

# Neurosurgery under siege – Stories from Aleppo and the Syrian war: A narrative article

Sir,

At the beginning of my residency, I was very optimistic about the hospital. The neurosurgical department was rich; Three professors, two consultant neurosurgeons, and three specialist. I expected a high level of education and training. The 14<sup>th</sup> Congress of the Syrian Society of Neurological Surgeons was held in Aleppo between July 8 and July 10, 2009, and welcomed top international speakers such as Professor Yoko Kato and Joachim Oertel.

As the war began, the number of qualified faculty decreased. The difficulty of transportation increased, leaving isolated residents facing the fact that they themselves must deal with very difficult cases solely based on telephone-mediated instructions and tips, without direct supervision. That was extremely frustrating; nonetheless, worse was to come; after very short time, the majority of senior neurosurgeons left the country. However, most residents were becoming more confident to do some hard cases. As medics, we would go to sleep hoping that when we woke up, the previous day would turn out to have been only a nightmare.<sup>[1]</sup> The environment of war is horrible; every single day, one is forced to deal with the unexpected and should be able to deal with the impossible. With the increasing numbers of injured patients, it was important to operate quickly and there were often very complicated cases of trauma. Due to extremely limited resources, we had to decide when to do nothing. As the cases went over and above our experience and abilities, it became very clear that we must try to help or let the patient die.

The motto of “No fear!” was developed. The time of fear is over. In the 1<sup>st</sup> year of residence, we only faced one case of venous sinus bleeding during posterior fossa tumor surgery. At that time, the surgeon, who was highly qualified professor, was unable to stop a sudden and massive dural sinus bleeding ending in the patient’s death. With this unforgettable experience, we had to face a case of a patient with a penetrating injury following an explosion. The patient had multiple dural lacerations, 4 of them included venous sinuses. The dural sinus bleeding was massive. The rule of stopping bleeding with the finger is the only

effective method in such cases. After many stitches, the venous sinuses were repaired! Now, it sounds impossible to rescue such a patient, but it was really done! I was very proud of my team and myself for confidently being able to deal with other similar cases.

A lack of surgical material and equipment put more pressure on the surgical team. Dura grafts were unavailable, and also the number of demanding cases was huge. Hemostatics were very limited, and stopping bleeding with the finger was the only way to do it. It was a stroke of luck if a monopolar could be found! That forced us to be more creative! One lesson learned was to use bone dust mixed with blood instead of bone wax; interestingly, this seemed to be very applicable and usable.

Many times, we were forced to use dental or ophthalmic instruments due to the lack of proper instruments! Furthermore, we had to create some instruments ourselves! With the help of ironworker, we managed to design a burr-hole drill.

The navigation system was essential to help locate and withdraw shrapnel and bullets. This navigation was embedded inside heads of the neurosurgical team and is based on two-dimensional computed tomography scan. With repeated practice and training, this facility turned into very effective substitute to the navigation system used worldwide.

The war is horrible, hard, and sad. We lost some colleagues either due to capture or murder. The severity of everyday life combined with the availability of morphine and lack of control leads a few colleagues to misuse this medication. Psychological care was of course a nonavailable luxury.

Needless to say, the war in Syria is the worst thing that I could have expected. It is a monster destroying the country, leaving effects that are difficult to ever repair. As David Nott said “Syria itself is really, I would say, at the pinnacle of the worst possible humanitarian crisis, surgical crisis, that I’ve ever been involved in.”<sup>[2]</sup>

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## Conflicts of interest

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## References

1. Attar S. The hell of Syria's field hospitals. N Engl J Med 2016;374:2205-7.
2. Available from: <http://edition.cnn.com/2016/12/14/health/david-nott-war-surgery-training-syria/>. [Last accessed on 2017 Mar 27].

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