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Treatment of Craniofacial Asymmetry With Dynamic Orthotic Cranioplasty

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Dynamic Orthotic Cranioplasty (DOC) was developed to treat craniofacial deformities associated with positional plagiocephaly. This investigation describes the treatment of more than 750 patients with the DOC Band since 1988. All patients undergoing DOC treatment were fit with a custom fabricated orthosis made from a plaster impression taken from the infant's head. When the orthosis was applied, the corrective pressure was directed to hold growth at the calvarial prominences and redirect symmetrical growth. A detailed medical history was obtained and anthropometric measurements were taken at start, exit, 12, 18, and 24 months follow-up. This information was recorded in a database created in Microsoft Excel. Mean length of treatment was 4.3 months with an average entrance age of 6.9 months. Analysis of anthropometric data showed significant reduction in mean cranial vault, skull base, and facial asymmetries. Correction of the more difficult skull base was documented with computed tomography. Our anthropometric and clinical observations document complete or near complete correction of asymmetry for a wide variety of head shapes. Based on the results of this investigation, we are able to support the earlier claims of our pilot study, which concluded that DOC is effective in the treatment of positional plagiocephaly.