



Figure 2 - Visualization of stress in dark-field circular polariscope: **A)** absence of stress; **B)** stress distribution with dental anchorage and **C)** stress distribution with skeletal anchorage.

RESULTS

The reliability of the values was confirmed by the error of method. The weighted kappa coefficients indicated that the agreements ranged from substantial to perfect. In the skeletal anchorage group, the coefficient ranged from 0.61 to 1.0 in the intraobserver, while it ranged from 0.61 to 0.88 in the interobserver analysis. In the dental anchorage group, the weighted kappa coefficients ranged from 0.61 to 1.0 in the intraobserver and from 0.61 to 0.78 in the interobserver analysis.

Table 2 shows the values of the median, first and third quartiles of the isochromatic fringe orders located in the canine radicular third in 7 regions: cervical-mesial (CM), cervical-distal (CD), middle-mesial (MM), middle-distal (MD), apical-mesial (AM), apical-distal (AD), and the apex (A). The Mann-Whitney test (with a significance threshold set at $P < 0.05$) was employed to compare the fringe orders in each region, considering both anchorage systems. The stresses on the cervical and middle third were similar ($P > 0.05$). In the apical third, the stresses associated with skeletal anchorage (medians: AM = 0.6, AD = 1.0, and A = 0.9) were significantly higher than the stresses associated with dental anchorage (medians: AM = 0.45, AD = 0.79, and A = 0.6) ($P < 0.05$).

Table 3 shows the comparison between the fringe orders originating from retraction force associated with the use of dental anchorage in the canine periradicular regions, which was performed via the Kruskal-Wallis test (significance at $P < 0.05$). Higher stress concentrations were identified in the cervical-distal (0.9), apical-distal (0.79) and apex (0.6) regions. The stresses in these areas did not differ, but were significantly higher than in the cervical-mesial (0.28), middle-mesial (0.28) and middle-distal (0) regions. In the apical-mesial region (0.45), the stress was lower than in the cervical-distal and apical-distal, however, it was not statistically different from the apical region stress.

Table 4 shows the comparison, via the Kruskal-Wallis test (significance set at $P < 0.05$), between the fringe orders in the canine periradicular regions originating from retraction force associated with the use of skeletal anchorage. The highest stresses were located in the apical-distal (1.0), apex (0.9), cervical-distal (0.79) and apical-mesial (0.6) regions. The stresses in these areas did not differ, but were significantly higher than in the cervical-mesial (0.28) and middle-distal (0) regions. In the middle-mesial region (0.28), the stress was lower than in the apical-distal (1.0), apex (0.9) and cervical-distal (0.79) regions, however, it did not statistically differ from the apical-mesial (0.6) region.