

中文題目：開放性動脈導管與嚴重二尖瓣脫垂之案例討論

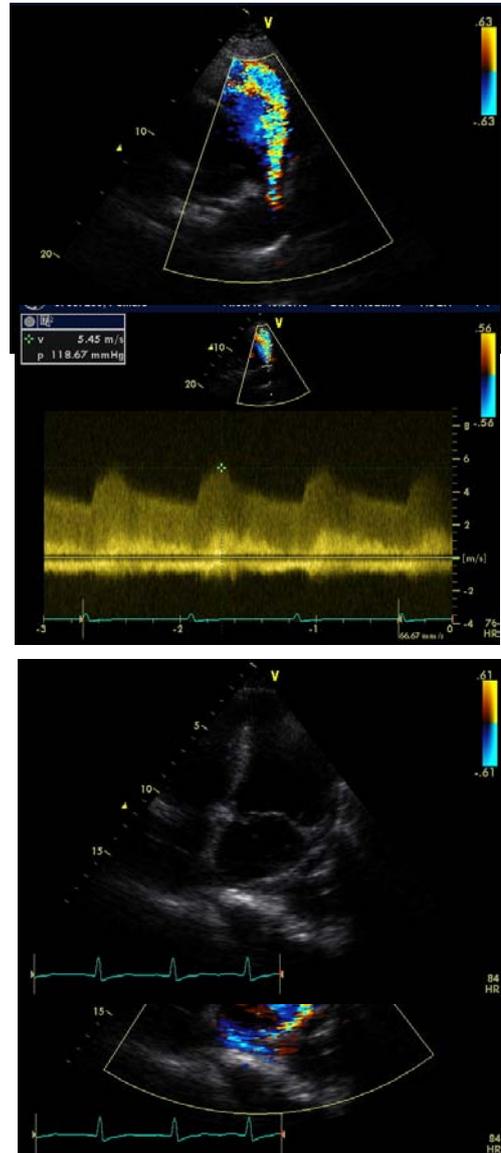
英文題目：Heart murmur all over the chest - a case with patent ductus arteriosus and severe mitral regurgitation

作者：葉宗讓¹ 蘇河名²

服務單位：¹高雄醫學大學附設中和紀念醫院 內科部，²小港醫院(委託高醫經營) 心臟內科

Case Presentation : A 46-year-old female had heart murmur history since 10 years old. Recently, she suffered from progression of dyspnea while walking. She also had intermittent palpitation and bilateral lower leg edema. She went to local medical clinic at first and then referred to Kaohsiung Municipal Siaogang Hospital outpatient clinic due to heart murmur. A transthoracic cardiac ultrasonography showed severe eccentric mitral valve regurgitation (anterior to posterior jet), moderate tricuspid valve regurgitation with pulmonary hypertension (estimated right ventricular systolic pressure: 76 mmHg), pulmonary trunk dilatation (5.2 cm) and patent ductus arteriosus (PDA) (pressure gradient: 117 mmHg, continuous flow). Cardiac catheterization confirmed severe mitral valve regurgitation and patent ductus arteriosus with significant step-up in blood oxygen saturation at pulmonary artery level (right ventricle blood oxygen saturation: 71.6%, pulmonary artery blood oxygen saturation: 85.6%) and elevated pulmonary to systemic blood flow ratio ($Q_p/Q_s = 1.715$).

Due to severe mitral valve regurgitation with heart failure and PDA, surgical intervention was considered and operation (patch repair of patent ductus arteriosus + mitral valve replacement with standard 27mm + tricuspid valve plasty) was performed successfully. During surgery, mitral valve prolapse was diagnosed. After surgery, her heart failure condition was much improved. Now, she receives regular follow-up at our outpatient clinic.



Discussion : Mitral regurgitation is a common valvular heart disease in elders. This may induce symptoms ranging from dyspnea on exertion, coughing, congestion around the heart and lungs, swelling of the lower extremities. Severe mitral regurgitation sometimes need surgical intervention. No matter is repair or replacement, both traditionally belong to open-heart surgery. During open-heart surgery, cardiopulmonary bypass is a crucial step. The presence of patent ductus arteriosus during cardiopulmonary bypass could result severe acute pulmonary edema if not known in advance, which may cause mortality. Therefore, the detection before operation is very important for all open-heart surgery candidates.

Our patient is only mid-aged but she already suffered from severe mitral regurgitation and symptoms of heart failure. She accidentally found with significant patent ductus arteriosus. As we

know, the most common complication of patent ductus arteriosus is pulmonary hypertension, which will induce elevation of left atrial pressure. Theoretically, chronic elevated left atrial pressure could result in mitral insufficiency and then progress to mitral regurgitation. However, the co-existence of patent ductus arteriosus and mitral regurgitation in adult is rare and only few case reports had mentioned before. One case report¹ had indicated the association between patent ductus arteriosus and mitral regurgitation, and the improvement of functional mitral regurgitation and heart failure after patent ductus arteriosus ligation. However, our patient not only had symptoms of mitral regurgitation but structural abnormality, which means mitral valve prolapse. Due to there was no other possible cause of mitral regurgitation in our patient, PDA was considered to be the main cause of her mitral regurgitation and heart failure. Therefore, we assumed that chronic patent ductus arteriosus might not only induce functional mitral regurgitation but also result structural mitral regurgitation.

Reference :

1. A case of adult patient ductus arteriosus with congestive heart failure and severe mitral regurgitation, *Cardiovasc Interv and Ther* (2011) 26:278–280.