Sonic Activation

The aim of this paper was to investigate the local reactions due to the melting of absorbable plates and screws after trimming through smoothing by multiple sonic activation procedures (MSAP).

BACKGROUND: Drilling or smoothing by MSAP is performed for the trimming of the absorbable plates and screws for cranial fixation in children. Compared to drilling, smoothing by MSAP is suspected to more commonly cause local tissue reactions; thus, the issue was examined herein.

METHODS: For 90 children with smoothing by MSAP and 83 children with drilling procedures who underwent cranial fixation using absorbable plates and screws, the type, time of onset, and incidence of the local reactions were investigated.

RESULTS: Swelling was the most common reaction, followed by inflammatory reactions with itching, heating, skin-penetrating drainage, and pus formation. The mean time of onset of the local reaction was 10.0 ± 2.3 months after surgery. Local reactions occurred in 30% of the children in the group with smoothing by MSAP, and in 7.2% of the children in the group with drilling, showing a statistically significant difference between the two groups ($p < 0.001$).

It was concluded that drilling rather than smoothing by MSAP to change the shapes of the absorbable plates and screws in cranial fixation can reduce the local reactions [1].

1)
Cho SM, Park DH, Yoon SH, Koo YM, Chang YL. Trimming of Absorbable Plates and Screws through Smoothing by Multiple Sonic Activation Procedures Can Increase Local Tissue Reactions in Children with Cranial Fixations. Pediatr Neurosurg. 2019 Jun 19:1-5. doi: 10.1159/000500801. [Epub ahead of print] PubMed PMID: 31216552.