



Partial Atrioventricular Canal Diagnosed in Adulthood: A Case Report from CNHU-HKM, Cotonou

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Abstract

Partial atrioventricular canal is a rare congenital heart defect. Its diagnosis in adulthood remains exceptional, especially in countries with limited resources where early detection is not systematic. We report the case of a 22-year-old female patient, with no pathological history having consulted for stress dyspnea evolving for seven years. Clinical and paraclinical explorations had concluded to a partial atrioventricular canal. A curative surgical correction had been successfully performed. The immediate postoperative evolution was favorable, with no residual leaks or shunts. This case illustrates the diagnostic and therapeutic complexity of partial atrioventricular canals discovered in adulthood, especially in resource-limited settings. It highlights the need for early diagnosis and management, combined with appropriate technical platforms, to improve the prognosis of these rare abnormalities.

Subject Areas

Radiology & Medical Imaging

Keywords

Adult, Partial Atrioventricular Canal, Interatrial Communication, Cotonou

1. Introduction

The atrioventricular canal (AVC) accounts for approximately 4% of all congenital heart diseases [1]. In its partial form, it associates an ostium primum type atrial septal defect and a cleft mitral valve [2]. Although most often asymptomatic dur-

ing the first years of life, this condition manifests itself in adulthood [1] [3]. In Benin, where early diagnosis (antenatal and neonatal) of congenital heart diseases remains rare, patients with partial AVC are frequently identified at an advanced age with complications that may compromise optimal surgical correction [4].

We report here the first case of partial AVC in a young adult whose diagnosis was confirmed by cardiac CT scan and then operated on at the Hubert Koutoukou Maga National University Hospital (CNHU-HKM) in 2025, illustrating the diagnostic and surgical challenges inherent in a late diagnosis.

2. Observation

This was a 22-year-old female patient with no pathological history having who consulted for stage II-III exertional dyspnea progressing intermittently for 7 years associated with palpitations. The clinical examination had revealed a 2/6 systolic murmur at the pulmonary focus and a splitting of B2, associated with a murmur of mitral regurgitation at the apex. The frontal chest radiograph was unremarkable. The doppler echocardiography had objectified a 35 mm wide ostium primum type interatrial communication, with moderate central mitral regurgitation without stenosis and a non-hypertrophied and undilated left ventricle with an ejection fraction of the left ventricle preserved at 60%, preserved right ventricle function (TAPSE 22 mm) and PAPs estimated at 15 mmHg, evoking a partial atrioventricular canal (**Figure 1**).



Figure 1. Cardiac ultrasound showing 35 mm wide ostium primum interatrial communication (yellow arrow) and a non-hypertrophied left ventricle.

The cardiac CT confirmed wide interatrial communication of the lower part of the interatrial septum measuring 33 mm with dilation of the right atrium without interventricular communication and without abnormal venous return or associated pulmonary arterial hypertension (**Figure 2**).

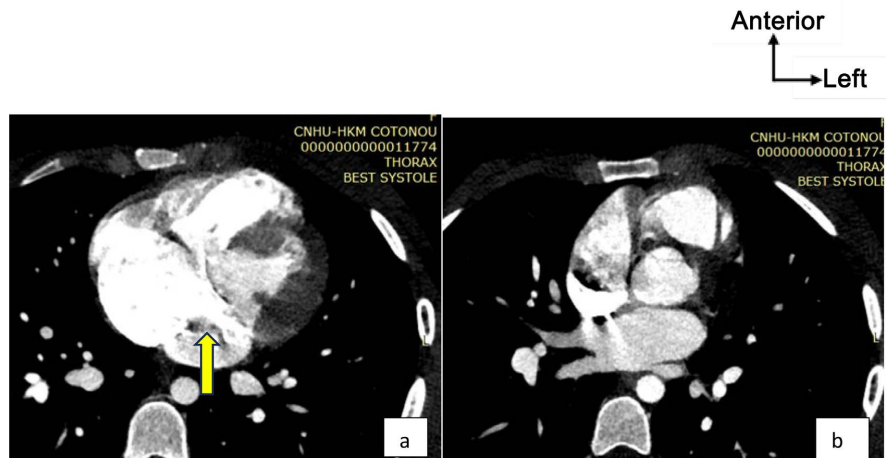


Figure 2. Cardiac CT in 4-cavity section (a) and reconstruction passing through the pulmonary veins (b) showing wide interatrial communication of the lower part of the interatrial septum measuring 33 mm (yellow arrow) with dilation of the right atrium and without interventricular communication.

A curative surgical correction of the closure of the CIA by pericardial patch, associated with mitral plastic surgery was successfully performed under extracorporeal circulation of the aorto-bicave type, via total median sternotomy and under normothermic blood cardioplegia. The immediate postoperative evolution was favorable, without leakage residue or shunt. The patient was reviewed at the third postoperative month and had no reported complications. A structured follow-up program was established, including a control cardiac ultrasound at 6 months and then annually to monitor ventricular function and the evolution of mitral regurgitation, as well as periodic ECG rhythm monitoring to detect possible arrhythmias or conduction disorders.

3. Discussion

The diagnosis of partial atrioventricular canal in our patient was relatively earlier compared to the late diagnosis in adulthood of partial atrioventricular canals reported by several authors with ages ranging between 48 years and 71 years [5]-[7] and this is related to the symptoms of dyspnea progressing intermittently for 7 years associated with palpitations. These results indicate the diagnostic delay of these congenital conditions, particularly in countries with limited resources where antenatal and neonatal diagnoses are exceptional [4] [8].

The late diagnosis of this condition is associated with complications, including fixed pulmonary hypertension, which contraindicates any curative intervention, with the occurrence of death around the age of 40 [9]. In our case, we didn't note the existence of fixed pulmonary hypertension.

Several studies conducted on surgical repair of partial AV C in adults generally agree on good surgical outcomes, with non-significant operative mortality [6] [10]. However, late diagnosis and management can lead to several complications, including arrhythmias secondary to dilatation and remodeling of the heart cham-

bers, increased need for annuloplasty or mitral valve replacement, with an increased risk of complete atrioventricular block. The need for a reintervention in adults is a major concern, with 76% and 21% of patients respectively requiring a new intervention for mitral leakage and obstruction of the left ventricular ejection tract between 5 and 10 years after the operation, compared to only 5% and 6% for the same complications in the pediatric study [10] [11]. Thus, early repair in childhood is still the preferred option with an optimal surgical age between 1 and 2 years [11]. These data call for the establishment of a system for the early detection of congenital heart diseases by antenatal fetal echocardiograms and birth screening saturometry. This also calls for an improvement in radiological, surgical and anesthetic technical platforms for the early management of these conditions.

Long-term follow-up after partial atrioventricular canal repair requires close monitoring, due to the risk of rhythm and conduction disturbances as well as recurrence of mitral regurgitation. Data from the literature confirm high survival rates (96% at 10 years and 94% at 30 years) with a significant incidence of reoperations related to residual left atrioventricular valve regurgitation or persistent intracardiac shunts [12]. In this context, regular follow-up combining serial echocardiography and rhythm monitoring is recommended in order to detect these complications early and optimize the functional and vital prognosis of patients [13].

4. Conclusion

The discovery of a partial atrioventricular canal in adulthood is rare. Although the transthoracic ultrasound can make the diagnosis, the cardiac CT makes it possible to confirm this and look for associated abnormalities. This case highlights the diagnostic and therapeutic complexity of partial atrioventricular canals identified in adulthood, particularly in resource-limited settings, and emphasizes the need for early detecting and management, supported by adequate infrastructure, to improve the therapeutic outlook and prognosis of these rare abnormalities.

Conflicts of Interest

The authors declare that they have no conflict of interest.

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