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*SHORT NOTE*

# Wartime Orthopedic Surgical Judgment

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**Abstract**

Orthopedic surgical judgment and a decision-making process in peace is a topic that has been discussed and written about for decades, but the wartime surgical judgment is something that cannot be predicted or prepared for. There is no wartime surgery class in any medical school worldwide that can prepare a surgeon for his/her work under a wartime environment applying all of their knowledge, skill and effort to achieve the best possible result for a patient. With this short note, authors would like to raise awareness on all surgical and medical staff worldwide working under wartime conditions and giving their super-human efforts to save patients.

**Keywords**

Orthopedics, Wartime, Surgical judgment, Hard environment

Orthopedic surgical judgment and a decision-making process in peace is a topic that has been discussed and written about for decades, but the wartime surgical judgment is something that cannot be predicted or prepared for. There is no wartime surgery class in any medical school worldwide that can prepare a surgeon for his/her work under a wartime environment applying all of their knowledge, skill and effort to achieve the best possible result for a patient. Despite one's best efforts, the overall difficult environment that war creates along with the experiences and problems which are faced on a daily basis, influence the outcome of every surgery. During a surgery class every medical student or during the residency young doctor learns that the ultimate goal of a surgeon has been the same since Hippocrates - to prolong life and to minimize the pain. Surgeons in peace prepare for their operations; ask themselves which technique to use on a specific patient; follow-up on a patient during early postoperative days. Surgeons in wartime ask themselves are they able to provide sufficient protection to their patients; are they safe and protected themselves; will they be able to perform the operation in the shortest period of time and in the best of their knowledge.

All of the above mentioned is something we, as authors, have experienced before. Watching news on television or Internet and writing this article from Sarajevo, Bosnia and Herzegovina, city that was under the siege for 1425 days, the longest in history after the World War II, gives us the flash-back on all we have been through and someone out there, a colleague, a brother or a sister by Hippocrates' oath, is going through right now. We were frequently being shelled while performing surgery and on one occasion three scrub-nurses were wounded. It was such an irony of a life - we were bringing patients to the operating room to attempt to save their lives and that specific operating room could have been the very place where we could all have died.

The constant threat of attacks impairs the surgeon's ability to maintain a consistent focus on the patient's needs. It is essential to modify the surgical protocol because of the nature of the injuries as well as the circumstances under which every operation is performed. How can it be modified "on the spot"?! How do surgeons overcome the lack of electricity and water in the operating theater when no generators or other equipment are available? How do surgeons priorities as to which patient should be treated first? Are surgeons emotionally and physically strong enough to remain professionally objective and to set aside personal pain and prejudice?

As we are writing this article and you, as a reader, are

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going through these lines, someone out there, worldwide, is performing a surgery in the lack of electricity, under lights of candles or improvised lamps, without all instruments and equipment, without respect to our very first rule in surgery - sepsis and asepsis, but still saving lives and receiving a smile from saved patients. Yes, there are tears and anger involved in every day of their work, but that smile… that is a non-describable wind blowing into their back, pushing them forward. Another day, another patient, another outcome…

During our wartime experience, we saw many of the injuries for the very first time. We were in the constant need of equipment such as fixators and had to improvise creating our own called "Sarajevofix" which was made from variety of accessible materials, some of which have not been clinically tested. On two occasions we had to perform amputation of a leg and at the same time do a Caesarean section delivering twins. Unfortunately, only one of the babies was born alive.

As winter is approaching we cannot forget those long, cold nights, when the patients and medicals staff was freezing. Performing surgeries during that time with lightning powered by candles was extremely difficult. The poor lightning made it difficult to clamp blood vessels, and very difficult to suture or reposition fragments.

One of the constant problems that surgeons in wartime faces is establishing priorities for treatments since these are constantly changing as new patients are brought in. All surgeons do their best to apply the principles of urgency, although it is tempting to abandon these when children are at risk. There is no surgeon in the world strong enough, physically or emotionally, to set aside their feelings and not become personally involved in every case they work on.

Another significant issue which surgeons have to contend to is the fear. Conscientious fear is a part of the work of any surgeon and they become familiar with irrational fear from not fully understanding the problem which is being faced. During the time of war, all medical staff deals with two additional fears - the fear for their families and fear for their own lives during surgeries.

There are several factors which characterize surgical judgment during the time of war. Medical staff has to change standard, well-known surgical approaches and techniques and to adapt them "on the sport" without any previous plans and preparations. Coincidental techniques, discoveries and pragmatism have a significant place in everyday work. These "new" approached and techniques only supplement surgical judgment, but do not replace them. Surgical judgment becomes the outcome of the physical, emotional, intellectual abilities of the surgeon when he/she eventually disregards fear for his/her own life and well-being of his/her family. If these abilities can be sustained and surgery can be performed completely while the walls of the operating room shake and crumble under a fire, then it can be said that good wartime surgical judgment is being exhibited.

With this short note, authors would like to raise awareness on all surgical and medical staff worldwide working under wartime conditions and giving their super-human efforts to save patients. We pray to God that all of their judgments are justified at all times, as we prayed for ours…