Body Habitus and Hypermobility in Children with Mitral Valve Prolapse

ZeynepİbiŞ, ElifGünay, BernaŞaylanÇevik, FigenAkalın
Marmara University Faculty of Medicine, Department of Pediatric Cardiology

Introduction:
Mitral valve prolapse (MVP) is often an isolated finding, however it also occurs in heritable disorders of connective tissue such as Marfan or EhlerDanlos Syndromes. An increased prevalance of MVP in patients with hypermobility syndrome was demonstrated before. In this study we investigated the anthropometric properties, asthenic body habitus and hypermobility in patients with isolated MVP.

Methods:
The study group consisted of 41 patients with MVP and 43 controls.MVP was diagnosed as superior displacement of mitral leaflets of more than 2 mm above mitral annulus during systole. None of them had associatedsystemic, cardiac or rheumatologic disease.Anthropometric measurements were obtained during physical examination. Height, weight, armspan, lower segment, anteroposterior and transverse chest diameter, chest circumference, abdominal circumference, hip circumference, sitting height, length of femur, cruris, arm and forearm were measured and Body surface area (BSA), armspan/height ratio, armspan height difference, upper segment/lower segment ratio, chest/height ratio, waist/height ratio, hip/height ratio, anteroposterior chest/height ratio were calculated. Beighton Score System (BSS)was used for assessment of joint hypermobility and Brighton criteria for benign joint hypermobility syndrome (BJHS).Echocardiography was performed in all subjects.

Results:
The study group included 15 boys and 26 girls between 5 to 20 years of age (mean=13.4±3.9; median=14 years); control group included 15 boys and 28 girls between 6 to 19 years of age (mean =12.8±3.4; median:13years). There was no significant difference in terms of age, weight, height, BSA between groups. Number of girls were higher in both groups. Armspan/height ratio and hip/height ratio were significantly higher in MVP group (p=0.034 and p=0.024 respectively). Mean hypermobility score was 1.92 ±2,09 (median 2; range 0-8), in MVP group and 1,18±1,84 (median 0; range 0-8) in control group (p=0.06). BJHS was diagnosed in 5 MVP patients and 3 healthy children. Hypermobility score negatively correlated to age in MVP gorup (p=0,05; r-0,42). Arthralgia wasalso common in MVP group (p=0.003).

Conclusion:
Body habitus was more asthenic in non-syndromic children with isolated MVP than the normal population and joint elasticity was higher despite low incidence of real BJHS. Joint elasticity becomes less evident by aging in patients with MVP. These findings suggests common pathogenetic mechanisms affecting connective tissue both in skeletal and cardiac structures.