Objectives: This study evaluated the incidence of fractures which occurred during BSSO surgery when third molars were present or not.

Methods: Records of 127 patients who underwent bilateral sagittal split osteotomy (BSSO) surgery were retrospectively evaluated. Factors evaluated included age, gender, presence or absence of third molars during surgery, and reported occurrence of fracture during surgery. The 127 patients were separated into two groups: Group 1- those with third molars present at the time of surgery, and Group 2- those with third molars missing at the time of surgery, either congenitally missing or removed at least six months prior to surgery. The incidence rates of fracture in the two groups were analyzed using Fisher's exact test, with p<0.05 demonstrating significance.

Results: 4 patients in Group 1 (n=52) experienced fractures during BSSO surgeries. 5 patients in Group 2 (n=75) experienced fractures during BSSO surgeries. Incidence rates of the two groups were not statistically different (p=0.3). The fractures occurred with a nearly even distribution between OMFS resident-operated surgery sites and faculty-operated surgery sites.

Conclusion: No difference was demonstrated in the incidence rate of fractures during BSSO patients in those who had third molars present at the time of surgery and those in which third molars were absent. Hence, requiring a patient to undergo third molar removal at least 6 months prior to BSSO surgery may not be necessary. One surgery, with BSSO and concurrent removal of third molars, may result in less morbidity than two procedures. Experience in performing BSSO surgeries, while arguably beneficial, was not a factor evaluated in the in the reported incidence of fracture in this study.