

# An 18 month old child with complete atrioventricular block presenting initially as breath holding spells



## Case Authors

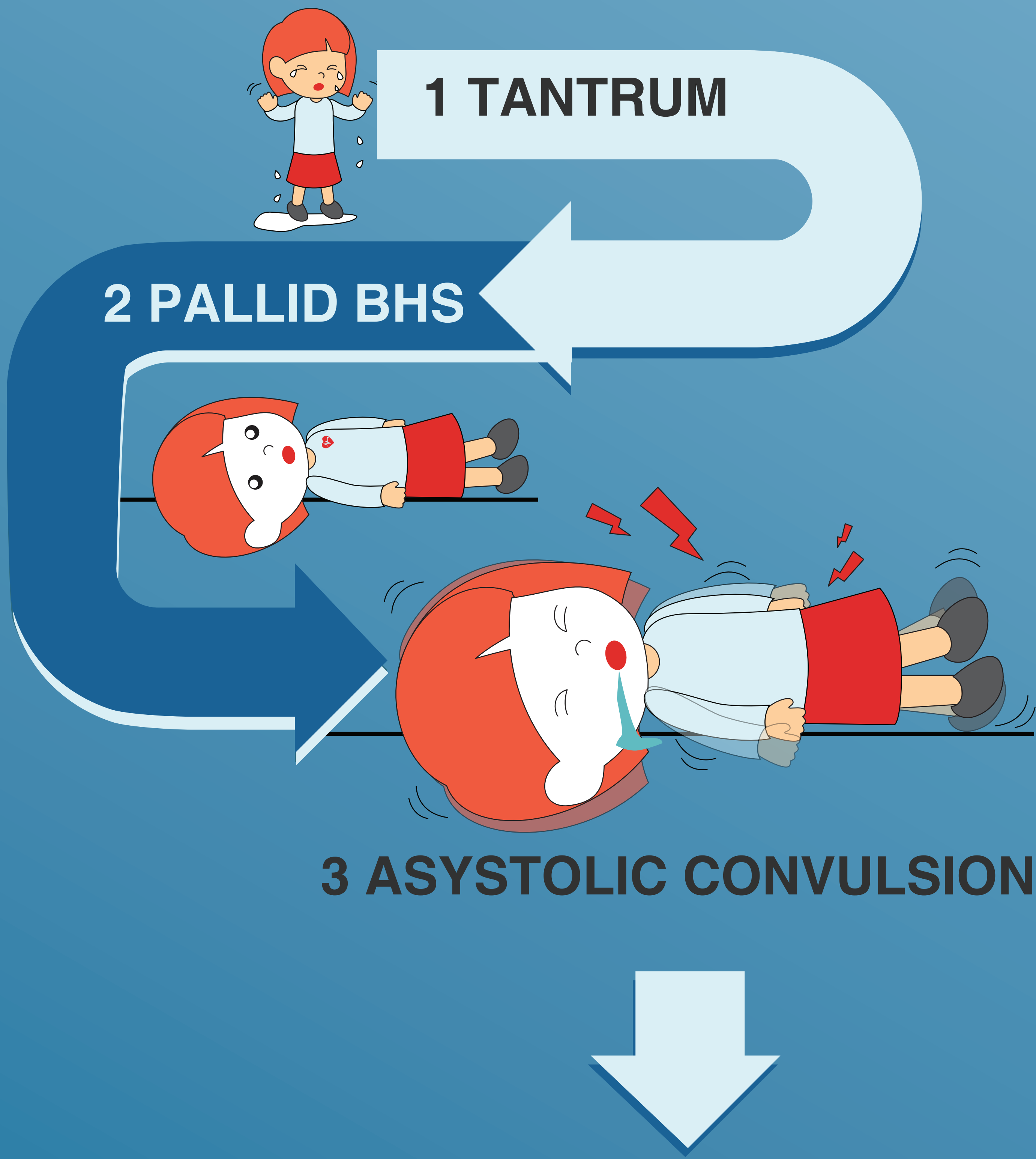
D. Hadas<sup>1</sup>, VL. Vida<sup>2</sup>, A. Cerutti<sup>3</sup>, S. Ferretto<sup>1</sup>, M. Padalino<sup>2</sup>, E. Reffo<sup>3</sup>, L. Quinto<sup>1</sup>, O. Milanesi<sup>3</sup>, L. Leoni<sup>1</sup>  
 (1) University Hospital of Padova, Department of Cardiac Thoracic and Vascular Sciences, University of Padova, Italy.  
 (2) University Hospital of Padova, Paediatric and Congenital Cardiac Surgery Unit, Department of Cardiac, Thoracic and Vascular Science, Padova, Italy  
 (3) University Hospital of Padova, Paediatric Cardiology Unit, Department of Women's and Children's Health, Padova, Italy

## Introduction

Breath-holding spells (BHS), are early childhood age-typical expressions of frustration or anger. Pallid BHS are precipitated by trauma rather than anger, and are known to be associated with cardiac asystole and EEG slowing. Long-term prognosis is generally excellent, and the standard of care is reassurance for most patients. Unexpected death and severe ischemic encephalopathy have been reported in few children. Some centers implant pacemakers in extreme asystolic BHS, presenting an improved quality of life. We describe the first case of complete atrioventricular block following asystole in BHS

## Case reports

An 18 month old child with normal medical and family history. Presented with suspected emotional spasm and frequent episodes of loss of consciousness since 6 month of age. In suspicion of BHS he was treated with oral iron supplement. During a visit to the pediatrician an epileptic event was witnessed and he was referred for a neurological investigations. EEG and V-EEG performed showed transitional aspects cerebral hypoperfusion, with the transition to a normal waking activities in 15-20 seconds( typical for BHS). Resting ECG, Echocardiogram, Blood examination and CXR were normal. A 4 day ECG Holter examination during episodes of crisis revealed sinus rhythm interrupted by extreme bradycardia and junctional rhythm followed by sinus arrest which is followed by episodes of complete atrioventricular block with no spontaneous nodal or ventricular rhythm, pauses reached about 20 sec (pic 1). After a multi-diciplinar consultation and, in the light of the unusual event, we implanted a VVI epicardial abdominal pacemaker programmed to minimum HR of 75 in according with the child's known, normal HR variability of 90-150. During the child's post-surgical observation an event was recorded, with normal sinus tachycardia followed by a sudden drop in heart rate and intervention of pacemaker with heart rate 75 for 20 second. There were no unconsciousness.



## Conclusion

BHS are nonepileptic paroxysmal disorder of infancy. Medical conditions to consider should include seizures, Chiari crisis, dysautonomia, central nervous system lesions and cardiac arrhythmias. We present a first case of complete atrio-ventricular block mimicking the "assuming benign" asystolic pallid BHS, revealing the importance of a ECG documented event in order to differentiate between the etiologies

