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# **SUPRAVENTRICULAR TACHYCARDIA REVEALING A HEART MALPOSITION IN A 68-YEAR-OLD ADULT : CASE REPORT**

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## **Abstract**

Cardiac arrhythmias rarely complicate congenital heart disease in not operated adult. We report a case of cardiac malposition revealed by a supraventricular tachycardia. The clinical symptoms were dominated by recurrent palpitations. Attention was captivated by lack of cardiac activity in left chest part. Chest x-ray showed dextrocardia with cardiac apex and aortic arch on the right side. The electrocardiogram showed narrow QRS tachycardia

responding to sinocarotid massage. Echocardiography revealed situs inversus with atrioventricular and ventriculo-arterial concordance.

**Keywords:** supraventricular tachycardia, dextrocardia, situs inversus, case report

## **Introduction**

Cardiac arrhythmias rarely complicate congenital heart disease in not operated adult [1]. Their mechanism may be the result of the impact of cardiovascular risk factors common in elderly patients [2]. However, patients with dextrocardia have high risk of cardiac arrhythmia compared to general population. Clinical expression being related to atrial fibrillation or atrial flutter [3]. The particularity of this case is the association of supraventricular tachycardia rarely reported in this context.

## **Case report**

Mrs M.G, 68-year-old, hypertensive patient admitted to the department of cardiology at the Teaching Hospital of Brazzaville (Congo) for recurrent attacks of palpitations. She has no family history of congenital disease. Clinical examination showed that there was no heartbeat in the left chest part. Heartbeats were detected at the 5th right intercostal space. Heart sounds were regular, heart rate at 160 beats per minute without abnormal added noises. The blood pressure was 160/90 mmHg. The rest of clinical examination was normal. The frontal chest x-ray showed dextrocardia, cardiomegaly (cardiothoracic ratio=63%), an aortic arch on the right side [**Figure 1**]. Electrocardiogram performed in conventional position noted regular tachycardia with narrow QRS without P waves. Right QRS axis, absence of R wave in derivations I, AVL and from V2 to V4 ; small r and large S waves in V1[**Figure 2**]. The symmetrical inversion of electrodes let appear normal progression of R wave. Sinocarotid massage produced a significant and transient reduction of heart rate. Echocardiography showed situs inversus, atrioventricular and ventriculo-arterial concordance, aortic arch on the right making a mirrored heart [**Figure 3**]. In addition atrial dilatation (left atrial = 24 cm<sup>2</sup>, right atrial = 24 cm<sup>2</sup>) and hyperdynamic ejection fraction of left ventricle (EF=84%). Electrophysiology study was not performed by lack of laboratory. The diagnosis of supraventricular tachycardia and dextrocardia with situs inversus was retained. The patient

was treated with Verapamil inducing rapid return to sinus rhythm as confirmed by long-term electrocardiogram [Figure 4].

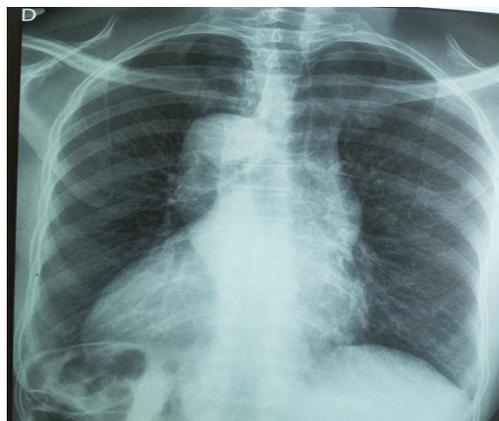
## Discussion

Congenital heart disease is often found in childhood. Some of them may go unnoticed and discovered accidentally or through complications, including heart rhythm disorder [4]. However, dextrocardia can remain asymptomatic in the absence of others associated cardiac abnormalities [5]. Patients with dextrocardia have high risk of atrial fibrillation or atrial flutter [3] supraventricular tachycardia observed in our patient seems to be induced by atrial dilation, this last constituting an arrhythmogenic substrate and, itself being the atrial impact of barometric overload of high blood pressure or other cardiovascular risk factors as described by Barre in France [1]. However the unavailability of electrophysiology laboratory did not allow an exact mapping of the supraventricular arrhythmia.

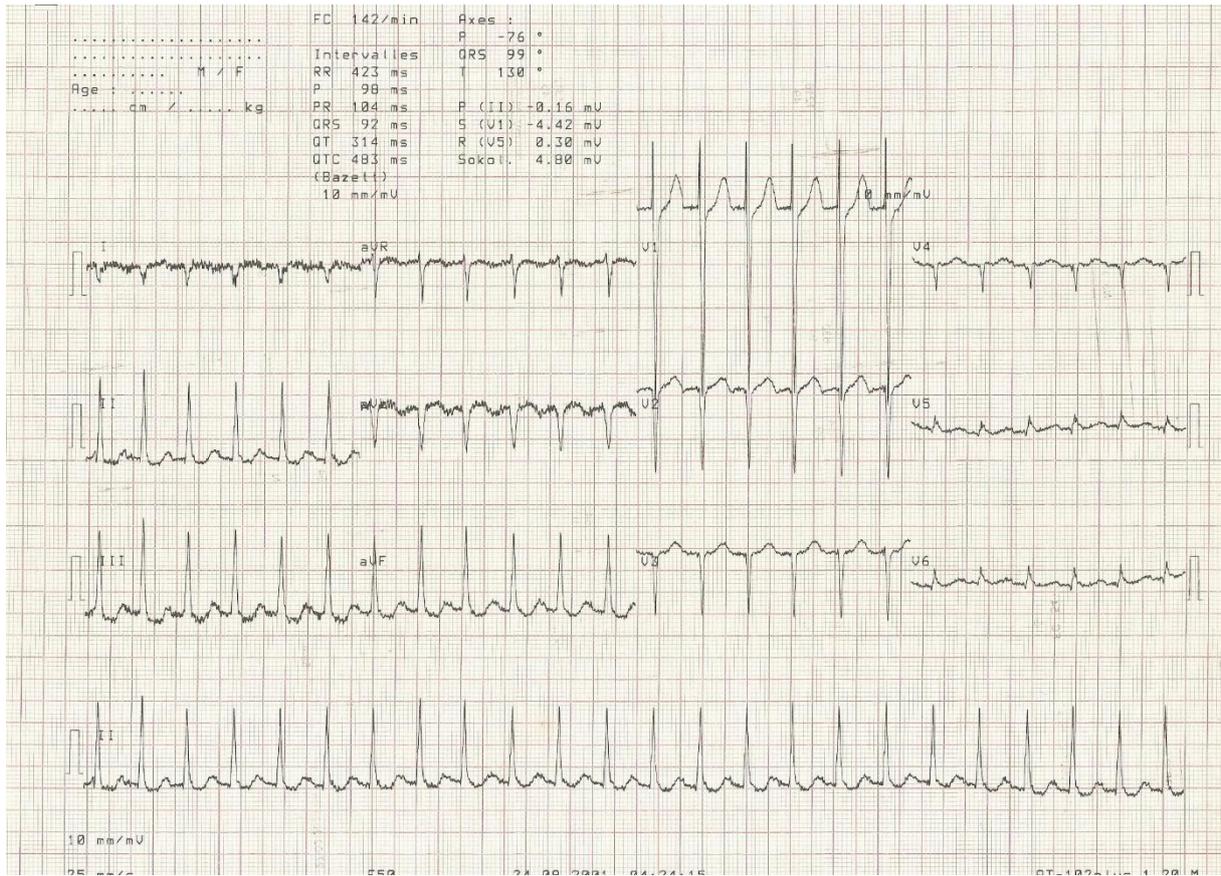
## Conclusion

Cardiac malposition in adult is a rare condition and the occurrence of supraventricular tachycardia exceptional. Mechanism of this last stay unclear, probably caused by arrhythmogenic substrate resulting of atrial modifications due to common cardiovascular risk factors.

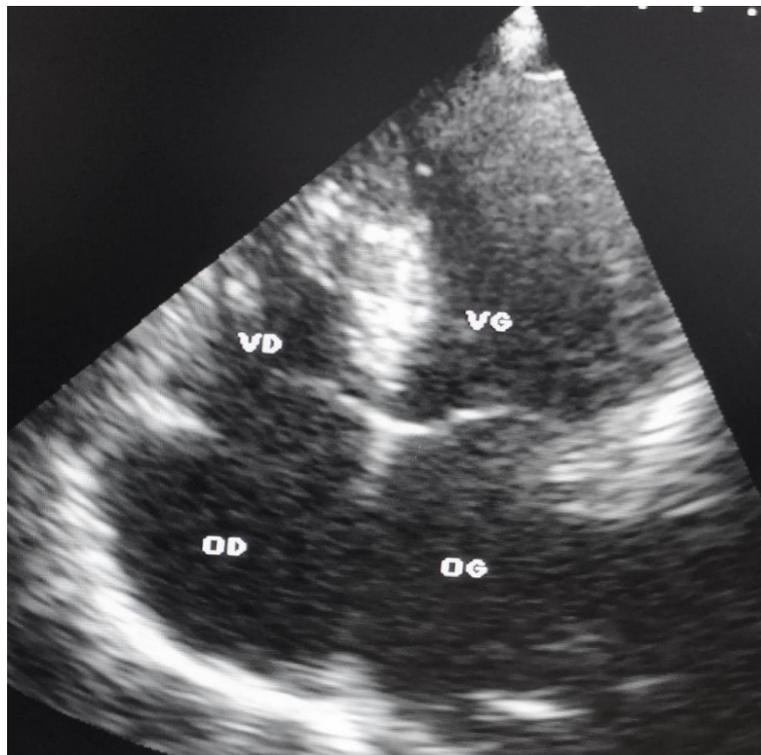
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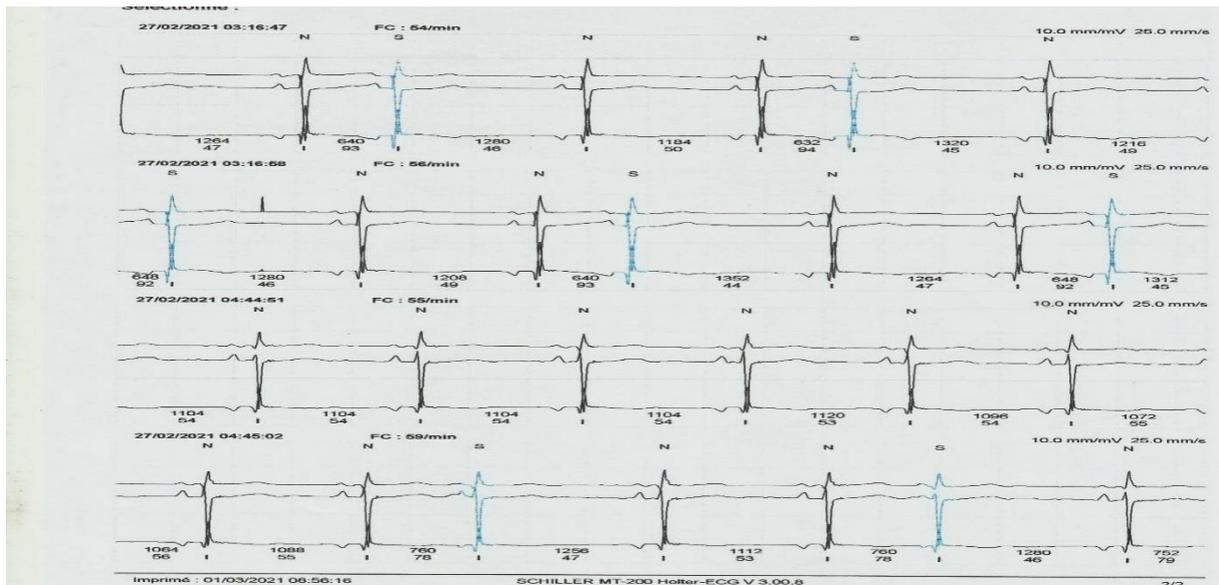
**Figure 1 : Frontal Chest X-ray showing dextrocardia making a mirrored heart**



**Figure 2 : Electrocardiogram of situs inversus with supraventricular tachycardia**



**Figure 3 : Apical view with probe mark on right side showing cardiac chambers**



**Figure 4 : Sample of long-term electrocardiogram showing recovering of heart rhythm**

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