RECURRENT ANKLE SPRAINS IN THE VISUALLY IMPAIRED: HIDDEN IMPACT ON POSTURAL CONTROL

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Background and Aims

Visually impaired individuals are at increased risk of balance disorders and falls due to reduced visual input. Recurrent ankle sprains are a common complication in this population and may result from impaired proprioception and postural instability. Despite the frequency of these injuries, few studies have objectively evaluated the balance and joint stability in visually impaired patients with chronic ankle instability. To assess postural control and ankle proprioception in visually impaired patients with a history of recurrent ankle sprains, using validated clinical scales and static posturography.

Methods

We conducted a cross-sectional study involving 30 adult patients with low vision (visual acuity <3/10 in the better-seeing eye) and at least two ankle sprains in the past 12 months. The following assessments were performed: Static posturography on a force platform (firm and foam surfaces, natural visual condition), Cumberland Ankle Instability Tool (CAIT) for functional ankle instability, Berg Balance Scale (BBS) for static and dynamic balance, Timed Up and Go (TUG) test to evaluate fall risk, Ankle joint position sense test to assess proprioceptive accuracy.

Results

The mean age was 42.3 ± 11.2 years; 70% had bilateral ankle instability. The mean CAIT score was 15.2 ± 3.4 (cutoff <24 indicating instability). The mean center of pressure sway area increased significantly on foam (410 mm² vs. 275 mm² on firm surface, p 13.5 seconds. The mean ankle repositioning error was 4.1° (normal <2°).

Conclusion

Visually impaired individuals with recurrent ankle sprains demonstrate significant postural and proprioceptive deficits. These findings highlight the need for tailored rehabilitation programs including balance training and proprioceptive re-education to reduce recurrence and fall risk in this vulnerable population.

Keywords: Visual impairment, Ankle