Efficacy of Conservative and Cranial Orthotic Therapy in over 4000 Patients Treated for Positional Plagiocephaly over a Five-Year Period

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INTRODUCTION: Positional plagiocephaly is a common condition with controversy regarding optimal treatment modality. Treatment options include repositioning exercises, watchful waiting, cranial molding orthotics, and in rare cases surgery. Conservative therapy with repositioning therapy (RT) +/- physical therapy (PT) is known to be successful in a large portion of these patients[1]. Recently an article in British Journal of Medicine[2] featured in Wall Street Journal stated watchful waiting is as effective as helmet therapy. Our aim was to determine the effectiveness of helmet therapy for positional skull deformation in a single providers practice.

MATERIALS AND METHODS: 4248 patients were seen and evaluated for positional plagiocephaly were assigned either conservative treatment (RT +/- PT, n=3186) or Helmet therapy (n=1062). Patients assigned to helmet therapy were treated by a single orthotist using the single orthotic manufacturer. Patients were followed until complete correction (Diagonal Difference<6, EPSR>90%, Cephalic Index 0.75-0.91, Cranial Vault Asymmetry Index<6).

RESULTS: Age at initial evaluation ranged from 3-12 months. Complete correction was achieved in 75% of patients with conservative treatment (n=3186). 25% transitioned to helmet therapy (n=1062). Average helmet treatment duration was 5 months with 95% having complete correction of deformity with a single helmet. 5% of patients required a second helmet for additional correction (n=49) with 0.01% requiring a third helmet to achieve complete correction (n=8). Risk factors for failure of conservative therapy included advanced age, torticollis, and severity of cephalic ratio and diagonal difference.

CONCLUSION: Conservative and helmet therapy can effectively treat positional plagiocephaly. In children who could benefit from helmet therapy, a single helmet fabricated by a skilled orthotist and followed by a craniofacial surgeon can correct deformational skull deformities in nearly all infants. These results are consistent with previous studies, but conflicts the BJM article. This is important, as this article can be the source of insurance denials for infants who could clearly benefit from cranial molding orthotics. Further large randomized trials would help answer this challenging question.

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