Introduction: A newly diagnosed atrial fibrillation (AF) warrants a full investigation of the etiopathogenesis of this common arrhythmia. In the adult population, the most frequently associated conditions are systemic hypertension, coronary artery disease, mitral valvulopathy, congestive heart failure, and hyperthyroidism. Nevertheless, more infrequent and even rare, yet correctable, etiologies should not be overlooked.

Methods: We describe a patient who presented to our hospital with AF and who subsequently were demonstrated to patent ductus arteriosus (PDA). The patient was 56-year-old woman who presented with chest discomfort and dyspnea on exertion more three months. The ECG showed AF with ventricular response 105 bpm. Transthoracic echocardiography revealed decreased ejection fraction (20%) with global hypokinesia of left ventricular wall. Coronary angiography showed normal coronary. This findings suggested dilated cardiomyopathy with heart failure. After heart failure management with medication, systolic function was improved, and AF was converted to sinus rhythm after DC cardioversion. The AF was recurred despite several antiarrhythmic agents after two years. PDA was observed on follow up echocardiography before catheter ablation of AF. This finding was missed in previous echocardiography. We decided to prefer PDA closure instead of catheter ablation of AF. Six days after successful closure of PDA, AF was converted to normal sinus rhythm.

Result: One year later, the patient is still maintaining normal sinus rhythm without anti-arrhythmic medication.

Conclusion: There are many causes of atrial fibrillation, but it is important to identify and correct for possible causes of atrial fibrillation.