



**A magnified image of the lateral radiography of the left leg where intraosseous infusion (IO) was given. The arrows indicate early changes of periosteal reaction secondary to needle insertion and infusion and the black square indicate the part of the bone with cystic changes.**

Intraosseous (IO) access is a widely used alternative for administering fluid in the emergency situation when traditional intravenous accesses are not available, especially in babies or children.

In 1922, CK Drinker (Harvard University) described the intraosseous space as a non-collapsible vein as an alternative for vascular access after examining the circulation of the sternum and showing that fluids infused into the bone marrow were quickly absorbed into the central circulation.<sup>1</sup> Subsequently others including the use of dye test confirmed connection of the IO space with the systemic circulation. Papper in 1942 showed that the circulation times for fluids administered by IO and intravenous routes were nearly identical.<sup>1</sup> Fluids and medications given by the IO route reach the central circulation within one second, equivalent to the speed of intravenous infusion.<sup>1</sup>

Sternal IO infusion was widely used during World War II and was considered a standard practice for the management of haemorrhagic shock in severely wounded soldiers.<sup>1</sup> However, this practice did not carry over into civilian use. The rediscovery of IO access is attributed to James Orłowski, an American pediatrician. While working in India during a cholera epidemic, he observed the use of IO access to save patients in whom traditional intravenous access was difficult or impossible. In his famous editorial, "My Kingdom for an Intravenous Line," he advocated the use of IO infusion in the paediatric patients.<sup>2</sup> Since the late 1980s, IO access has become a standard of practice. However, IO use in the adult patients remains limited.<sup>1,3</sup>

## REFERENCES

- 1: Wayne MA. Adult Intraosseous access: An idea whose time has come. *Isreali J Emerg Med.* 2006; 6: 41-5.
- 2: Orłowski J. My kingdom for an intravenous line. *Am J Dis Child* 1984; 138:803.
- 3: Lavis M. Pre-hospital adult intraosseous infusion. *Prehospital Immediate Care* 1999; 3:89-92.

**Note:** Supplementary text included to enhance the education value