

PROSPECTIVE EVALUATION OF CRANIOFACIAL PRESSURE IN FOUR DIFFERENT CERVICAL ORTHOSES.

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Cervical collars play a role in the long-term treatment of cervical spine injuries. Pressure ulcers are one of the potential complications. We previously reported on three patients who developed pressure ulcers of the scalp while wearing cervical collars. The pressure exerted by different collars was measured to determine whether this was a significant factor in the clinical problem we observed. **METHODS:** Four brands of cervical collars (Stifneck, Philadelphia, Aspen, and Miami J) were tested in 20 normal volunteers. Pressure was measured at the occiput, mandible, and chin. Opinions on comfort were also collected. **RESULTS:** The Stifneck collar exceeds capillary closing pressure (CCP) for most contact points. The Philadelphia collar exposes the wearer to high pressures when supine compared with the upright position ($p < 0.001$). The Aspen and Miami J collars exerted pressure well below CCP. The subjective comfort (scale from 0 (poor) to 5 (best)) ratings were: Stifneck = 0.85, Philadelphia = 3.00, Aspen = 3.80, and Miami J = 3.45. **CONCLUSIONS:** We recommend use of "patient-friendly" collars such as the Aspen or Miami J because of their favorable skin pressure patterns and superior patient comfort. These collars should potentially reduce the incidence of soft-tissue complications and improve patient compliance.

SELECTED QUOTATIONS

Results

"Testing of the Newport [Aspen] collar revealed that, when measured at the mandible and chin sites, all pressures were well below CCP." (Pg. 716)

Conclusions

"In supine subjects, the Philadelphia collar exposed wearers to high pressures. We feel that this contributed significantly to our patients' problems with pressure ulcers...When the objective and subjective data are combined, the Newport [Aspen] collar appeared to have the best blend of characteristics." (Pg. 719)