

## Introduction to the 7th focus-on issue devoted to disaster- and military surgery

S. Lennquist · F. Turegano

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This focus-on issue includes two review articles from world-leading experts on two very important topics, fluid resuscitation and vascular trauma, followed by three papers on missile- and fragment injuries, one paper on the management of retained weapons, one paper reporting experiences from a major civilian incident and one letter to the editor.

The first review article by Ken Mattox, USA [1] is a thorough and comprehensive review of fluid resuscitation in trauma and reflects on the sequential and evolutionary changes in our concept of resuscitation, crystalloids, blood and blood products administration, level of blood pressure in hypotensive post-traumatic patients, and outcomes in such patients. The author finally addresses the current standards, best practice and concerns relating to post-traumatic fluid resuscitation.

The second review, written by a well-recognized group of authors with Juan Asensio (USA) as first author [2], is a historical review describing how experiences from wars in the last two centuries significantly have contributed to the management of vascular injuries. In spite of the extensive experience collected during the two world wars, with the advances in surgical techniques in many fields of trauma, it was not until in the beginning of the Korean war that a group of brave surgeons abandoned the established standard not to perform vascular repair during primary surgery in the field, and the first series of successful primary repair was reported from the well-known MASH 8055 unit. This

started a new era and at the end of the Korean War, the rate of amputation in arterial injuries had gone down to 13 % compared to 40 % in WWII. This development continued during the Vietnam War, where also techniques such as temporary vascular shunts and endovascular repair were introduced. This review illustrates the importance of that we as surgeons, despite the devastating effects of war on human life and health, put effort in collecting and analyzing the experiences from the management of these very severe injuries for the benefit of our civilian trauma patients.

The two following papers by Hornez et al. [3] and Ünlü et al. [4] report experiences from recent armed conflicts, the first one from a French team working in a refugee-camp, treating refugees from the Syrian war, and the second one from a role two NATO hospitals in Jordan. Both papers emphasize the new pattern of injuries consequent to increased used of explosive devices, resulting in an increasing multiplicity of injuries with increased devitalization caused by high energy and need of effective primary management to avoid secondary complications.

This requires adjustment of facilities and methodology to cope with this need. Secer et al. [5] report a series of missile injuries in the posterior intracranial fossa. The series is small, but these injuries are rare. The authors conclude from the experiences from this series that the limited volume of the posterior fossa involves a risk of rapid neurological deterioration and death, why early surgical intervention and close postoperative follow-up is considered essential.

Kong et al. [6] report a series of patients with retained weapons, or parts of weapons, from civilian practice in South Africa. The majority of these patients arrive in a circulatory stable position and the author's advice is not to try unplanned removal of the retained devices under less controlled conditions, but instead take the time to do careful

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S. Lennquist (✉)  
Linköping, Sweden  
e-mail: lennquist@telia.com

F. Turegano  
Madrid, Spain  
e-mail: fturegano.hugm@salud.madrid.org

imaging before extrication that should be done under well-planned and controlled conditions.

Koning et al. [7] report from the Netherlands the results from the response to a fire in a nursing home, using the standardized protocol for reporting from major incidents, previously published in *EJTES* and adapted by ESTES' section for Disaster and Military Surgery [8, freely available on SpringerLink]. The Netherlands has access to a unique facility, the Major Incident Hospital [9], which normally not is used for ordinary health-care, but can be activated with very short notice in case of a major incident. In this case, this facility was capable to receive 46 patients from a fire in a nursing home, nine of them needing intubation and ventilator treatment. No patient was lost in this incident but the thorough evaluation of the result of response identified (as always, when it is done properly) fields for potential improvement.

Finally, this focus ends with a letter to the editor [10] with comments to a paper from our previous focus-on. The author comments the paper by Riddez [11] on the principles of treatment of “wounds of war in the civilian sector” with a review of the basic principles for treating wounds caused by explosive devices as these used in recent wars: high energy with multiple fragments, devitalized tissue and contamination. Even if these principles are rather simple—since they have to focus on simplicity—the importance of applying them has been clearly and repeatedly shown and as the author of this letter emphasizes, it is important that this message is spread to every surgeon. With the continuous spread of global terrorism, this is something that every surgeon can be faced with everywhere and at any time.

So, summarizing this focus-on, it illustrates well the connection and close relationship between what we call “Disaster”- and “Military” surgery: the injuries are in many scenarios the same and the conditions under which they primarily have to be taken care of have much in common. This means that experiences should be shared and exchanged, and research, development, education and training can in many parts be coordinated. This is one of the main goals for this section within ESTES and we hope

that this forum—with so far one focus-on issue per year since ESTES was founded—can continue to be as active as it has been until today.

**Conflict of interest** S. Lennquist and F. Turegano declare that there are no conflicts of interest.

## References

1. Mattox KL. The ebb and flow of fluid (as in resuscitation). *Eur J Trauma Emerg Surg*. 2015. doi:[10.1007/s00068-014-0437-0](https://doi.org/10.1007/s00068-014-0437-0).
2. Asensio JA, Petrone P, Pérez- Alonso A, et al. Contemporary wars and their contribution to vascular injury management. *Eur J Trauma Emerg Surg*. 2015. doi:[10.1007/s00068-014-0430-7](https://doi.org/10.1007/s00068-014-0430-7).
3. Hornez E, Ramiara P, Mocellin N, et al. Surgical management of Syria's war casualties: experience from a French surgical team deployed in the Zaatari refugee camp (Jordan). *Eur J Trauma Emerg Surg*. 2015. doi:[10.1007/s00068-014-0424-5](https://doi.org/10.1007/s00068-014-0424-5).
4. Ühli A, Cetinkaya RA, Ege T, et al. Role 2 military hospitals: result of a new trauma concept on 170 casualties. *Eur J Trauma Emerg Surg*. 2015. doi:[10.1007/s00068-014-0472-x](https://doi.org/10.1007/s00068-014-0472-x).
5. Seçer M, Ulutaş M, Alagöz F, et al. Penetrating shrapnel injuries of the posterior fossa. *Eur J Trauma Emerg Surg*. 2015. doi:[10.1007/s00068-014-0481-9](https://doi.org/10.1007/s00068-014-0481-9).
6. Kong V, Khan Z, Cacala S, et al. Retained weapon injuries: experience from a civilian metropolitan trauma center in South Africa. *Eur J Trauma Emerg Surg*. 2015. doi:[10.1007/s00068-014-0405-8](https://doi.org/10.1007/s00068-014-0405-8).
7. Koning SW, Ellerboek PM, Leenen LPH. Indoor fire in a nursing home: evaluation of the medical response to a mass casualty incident based on a standardized protocol. *Eur J Trauma Emerg Surg*. 2015. doi:[10.1007/s00068-014-0446-z](https://doi.org/10.1007/s00068-014-0446-z).
8. Lennquist S. Protocol for reports from major accidents and disasters. *Int J Disaster Med* 2003;1:79–86 (re-published in *Eur J Trauma Emerg Surg*. 2008;34:486–92. doi:[10.1007/s00068-008-8806-1](https://doi.org/10.1007/s00068-008-8806-1)).
9. Marres G, Bemelman M, van der Eijk J, et al. Major incident hospital: development of a permanent facility for management of incident casualties. *Eur J Trauma Emerg Surg*. 2009;35:203–11.
10. Donnelly EE. Wounds of war in the civilian sector: principles of treatment and pitfalls to avoid (*Eur J Trauma Emerg Surg* (2014) 40:461–468). *Eur J Trauma Emerg Surg*. 2015. doi:[10.1007/s00068-014-0480-x](https://doi.org/10.1007/s00068-014-0480-x).
11. Riddez L. Wound of war in the civilian sector: principles of treatment and pitfalls to avoid. *Eur Trauma Emerg Surg*. 2014;40:461–8.