Civilian Gunshot Injuries

Editorial Comment

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More than 10 years ago, *Clinical Orthopaedic and Related Research*® published a symposium on civilian gunshot injuries (GSIs). At that time, the reported annual incidence of civilian GSIs in the United States was 58,841, according to the Centers for Disease Control and Prevention (CDC). Sadly, by 2012, the annual incidence of civilian GSIs in the United States had risen to 73,883, according to the CDC. This staggering increase in the prevalence of civilian firearm injury is quite troubling. The swell of firearm injuries is even more alarming when we realize that the prevalence of civilian GSIs in the United States during the past decade has far exceeded the gun-related wounds associated with several major American military conflicts during the same period of time. Although much of our knowledge on the management of patients with these injuries has been derived from military conflict, it is interesting to note that during the first 7 years of Operation Iraqi Freedom, the number of American soldiers killed (4,400) corresponded

approximately to the number of American civilians killed with guns every 7 weeks [2]. Clearly, it is time for us to not only reconsider the musculoskeletal implications of the civilian GSIs, but to explore the low-velocity/low-energy ballistic injuries that are more pervasive in the civilian setting.

Civilian GSIs are not solely a problem of inner city ghetto inhabitants, the economically and/or socially underprivileged, or outlying criminal groups who frequently disregard U.S. laws. If the far-too-frequent recent catastrophic public firearm tragedies have taught us anything, it is that civilian GSI impacts everyone in the United States regardless of socioeconomic status, education, religious leanings, age, or gender.

A substantial number of civilian GSIs involve the musculoskeletal system. Therefore, it is imperative that orthopaedic surgeons across all subspecialties familiarize themselves with the principal concerns relevant to civilian GSI that may affect patient care.

In previous years, the clinical research that directed the treatment of GSI patients was predominantly derived from the high-velocity, high-energy, military experience, even though most civilian GSIs are caused by handguns, which tend to cause low-velocity, low-energy injuries. Additionally, the earlier military and limited civilian ballistic wounding literature consisted primarily of poorly controlled, retrospective clinical series that were difficult to validate. These studies often generated as many questions as they did solutions. The scientific papers in this symposium reflect a concerted effort to address more systematically many of the lingering musculoskeletal issues associated with civilian GSIs. Among these are papers that attempt to validate a novel civilian GSI classification system [1], determine the optimal acute antibiotic or fluid management of these patients [4],

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Fig. 1 Dr. Lindsey.

Fig. 2 Dr. Gugala.

delineate the parameters associated with civilian GSI spinal cord injury outcomes [5], and establish the efficacy

of various upper and lower extremity civilian GSI fracture stabilization techniques [3].

We (Figs. 1, 2) envision rapid technological and social advances in the near future that will help define our civilization. Let us hope that someday, we will find ways to meet our needs for survival, protection, and sport without the necessity for firearms, or at least, without any of their negative aspects presently affecting us all. Until that time, as with child abuse, motor vehicle accidents, or devastating athletic injuries, orthopaedic surgeons must do all that we can to better understand the unique nature of the musculoskeletal problems associated with civilian GSIs, including establishing best practices for patient care, as well as developing and advocating measures for injury prevention.

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