Compression of the right ventricle by pectus excavatum in a gymnast: a case report

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Introduction: The pectus excavatum is the most common chest deformation. It is usually congenital or develops during growth. In addition to aesthetic problems, it can cause cardiac compression, breathing difficulties and constant pain. This affection may limit the practice of sports especially when a sporting career is considered.

Clinical case presentation: We report the case of gymnast girl in the national team who’s 15 years old. She complains since several months dyspnea and faintness on exertion. The physical examination revealed a mild pectus excavatum. The resting electrocardiogram showed an incomplete right bundle branch block. A 24 hour holter monitoring showed one episode of a nocturnal non sustained ventricular tachycardia composed of 12 beats with a left bundle branch morphology. Transthoracic echocardiography was normal. A stress test was conducted revealing the occurrence of a single ventricular extrasystole and dizziness at the end of the test. Cardiac MRI was realized showing a significant compression of the right ventricle by the pectus excavatum with no signs of arrhythmogenic right ventricular dysplasia. The pulmonary function was normal. Despite the mild clinical form of this pectus excavatum the cardiac impact seems significant. Temporary sports inaptitude was indicated for further explorations and therapeutic decisions. Remodeling surgery is being discussed for her.

Conclusion: Is surgery mandatory for this patient if she gives up sports? The treatment of this deformation may it allow this gymnast to continue her high level training? This case was rarely reported and underlines the importance of a working group in order to make a decision regarding this kind of pathology.

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Cardiovascular abnormalities detected in the preliminary medical assessment before the integration at the Higher Institutes of the Sport and Physical Education

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Introduction: To be integrated in the Sport and Physical Education Higher Institutes (SPEHI), the student must benefit from a standard medical assessment.

Objectives: Determine the frequency of various cardiovascular anomalies and atypical aspects observed in Tunisian students before integration in the SPEHI.

Patients and Methods: Our population was constituted of 1077 students (average age 19.5 years, sex ratio 1.3) consulted to obtain medical certificate authorizing integration at the SPEHI.

Results: The clinical examination revealed a functional systolic breath in 26 cases, a mitral regurgitation systolic breath in 4 cases and a pulmonary regurgitation systolic breath in one case. The Electrocardiogram was normal in 761 students. An incomplete Right Bundle-Branch Block in 56 students, a complete RBB in 6 cases, a first-degree Atrio Ventricular Block in 6 case, a sinus bradycardia in 30 cases, a permanent sinusal tachycardia in 42 cases, a narrow PR interval in 34 cases and Left Ventricular Hypertrophy according to Sokolow index in 18 cases and a repolarisation abnormalities in 19 cases. A Wolff Parkinson White syndrome was detected in 3 students. A case of asymptomatic induced Brugada syndrome (by Flecaine Test). Other cardiovascular abnormalities were prescribed in 48 cases: 22 Stress test, 11 rhythm recording, 3 blood pressure recording, 35 Echocardiography and electrophysiological exploration in one student. They were all normal except for one case of tiny mitral regurgitation. No anomaly imposing inability of the sporting practice was found, but a medical follow-up is essential, particularly in the case of Brugada and WPW syndrome. The previous practice of a sport seems to influence the resting heart rate (p = 0.004.), The T amplitude (p = 0.005), QRS axis (p=0.005) and the Sokolow index (p = 0.01).

Conclusion: This study suggests the interest of a systematic medical evaluation in particular cardiovascular assessment before integration at the SPEHI.