

RESULTS

Fifty-six patients met the inclusion criteria for this study, however 2 declined to participate, (1 each from each group), while four (1 from group A and 3 from group B) were not able to complete follow up appointments, and were excluded. Fifty patients consisted of 44 male patients and 6 females participated, the median age of patients was 25.5 years, which was observed to be similar in the two groups and no statistically significant difference ($p = 0.969$). (Table 1).

Comparison of treatment outcome, arch bar versus IMFS

The median working time for placement and removal of IMFS was significantly shorter than in the arch bar ($P < 0.001$). The median maximal interincisal opening at 6 weeks were similar in both groups (IMFS - 41mm, arch bar - 44mm), and this improved further to (48mm and 47.5mm respectively) by the end of 8 weeks. Postoperative pain analysis showed no significant difference in the pain scores at 1 day and 3 ($p = 0.087$ and $p = 0.490$, respectively) in both groups. However, statistically significant higher pain score was observed in patients in the IMFS group when compared with arch bar group at the end of 3rd weeks and 6th weeks ($P = 0.015$ and $P = 0.003$ respectively).

Immediate postoperative ultrasound assessment shows a baseline gap of 1.4mm and 1.8mm for the arch bar and IMFS respectively. There was evidence of gradual bone healing in both groups at 3 and 6 weeks (Figure 4). At 6 weeks, complete hyperechoic bridging callus was observed in 2 out of every 3 patients in the arch bar and 1 in every 2 patients in the IMFS group.

The wire pricks injury or gloves perforation to the operators during arch bar fixation was found in 21 patients (57.14%) and only 1 in IMFS group ($p < 0.001$) with significant difference statistically ($p < 0.001$). On the 6th post-operative week the oral hygiene status was

poor in 69.2% arch bar patient compare to 33.3% IMFS group. Eleven (45.8%) patients in the IMFS group had screw heads covered by mucosa. Table 2.

Comparison of quality of life in the arch bars versus IMF screw group

Table 3 contains data for dichotomous variables. Patients at week 1 reported social isolation in both groups, however, patients who underwent IMFS fixation had significantly reported feeling of bad mood as the reason for isolation ($p = 0.048$), compared to those in the arch bar group who reported appearance as major reason for isolation ($p = 0.093$). In the 6th week, patients in the arch bar group reported less willingness to undergo the same treatment compared to IMFS group ($p = 0.050$).

For ordinal variable analysis (week 1), patients who had undergone IMFS treatment were significantly able to continue with a normal diet ($p < 0.0001$) compare to arch bar patients, but experienced difficulty in falling asleep ($p = 0.038$). At week 6, statistically significant difference was observed in IMFS group regarding difference they noticed in their ability to speak when compared with arch bar group ($p = 0.003$). (table 4)