

# Handstand Maneuver for Cardioversion in Paediatric Supraventricular Tachycardia (SVT): A Case Report

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## Introduction

Supraventricular Tachycardia (SVT) is the most common tachyarrhythmia in children with incidence rate 1 in 100<sup>1</sup>. In infants, symptoms are usually nonspecific including poor feeding and irritability meanwhile in older children most common presentation is palpitation. In stable SVT, first line management would be vagal stimulation. We report a case of a 6-year-old boy presented with tachycardia reverted by handstand maneuver.

## Case description

A 6-year-old boy with underlying narrow complex tachycardia on T Propranolol presented as less active for 1 day, with a history of missed medication and self heart rate monitoring at home showed 238 beats/minute. On assessment, airway patent and child not in shock. However, the heart rate on the cardiac monitor ranged between 240-255 beats/minute. ECG suggests narrow complex tachycardia. Thus, child was asked to blow into a 10 ml syringe and passively raise his legs to 45 degrees, but the heart rate persisted. The child was then put on a handstand maneuver, heart rate came down to 89 in seconds. Child was transferred to general ward for observation.

## Discussion

SVT is a rapid, paroxysmal regular tachyarrhythmia that commonly involves the atrioventricular (AV) conduction system and an accessory AV pathway<sup>2</sup>

Clinical presentation could widely vary from palpitation, chest pain, abdominal pain, pallor and sweating, syncope and heart failure.

Electrocardiogram (ECG) will show a narrow complex tachycardia at a rate >220 per minute for infants and >180 for children, the P wave is absent or abnormal and the R-R interval is not variable<sup>3</sup>

According to the Pediatric Advanced Life Support (PALS) algorithm, in patients with hemodynamically stable, vagal maneuvers should be attempted first, these included ice immersion, carotid massage, and handstand maneuver.

Handstand is likely to cause vagal stimulation by transiently increasing thoracic pressure, stimulating baroreceptor activity in the aortic arch and carotid bodies and resulting parasympathetic tone.<sup>4</sup>

Based on study, the upside-down position terminated SVT in 67% of the study group versus 33% of the standard Valsalva maneuver<sup>6</sup>

## Conclusion

In patients with SVT, handstand maneuver should be considered as a routine first treatment, and can be taught to patients.

