Bone wax

Bone wax is a waxy substance used to help mechanically control bleeding from bone surfaces during surgical procedures.

It is generally made of beeswax with a softening agent such as paraffin or petroleum jelly and is smeared across the bleeding edge of the bone, blocking the holes and causing immediate bone hemostasis through a tamponade effect. Bone wax is most commonly supplied in sterile sticks, and usually requires softening before it can be applied.

The first use of BW for hemostasis is dated back to the 18th century when modeling or candle wax was used for hemostasis. Though the pioneers in the usage of BW in craniofacial surgeries were Belloq, Professor Khristian Khristianovich Salomon and François Magendie, its first successful use in neurosurgery was demonstrated by Henri Ferdinand Dolbeau in 1864, following the extirpation of a frontal osteoma. This was further popularized by Sir Victor Alexander Haden Horsley, the father of British neurosurgery, who is often incorrectly mentioned as the inventor of BW. Originally derived from bees' wax, the currently available commercial preparation contains paraffin wax and Isopropyl palmitate in addition. The main action being mechanical tamponade, BW has found several other uses in neurosurgery, other than being a hemostatic agent. Though it is cost-effective, the use of BW is associated with several complications also, including ineffective bone healing and infection. So several other alternatives are coming up, but none has yet been able to fully replace “Horsley's wax” till date [1].

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Das JM. Bone wax in Neurosurgery: A Review. World Neurosurg. 2018 May 9. pii: S1878-8750(18)30943-4. doi: 10.1016/j.wneu.2018.04.222. [Epub ahead of print] Review. PubMed PMID: 29753076.