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SURGICAL OUTCOME OF ANGULAR DEFORMITY CORRECTION OF LOWER LIMBS IN RICKETS: A CROSS-SECTIONAL STUDY

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INTRODUCTION:

Rickets is a metabolic disease associated with abnormal calcium and phosphate levels that causes softness in bones and skeletal deformities. In cases of severe skeletal deformities due to rickets, surgical procedures such as guided growth surgery (GGS) and acute corrective osteotomy (ACO) are required. Although GGS is generally being considered less invasive and presenting with fewer complications compared to ACO, studies comparing the functional outcome following these two procedures are scarce. Thus, the present study aims to compare the functional and radiological outcome following GGS and ACO correction of angular deformities in children with rickets.

METHODS:

A total of 8 children who had gradual GGS and 7 children who had ACO correction for angular deformities due to rickets from 2002 to 2022 were recalled for follow up. Demographic data, types of rickets, data on pharmacological treatment (if any), blood parameters (renal profile), duration taken for gradual correction (for GGS procedure), recurrence of angular deformity and post-operative complications (e.g infections, implant failure and neurovascular injury) were obtained from the medical records. Radiographic evaluation of the leg was performed to determine the tibiofemoral angle. For functional evaluation, the Active Scale for Kids (ASK) and Lower Extremity Functional Scale (LEFS) instruments were used for children below and above 15 years old respectively.

RESULTS:

In terms of the tibiofemoral angle, GGS group documented greater angle changes compared to ACO group, but the difference was not significant. In terms of functional outcomes, the overall score percentage of both groups were comparable with GGS group showing trend of higher score percentage compared to ACO group.

CONCLUSION:

Based on the study findings, it can be concluded that both guided growth surgery (GGS) and acute corrective osteotomy (ACO) procedures resulted in similar radiographic and functional outcomes for the treatment of rickets in children. Therefore, the choice of surgical intervention can be made based on the patient's individual circumstances and the surgeon's preference.

REFERENCES:

1.Creo AL, Thacher TD, Pettifor JM, Strand MA, Fischer PR. Nutritional rickets around the world: an update. *Paediatr Int Child Health*. 2017;37(2):84-98.

2. Reddy KA. Prevalence of rickets: A clinical study. *Int J Contemp Pediatr*. 2020;7(2):ijcp20200684.

3. Gentile C, Chiarelli F. Rickets in Children: An Update. *Biomedicines*. 2021 Jun 27;9(7):738.