

Inter Atrial Communication in Adults: About 5 Cases in Guinea

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Abstract

Inter auricular communication (AIC) is the most common congenital heart disease after aortic bicuspid disease with an incidence of 5% - 10% in children and 30% - 40% in adults. It represents 6% to 10% of congenital heart defects with septal defect. Inter auricular communications (AIC) are the most common cardiac malformations in adults. This was a retrospective study of 5 cases of inter-auricular communication discovered in adulthood in the cardiology department of the Ignace Deen National Hospital between 01 November 2018 and 31 May 2019. The diagnosis was made by the Cardiac Doppler ultrasound. During the study period, 5 cases of AIC were registered at the cardiac department Ignace Deen. The average age of our patients was 51.8 years with extremes of 20 and 70 years. This average age is comparable to that of the literature that reports most develop symptoms after 40 years. In this study, male dominance was noted with 60% versus 40% of female cases. The evolution was marked by a death case of 20% who had AIC associated with an inter ventricular communication (CIV) with signs of global heart failure and four cases had a favorable evolution or 80%.

Keywords

CIA, Adult, Guinea

1. Introduction

Intra-atrial communication (AIC) is the most common congenital heart disease after aortic bicuspid disease with an incidence of 5% - 10% in children and 30% - 40% in adults [1]. It represents 6% to 10% of congenital heart defects with septal defect [2]. Inter auricular communications (AIC) represent the most frequently encountered cardiac malformations in adults [3] [4]. The de-

velopment of the interatrial septum is a complex process, determined by the growth and partial resorption of two membranes, the septum primum and secundum. In 4/100,000 newborns, a developmental error results in a defect in the interatrial septum. Their diagnosis was greatly facilitated by color-coded echocardiography. There are several types of AIC: OTIs of the ostium primum type are usually diagnosed and treated by surgery in childhood. It is a defect close to atrio ventricular valves [5]. AIC of the ostium secundum type are the most common; they sit at the level of the oval pit. Sinus venosus-like AIC are located in the upper interatrial septum, close to the superior vena cava (SVC) and are often accompanied by abnormal pulmonary venous return to the upper right [5]. Patients with CIA are often asymptomatic until adulthood. Most develop symptoms after 40 years, including reduced functional abilities, exercise dyspnea, and palpitations associated with the presence of supraventricular tachyarrhythmias. Pulmonary infections and cardiac decompensation are less common [6]. Surgical closure was long considered the gold standard of AIC treatment. It is effective but is not free of complications [7]. The rarity of previous study on this subject in Guinea and the surgical treatment being a real pitfall in our country motivates this present work which was intended to present the epidemiological characteristics, clinical, ultrasound and evolutionary of inter-auricular communication discovered in adulthood in Guinea.

2. Patient and Method

This was a retrospective study of cases of inter-auricular communication discovered in adulthood at the cardiology department of the Ignace Deen National Hospital between 01 November 2018 and 31 May 2019. The diagnosis of inter-atrial communication was the cardiac Doppler ultrasound used was sonositis, put into service in 2012 by a senior cardiologist. The variables studied were epidemiological (age, sex); Clinical: (functional and physical signs of heart failure); electrocardiographic abnormalities; ultrasound: (types of AIC, other associated anomalies); therapeutic: (symptomatic, surgical treatment) and progressive. Microsoft Word and Excel 2007 were used for data entry and analysis.

3. Result

We report the retrospective analysis of inter-atrial communication discovered in adulthood. During the study period, we identified 5 cases of inter-atrial communication.

The average age of our patients was 51.8 years with extremes of 20 and 70 years.

The electrocardiogram showed atrial fibrillation in 3 patients, 3 cases of right ventricular hypertrophy, 2 cases of left ventricular hypertrophy, 2 cases of complete right limb block and one case of junctional tachycardia. The frontal chest X-ray showed cardiomegaly in all patients.

All patients received medical treatment with diuretics, angiotensin-converting enzyme inhibitor, beta-blocker, double platelet anti-aggregation, and anti-aldosterone in one case. No patient had had corrective surgery.

The evolution was marked by a death case of 20% who had an AIC associated with an inter ventricular communication (CIV) with signs of global heart failure. Four cases had a favorable evolution, in 80%, and are currently being followed in the department and two patients are lost to follow-up (Figure 1 & Table 1 and Table 2).

4. Discussion

During the study period 5 cases of AIC were registered at the cardiac department Ignace Deen. The average age of our patients was 51.8 years with extremes of 20 and 70 years. This average age is comparable to that of the literature which reports that most develop symptoms after 40 years [6]. In this study, male dominance was noted with 60% versus 40% of female cases.

All our patients were symptomatic at admission. Dyspnea was present in 100%, followed by physical signs of right heart failure 80% of cases. Signs of right heart failure may be indicative of wide AIC [5]. These complications most often occur in patients over the age of 50, or even over 80 years of age [5].

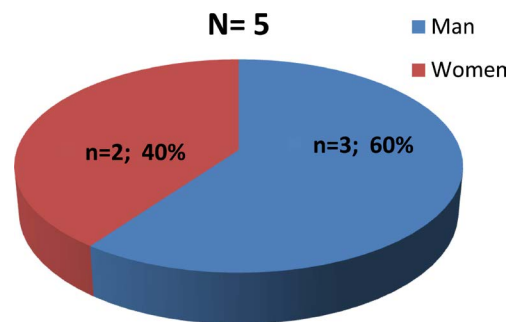


Figure 1. Distribution of patients by sex.

Table 1. Distribution of patients by clinical signs.

CLINICAL SIGNS	EFFECTIVE	%
Dyspnea	5	100
Palpitations	3	60
Cough	2	40
Physical signs of right heart failure	4	80

Table 2. Distribution of patients according to ultrasound anomalies.

Echographic abnormalities	Effective	%
AIC ostium primum	2	40
AIC ostium secundum	2	40
AIC sinus venosus	1	20
Associated CIV	3	60
Ejection fraction retained	4	80

The examination of choice for the diagnosis and quantification of AIC is the Doppler echocardiography which allows visualizing the presence of right ventricular overload and tricuspid insufficiency and to measure pulmonary arterial pressures [6]. A diagnosis of AIC was made using Doppler ultrasound in all our patients while specifying the type of AIC and other associated abnormalities. Transesophageal echocardiography (TEE) is generally reserved for the evaluation of “ostium secundum” type AIC before percutaneous closure, in order to exclude the presence of venous return abnormalities and venous sinus abnormalities [6]. our study cardiac Doppler ultrasound revealed 40% of AIC ostium primum, 40% of AIC ostium secundum and 20% of AIC sinus venosus. The AIC type “ostium secundum” or “foramen ovale permeable” is the most common (80% of cases) [6]. AIC of the ostium primum type are frequently associated with a partial atrioventricular canal and abnormalities of the atrioventricular valves [6]. This was the case in 2 of our patients who presented an incomplete atrioventricular canal.

Our patients have benefited from the medical treatment of heart failure. In the adult population and in the presence of co-morbidities, surgical treatment appears to be associated with an increase in mortality. The treatment of choice for AIC of the “ostium secundum” type is percutaneous closure; this is feasible in 80% of cases, taking into account its morphological aspects. This closure will be associated with antiplatelet therapy for 6 months [6]. It is now certain that adults with AIC with significant shunt benefit from the closure of the AIC, either percutaneously or surgically [5]. In our country the lack of cardiac surgery is a huge obstacle in the management of cardiovascular diseases like the AIC.

The evolution was marked by a death case of 20% who had AIC associated with a CIV with signs of global heart failure and four cases had a favorable evolution or 80%.

5. Conclusions

AIC discovered in adulthood are under diagnosed and are usually associated with complications including rhythmic and heart failure. Cardiac Doppler ultrasound plays an indispensable role both for diagnosis and for management. The ideal treatment remains corrective surgical (**Figure 2**).

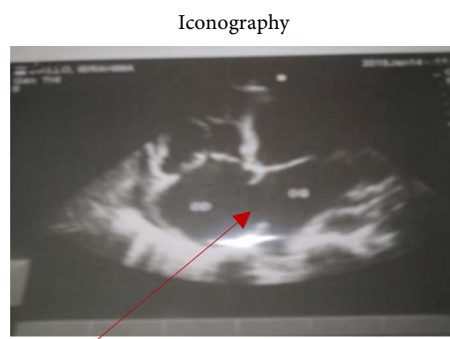


Figure 2. A cardiac Doppler ultrasound in apical cut 4 cavities showing a wide AIC ostium.

The absence of cardiac surgery in our context was the main limitation of this study.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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