**PEDIATRIC AND ADULT CONGENITAL ARRHYTHMIAS MANAGEMENT: TECHNIQUES AND CHALLENGES**

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1. **Unusual accessory pathways:** pathways with Mahaim characteristics can be atriofascicular, atrioventricular, nodofascicular and nodoventricular, depending on their variable proximal and distal insertions.
2. **Mahaim fiber related tachycardia**:
* Wide QRS tachycardia in young having no structural heart disease.
* Typically decremental and conducting only anterograde.
* Anatomically Mahaim fiber is located at the lateral tricuspid annulus in most instances.
* Mahaim potential good predictor of a successful ablation site
* "Mahaim" automatic tachycardia (MAT), during RF ablation have been considered as a marker of successful ablation.
1. **Non-arrhythmic pre-excitation-induced cardiomyopathy:** asynchronous ventricular activation over the accessory pathway, especially right-sided, induces septal wall motion abnormalities, ventricular remodeling and ventricular dysfunction. The reversible nature of LV dysfunction after loss of ventricular pre-excitation supports the causal relationship between LV dysfunction and ventricular pre-excitation. We describe the 1st known case of recovery of ventricular function leading to explant of Berlin BiVAD support.
2. **Trans-septal or trans-baffle puncture techniques:**
* SafeSept™ transseptal guidewire (SSTG) use in children
* Radio frequency energy for perforation
* Intracardiac echocardiographic guidance
1. **Catheter ablation of hemodynamically unstable patients**
* Ventricular assist device/ECMO
* IMPELLA circulatory pump
* Local anesthesia and/or sedation only
1. **Ablation of para-Hisian substrates by IVC approach, ablation in the non-coronary cusp is not an initial or a preferred approach for pediatric patients.**
2. **Complex congenital postoperative anatomy:**

Integration of MRI and electro anatomic mapping

1. **Subcutaneous ICD implant in children: Our center’s experience**