INTERNATIONAL JOURNAL OF ORTHOPLASTIC SURGERY

Arnež, ZM. Definition and History of Orthoplastic Surgery. *International Journal of Orthoplastic Surgery.* 2019; 2(2), pp. 72–73. DOI: https://doi.org/10.29337/ijops.43

EDITORIAL

Definition and History of Orthoplastic Surgery

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Keywords: orthoplastic surgery; trauma; lower leg open fractures; organization of service

Dear Sir,
The author of this Letter disagrees with much of the content of the Editorial by Scott Levin [1], in particular with the definition and the history of orthoplastic (OS) surgery.

Definition of OS

In his 1993 article, Levin defined the OS as "the principles and practices of orthopedic and plastic surgery applied to a clinical problem either by a single provider, or team of providers working in concert for the benefit of the patient."

This definition is misleading and inaccurate. It implies that surgery, done by any surgeon (orthopedic, plastic, general, trauma, etc.) alone or by a group of surgeons, who "apply the principles and practices of orthopedic and plastic surgery to a clinical problem," qualifies as OS. Instead, OS is a team-work of two surgical teams (composed of one or more surgeons) specialized in the orthopedic and plastic surgery, who work side-by-side, each one performing one or more specific pre-defined tasks, offering a 24/7 service for acute trauma patients.

Dealing with acute long bone trauma and limb salvage requires around-the-clock existence of orthopedic and plastic surgery services. A single surgeon, even if trained in the two specialties, cannot deal with multiple traumatized patients, reduce the operating times and resolve post-operative (microvascular) complications, teams of surgeons (orthopedic, plastic, microvascular) can.

Organization of work permitting synchronized work of two or more teams of different specialties in the acute set-up is a significant challenge. From this reason, OS is performed in centers where such services are available at an expert level. Approaching acute trauma with organized collaboration between orthopedic and plastic surgery obviates delays in treatment and leads to better outcomes as evidenced by the BAPRAS/BOA standards experience in the UK.

Oncologic reconstructions, composite, and non-acute microsurgical reconstructions, on the other hand, are planned operations. Since they do not represent a surgical emergency, as limb salvage, they do require the presence of two or more different surgical teams but not the existence of orthopedic and plastic services round-the-clock.

History of OS surgery

An organized collaboration of orthopedic and plastic surgeons in the treatment of acute trauma had been practiced long before Scot Levin's definition of OS was published in 1992 [2, 3].

The authors of this Letter had the privilege to work in Marko Godina's microsurgical team in Ljubljana from 1977 until his untimely death in 1986. Based on his personal experience, he wishes to bring to attention some forgotten information about the history of OS as we lived it in Ljubljana.

As explained in Godina's "Thesis on the management of injuries to the lower extremity" [2], the main problem, in the early 1970s and before, was the lack of understanding that complex injuries to the lower leg required simultaneous early care by two surgical specialties, orthopedic and plastic surgery. To achieve such care required a new type of emergency trauma organization aimed at bringing together the two services to perform the combined treatment 24 hours per day, seven days per week [2, 3]. In Ljubljana (Slovenia) such organized collaboration was initiated by Marko Godina in 1976 [2]. Since 1979, a 7/24/365 service has been available for the treatment of acute (lower and upper extremity) trauma [2]. The service involved trauma/orthopedic and plastic surgeons and the Microsurgery team (surgeons of different specialties, mainly plastic surgeons, trained in microsurgery and experienced in replantation and free tissue transfer) [3]. The outcomes of such OS approach are well known to plastic and orthopedic surgeons all over the world from Godina's corner-stone article in 1986 [4]. The organization of such a service was described in Clinics of Plastic Surgery in 1991 [5]. This "Ljubljana" concept of two teams of surgeons, orthopedic and plastic, working together with acute trauma cases from the first visit in emergency department to final full weight-bearing, doing what each specialty knows best, has been popularized in Europe and USA in conferences and through many observers and fellows staying with us before and after Godina's death.

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The original Godina's idea about the preference of "early treatment" of open fractures is still valid, only the "time window for early treatment" has been safely widened, after NPWT had been introduced, from 72 hours to 7 days after injury, which makes planning of treatment, postoperative recovery, and rehabilitation easier for the surgeon and the patient [6, 7]. Also, the patient's involvement in the decision-making process leads to better satisfaction with the outcomes [8].

In conclusion, the history of OS is longer than the history of the term itself. The concept has undergone important improvements during the years. OS dealing with acute open fractures is difficult to organize since it involves all levels of public health systems, from the site of the accident to regional hospitals and specialist (trauma) centers. It has to be agreed upon and accepted by all stakeholders, as is the case in the UK, to be able to deliver better outcomes.

History is essential when it is based on facts and not on interpretations. Much also depends on how far back one is investigating. With time, "what and when" often becomes more important than "who."

OS has not yet been universally accepted and, in the majority of countries, not fully reimbursed. There is still much work to be done.

Funding Statement
The author has no funding source to declare.

Competing Interests
The author has no competing interests to declare.

Author Contributions
The author, Zoran Marij Arnez wrote and edited the present letter.

Guarantor
Zoran Marij Arnez is the guarantor.

References
1. **Levin, LS.** Editorial. *International Journal of Orthoplastic Surgery*; 2018. DOI: https://doi.org/10.29337/ijops.25
2. **Godina, M.** A thesis on the management of injuries to the lower extremity. Ljubljana: Prešernova družba; 1991.
3. **Zupanič Slavec, Z.** Zgodovina zdravstva in medicine v Sloveniji. Kirurške stroke, ginekologija in porodništvo. *Ljubljana, Slovenska matica: Znanstveno društvo za zgodovino zdravstvene culture Slovenije*. 2018; 126–148.
4. **Godina, M.** Early microsurgical reconstruction of complex trauma of the extremities. *Plast Reconstr Surg*. 1986; 78: 285–292. DOI: https://doi.org/10.1097/00006534-198609000-00001
5. **Arnež, ZM.** Immediate reconstruction of the lower extremity—an update. *Clin Plast Surg*. 1991; Jul;18(3): 449–57.
6. **Colen, DL, Colen, LB, Levin, LS** and **Kovach, SJ.** Godina's Principles in the Twenty-First Century and the Evolution of Lower Extremity Trauma Reconstruction. *J Reconstr Microsurg*. 2018 Oct; 34(8): 563–571. DOI: https://doi.org/10.1055/s-0037-1607348
7. **Qiu, E, Kurlander, DE** and **Ghaznavi, AM.** Godina revisited: a systematic review of traumatic lower extremity wound reconstruction timing. *J Plast Surg Hand Surg*. 2018 Jul; 2: 1–6.
8. **Arnež, ZM, Ramella, V, Papa, G, Galici, S, Murena, L, Gulli, S** and **Stocco, C.** The sooner, the better? Patients' satisfaction following orthoplastic treatment of lower limb open fractures within and after one week from injury. *J Plast Reconstr Aesthet Surg*. 2019 Apr; 9. [Epub ahead of print]. DOI: https://doi.org/10.1016/j.bjps.2019.03.025

How to cite this article: Arnež, ZM. Definition and History of Orthoplastic Surgery. *International Journal of Orthoplastic Surgery*. 2019; 2(2), pp. 72–73. DOI: https://doi.org/10.29337/ijops.43

Submitted: 06 May 2019 **Accepted:** 28 May 2019 **Published:** 24 June 2019

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