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"Don't Chase the Wheeze - Check the Rhythm!"

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I. Introduction:

Paroxysmal supraventricular tachycardia (PSVT) is an uncommon but potentially life-threatening arrhythmia in children. In pediatric patients with underlying bronchial asthma, tachycardia is often presumed to be physiologic or secondary to hypoxia or beta-agonist therapy. Early recognition and prompt management are crucial to prevent hemodynamic compromise.

II. Case Report:

A 6-year-old male presented to the emergency department in walking with complaints of palpitations since 1 hour, associated with one episode of vomiting and shortness of breath on exertion. He had a 3–4-day history of dry cough without fever or hemoptysis. Past history revealed recurrent episodes of dry cough over 6 months, managed with frequent salbutamol nebulizations, syrup terbutaline, bromhexine, and guaifenesin.

On the basis of initial pediatric assessment triangle, the child did not appear sick, came in walking with increased work of breathing on exertion and normal in colour. On primary survey a patent was airway with Respiratory rate of 30/min, SpO_2 90% on room air with Bilateral rhonchi were noted on auscultation Heart rate of 190/min, and BP 94/62 mmHg, CRT<2secs, the child was alert (GCS 15/15). On Exposure patient was afebrile with RBS-103mg/dl.

As adjuncts to primary survey ECG was done s/o PSVT and defibrillator monitor attached, ABG was sent and Initial management included oxygen supplementation via mask at 5 L/min and 2 large bore IV Cannula was secured and application of icepack put on forehead but unsuccessful and attempted vagal maneuvers, which were unsuccessful. Intravenous adenosine 0.1 mg/kg (2 mg) was administered, followed by 10 mL normal saline bolus, leading to termination of the PSVT. Nebulization with normal saline and budesonide was also provided for bronchospasm management. The child remained hemodynamically stable post-procedure. Pediatrics reference was sought and patient admitted in Pediatric ICU. After 3days on follow up patient was discharged.

III. Discussion:

PSVT in children may be precipitated by asthma or beta-agonist therapy, but can also occur independently. Etiologies of PSVT in the pediatric population include re-entrant tachycardias (e.g., AV nodal re-entrant tachycardia, accessory pathway-mediated tachycardia), ectopic atrial tachycardia, structural heart disease, electrolyte disturbances, and rarely, drug-induced triggers. Clinical features such as abrupt-onset palpitations, extremely high heart rates disproportionate to fever or hypoxia, and poor response to conventional asthma therapy should raise suspicion. ECG confirmation is essential for diagnosis. Adenosine remains the drug of choice for

acute termination, and supportive care for underlying asthma is critical to prevent recurrence. Early recognition prevents complications such as heart failure, hypotension, or syncope.

IV. Conclusion:

In pediatric patients presenting with wheezing and tachycardia, PSVT should be considered as a differential diagnosis, especially when the heart rate is disproportionately high. Prompt ECG evaluation and timely use of adenosine can be life-saving. Awareness among emergency physicians can prevent misattribution of tachycardia to asthma or drug effects, ensuring appropriate and rapid management.