

## **Reducing Water Soluble Bone Hemostatic Agent, Was It Effective In Post-Sternotomy Wound Infection?**

**Background:** The widely utilized Bone Wax (BW) in sealing sternal wound edges is a well-known risk factor for delayed healing and post-sternotomy wound infection, and despite the variety of bone sealants available, we have little data on their effectiveness and safety in sternal wound hemostasis.

**Objective:** This study aimed to assess effectiveness and safety of water-soluble bone wax (WSW; Ostene® or Tableau Wax®) hemostatic agents as alternative for the ordinary bone wax (BW).

**Methods:** This study included 323 patients who underwent elective cardiac surgeries via median sternotomy at Kasr- Alainy, Fayoum, and Beniseuf University Hospitals through the period from January 2020 to September 2024. They were divided into two groups: Group A (the control or BW group), which had 165 patients, and group B (the WSW group), which had 158 patients. Postoperative data regarding clinical and radiological signs of wound healing and infection were gathered and analyzed.

**Results:** The WSW group had a significantly decreased incidence of superficial (12 vs. 25) and deep sternal wound infection (DSWI; 2 vs. 9), as well as a shorter hospital stay ( $5.8 \pm 3.4$  vs.  $6.7 \pm 4.5$  days). A trimonthly radiologic follow-up showed that the BW group had considerably worse sternal bone repair than the WSW group ( $p < 0.0001$ ).

**Conclusion:** Whenever necessary, topical sternal edge hemostasis could be securely and effectively done with watersoluble bone sealants with superior surgical outcomes