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### Original Research Article

## Delayed Sternal Closure after Cardiac Surgery: A Review Study

Sohrab Negargar\*

<sup>1</sup> Professor of Anesthesiology and Critical Care, Cardiovascular Research Centre of Tabriz University of Medical Sciences, Tabriz, Iran

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### ABSTRACT

Delayed sternal closure [DSC] has been shown to be a common strategy, when sternal closure resulted in a negative effect on cardiac and respiratory function. This strategy can contribute to improving cardiovascular and pulmonary adaptation with a positive effect on cardiac mechanics and breathing in order to hemodynamic stability. Due to the importance of the subject in the current study we reviewed published literature related to delayed sternal closure after cardiac surgery in children and adults, definition and history of the subject, prevalence, its relationship with the circulatory and respiratory system, sternal closure time, indications and risk factors, complications and mortality rate. Literature review showed that DSC is an effective method in patients with severe reduction in cardiac output, respiratory failure, uncontrolled bleeding, arrhythmia and myocardial edema after on-pump cardiac surgery. DSC is more common in infant and pediatric cardiac surgery than in adults. However, surgeons need to consider the correct use of this strategy, physiological changes, and patient management when the sternum is left open, as well as the consequences of DSC, including infection at the surgical site. In general, the literature shows an acceptable rate of complications and mortality if this technique is used properly, however, due to the conflicting results of various studies in this field, the multi- institutional researches is recommended in order to accurately identify of the related postoperative processes.

**Keywords:** Delayed sternal closure [DSC], Cardiac surgery, Sternal wound infection [SWI]

\*Corresponding Author: ORCID: 0000-002-2228-8370

E-mail: [negargars@yahoo.com](mailto:negargars@yahoo.com)