepare to support this threat. Training was conducted on the decontamination of chemical casualties. Medical personnel working in MOPP4 in the heat presented a problem. Therefore, personnel would be rotated with nonmedical personnel performing litter bearing and other nonmedical duties.

Nerve agents are one class of chemical threats. Each soldier was issued one package of 21 30-mg-tablets of pyridostigmine tablets to be taken on order of the commander. Also issued were three MARK 1 kits (atropine and 2-PAM) and one 10mg diazepam autoinjector. The pyridostigmine tablets were to be taken one every eight hours with pretreatment reassessed every three days by chemical/medical or intelligence staff officers.[2] Continued use beyond one week was discouraged because of the unknown long-term effects. The pyridostigmine did not protect the individual from nerve agents but enhanced treatment when used in conjuction with atropine and 2-PAM. The diazepam injector was not indicated for self-use but for administration by another individual after three "Mark 1" kits had been given. The diazepam was to control convulsions caused by the nerve agent.

The vesicants (blister agents) were agents known to be in Iraq's inventory —vesicants were used by Iraq during its war with Iran. There are no immediate clinical effects with these agents. Clinical effects usually appear anywhere from four to six hours after exposure.[3] Because of the delayed effects of these agents, special precautions needed to be taken by medical personnel. It was recommended that latex gloves be used when triaging or examining any patient in a wartime environment because of the delayed effects of these agents. Without caution, an entire medical team could unknowingly become contaminated and themselves casualties, thus compromising the medical mission.

Anthrax is a disease which is normally transmitted to humans from contact with infected animals or animal products. A biological attack with anthrax spores delivered by aerosol would cause inhalation anthrax, which is a rare form of this disease.[4] By the time a diagnosis of inhalation anthrax can be made, the case is usually fatal. In the desert environment ciprofloxacin was recommended for use at the earliest signs of the disease along with supportive fluid therapy for shock. Ciprofloxacin could also be used prophylactially if intelligence sources suspected an anthrax attack was likely.

The Ground War

When the ground war was launched, the medical company was positioned as part of the logistical task force (LTF). The LTF consisted of fuel, ammunition, medical and other support elements needed to support the maneuver elements as quickly and efficiently as possible. Due to the high mobility of the force, the medical company was unable to set up in the traditional way. The LTF traveled in column formation closely following the maneuver units (Fig 6). Emergency chests for medical and dental treatment were organized so "tailgate" treatment could be provided. Medical helicopters flew missions up to battalion aid stations (BAS), thus bypassing the medical company in true emergency situations. Patients ground evacuated to the clearing company were either treated and returned to duty (RTD) or further evacuated using corps assets. This operation was a unique experience in that the clearing company was heavily augmented with medical officers. Due to the low amount of casualties, most of which were Iraqi, the dental officer did not have to be utilized in the triage role. There was usually one health care provider per patient. Any facial trauma was referred to the dental officer for evaluation, treatment and evacuation. The ground war was fast-moving and quickly over, with the number of casualties much lower than expected.

Post-War Iraq

As the ground war ended, the medical company set up for normal operations. The desert was full of destroyed equipment and unexploded ordnance, so positions were selected carefully (Fig 7 & 8). By this time the brigade, which in peace time totaled about 4500, was reaching a strength close to 7000. For the first seven days following the war, there was a high influx of dental patients. Complaints consisted mostly of cracked fillings, teeth previously treated with a partial root canal, third molar problems and chronic generalized gingivitis due to

in peace time totaled about 4500, was reaching a strength close to 7000. For the first seven days following the war, there was a high influx of dental patients. Complaints consisted mostly of cracked fillings, teeth previously treated with a partial root canal, third molar problems and chronic generalized gingivitis due to poor oral hygiene. The temperature was mild so dental materials were stable and easy to work with.

During this time the Iraqi refugees were seeking asylum by presenting themselves to American forces. The Kuwaiti government would not allow them to enter their country, so check points and camps were established along a buffer zone between Iraq and Kuwait. Medical treatment areas were established at these checkpoints and also at Safwan, a small border town in southern Iraq (Figs 9 & 10). Medical Civilian Assistance Programs (MEDCAPS) were established and treatment teams, including dentists, supported the mission. One of the biggest difficulties was the unexploded ordnance throughout the desert. Small children would play outside their homes and pick up or step on these cluster bombs, resulting in detonation. Many children were killed or disfigured from these bombs. Treating and evacuating these children was a team approach. One physician was the team leader, which insured treatment was quick and timely. The medevac crews did an outstanding job with the air evacuation of patients.

Routine dental care consisted of extractions both at Safwan and at Checkpoint Charlie. An ordinary chair was used with a medic holding a flashlight. Cold sterilization was the primary means of sterilizing instruments. Pain medications were provided in relief packages. Decay was not a major problem in these people, but periodontal disease was. Oral hygiene was poor with large amounts of calculus formation around the teeth. Many refugees arrived at the check points seeking dental treatment, where interpreters aided the dental officer in communication. The refugee mission continued while US forces remained in Iraq, but patient influx began to decrease when Iraqi troops set up check points north of US camps to stop people from attempting to flee the country. Many refugees would tell stories of how the Republican Guard would kill anyone who made contact with the Americans. Most of the Iraqi people were thankful for and appreciative of the food and treatment the US forces rendered them.

Mid-May brought the heat and the United Nations Force to the buffer zone to function as observers. All US combat troops were pulled back into Kuwait to await redeployment orders. The Kuwaiti government requested that some troops remain, so one brigade was formed from the Third Armored Division to function as a security force. The 54th FSB became part of this, and was moved with the brigade to a warehouse complex in Doha, north of Kuwait City. It was at this warehouse complex that an American base was established. The 912th MASH was colocated with the brigade for support. A dental team was sent from Saudi Arabia to augment the brigade dentist. This team was also capable of providing a dental hygiene service and operated out of the MASH. On June 15, the 54th FSB was relieved by the support troop of the 11th Armored Cavalry Regiment from Fulda, Germany.

SUMMARY

Dentistry in a forward support battalion during Operation Desert Shield/Storm provided a different perspective of the dentists' role in war time. The dental supply system within the division was nonexistent and no one seemed to think it was an important issue. The DMSO did not deploy to SWA prepared to support the dental care system. Therefore, other channels had to be used. The dental teams in Saudi Arabia were helpful in resupplying certain items but, because of their location, this was not an efficient process. Many soldiers were treated and returned to duty in a timely manner so as not to affect the mission. It should be noted that dentistry is a combat multiplier. Unfortunately,

Figure 9. Checkpoint Victor—Iraq.

Figure 10. Safwan, Iraq.

many commanders do not realize this. The support for the medical company had the lowest priority. As the temperature began to soar well over 120F, conditions in the vans were unbearable for treating patients. Body temperatures could not be taken because the thermometer read well over the scale. New air conditioners were in the vans but the maintanance company was unable to repair them, so attempts were made to work around the hottest parts of the day. The nearest dental care sites outside the division were at the evacuation hospitals and with dental teams located in Saudi Arabia. Therefore, it was important to keep the dental section functioning. Assigning a dental officer as division dental surgeon working with the division surgeon would provide the brigade dental officer support from division. During the entire operation, there was no true dental chain of command.

The Dental Corps alternate war-time role training helped to prepare the dentist for this role. The dentist was able to perform a unique function during this operation. The dental equipment worked well when it could be set up. The only negative aspect of dental care during the war was that the equipment was too bulky and cumbersome to carry and support a fast moving armored column. A suggestion would be to equip the FSB with a small, compact dental unit and x-ray machine that could be hand carried.

Operation Desert Storm was a successful operation with an incredibly low number of casualties. The highly trained force was successful in defeating Iraq's army before any chemical or biological agents could be used. Serving in a FSB as a dental officer presented a certain set of challenges and a different perspective on training, both as a soldier and as a dentist. The military dentist needs to take the time to keep current, seek training in emergency procedures and be prepared to assist on short notice. Most of this training is, however, out of the dentist's daily realm. Time must be set aside to accomplish this because, once deployment occurs, the clock ticks fast with no time for looking back.

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"CURTIS"

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Because of the brief nature of the war and the longer involvement in refugee care, often under adverse conditions, this experience has had a great impact on health care providers. What follows is an essay meant to ventilate some of those feelings. Although written by one person, it represents the feelings of all involved health care providers from the 2nd Armored Cavalry Regiment.

You came to us nameless,
so we called you "Curtis."
No parent accompanied you,
some said your mother had died in the shelling.
Near to death, you struggled to breathe.

During the long cold, wet night,
you lay among your fellow villagers
breathing shallow and agonized.
As the first light of day arrived,
you could no longer sustain life and died.

We didn't know where your family was
so we buried you near our camp.
You did not die alone, Curtis,
for we were with you and mourned your departure.

"Curtis" was a 2-year-old Iraqi Shi'ite Moslem child wounded in the March 24, 1991 shelling by Saddam Hussein of the village Suqash-Shuyukh, south of the Euphrates River in Iraq. He was cared for by the clearing station of the 2nd Armored Cavalry Regiment.

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Above: *Iraqi ward patients.* Below: *Discussing care.*