during T. Change of A-A interval during T was reflected on that of the following V-V interval. T could be reset from the high right atrium. Ventricular pacing during T demonstrated dissociation of the ventricle and atrium in all patients. Earliest A electrogram (EG) during T was recorded at the low right anterior septum (RAS) by His-bundle (HB) electrode with different intra-A activation sequence from that during ventricular pacing with retrograde AV nodal conduction. T was successfully ablated in the 5 attempted cases by application of radiofrequency current at a mean power of 26 ± 4 W at RAS adjacent to HB recording site where earliest and fractionated A EG 50 ms prior to P wave on ECG during T was recorded. Antegrade and retrograde AV [illegible] pathway physiology remained unchanged after successful ablation. Above these indicated T to be AT rather than AVNRT.

Conclusions: There might be an entity of adenosine-sensitive AT originating from AV nodal transitional area, and it can be ablated without disturbing AVN conduction.

948-78 Electrophysiologic Changes Seen Acutely and Three Months Following AV Node Modification

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AV node reentrant tachycardia is thought to be related to anatomically distinct pathways with disparate conductive properties. Typically, energy is delivered to the posteroseptal region for slow pathway ablation (SPA) and to an anterior/superior position for fast pathway ablation (FPA). To determine electrophysiologic selectivity of AV node modification (AVM), we compared 112 patients undergoing AVM (F = 21, S = 91) pre, immediately post and 3 months post ablation. Results follow:

Interval	Pre (ms ± S.D.)	Post	3 months
AH (S)	87 ± 27	104 ± 59*	86 ± 34
AH (F)	84 ± 23	150 ± 48*	131 ± 43
AVBCL(S)	382 ± 92	388 ± 96	397 ± 93**
AVBCL(F)	373 ± 76	342 ± 67	329 ± 50
VABCL(S)	338 ± 86	360 ± 102	355 ± 95
VABCL(F)	314 ± 40	443 ± 143*	427 ± 119

*p < 0.05 for pre vs post, **p < 0.05 for post vs 3 months.

Although not as pronounced as in FPA, energy application to the SP results in significant acute AH prolongation. AV block cycle length (BCL) prolongation progressed 3 months post SPA, but no late heart block occurred. Persistent retrograde conduction can be seen following FPA. *We conclude:* 1) the slow and fast pathways are not as anatomically distinct as previously thought and SPA may transiently and reversibly affect the FP, 2) retrograde conduction can persist post FPA and may be related to SP or to marked alteration of retrograde FP conduction.

948-79 Radiofrequency Catheter Ablation of Accessory Pathways in Infants Younger Than Nine Months Old

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We have evaluated the radiofrequency (RF) catheter ablation of accessory pathways in 5 infants with supraventricular tachycardia (SVT) ranged in age from 2.5 to 8 months. The ablation was indicated due to aborted sudden death associated with tachyarrhythmia in 2 patients (pts), left ventricular dysfunction related to incessant tachycardia in 1 pt, medically refractory SVT in 1 pt and planned cardiac surgery in 1 pt. The five pts underwent a single successful procedure. A 5F bipolar electrode catheter with a 3 mm tip was used. Three left free wall pathways were ablated by transseptal approach, a right posteroseptal pathway was ablated from the femoral vein and a left posteroseptal pathway was approached through the coronary sinus. An abrupt increment in impedance due to the development of a coagulum was observed in 2 pts. One pt developed a transient ischemic complication after ablation of a left lateral accessory pathway by transseptal approach. Coronary angiography demonstrated patent coronary arteries. This pt had mild pericardial effusion after the procedure. Moderate pericardial effusion was also noted in another pt after RF ablation. After a mean follow-up of 8 months all pts are asymptomatic without treatment.

Conclusions: Although radiofrequency catheter ablation has an increase complications risk in infants, can be performed successfully when no therapeutic alternative exists. The temperature monitoring in 5F catheters would prevent the development of coagulums.

948-80 Prevalence of Retrograde Accessory Pathway Conduction During Atrial Fibrillation in the Preexcitation Syndrome

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To determine the prevalence of retrograde accessory pathway (AP) conduction during atrial fibrillation (AF), we studied 8 patients undergoing surgical division of their AP(s). A plaque electrode array containing 56 bipolar electrodes (5 mm inter-electrode distance) was placed epicardially at the AV junction over the AP during electrically induced AF.

Results: Excluding 1 patient who had only preexcited QRS complexes and another whose AP was outside the mapped region, 4 of 6 patients studied showed retrograde conduction over the AP during AF (mean AF cycle length [CL] 157 ± 59 ms). A total of 186 atrial wave fronts (WF) were analyzed. Among 68 WF immediately following non-preexcited QRS complexes, 17 (25%) originated from the ventricle via retrograde AP conduction. Thus, 17/186 (9%) of total WF originated from the ventricle. Mean *AA* interval (time from the preceding atrial WF to the time of retrogradely conducted WF at the AP) was 176 ± 49 ms (range 85–276 ms). Of 17 retrogradely conducted WF, 5 had *AA* intervals shorter than the mean AF CL, suggesting the presence of an excitable gap. Atrial refractory period as estimated from *AV* interval (time from preceding atrial WF to the time of ventricular WF at the AP) ranged from 81 ms (shortest *AV* interval that allowed retrograde conduction) to 165 ms (longest *AV* interval that resulted in retrograde block).

Conclusions: (1) In patients with the preexcitation syndrome, retrograde conduction via AP contributes up to 9% of total WF in AF. (2) These new WF may help perpetuate AF in these patients with structurally normal atria. (3) Retrograde AP conduction during AF suggests the presence of an excitable gap in human AF.

948-81 Learning Curve of Radiofrequency Ablation Procedure of AV Nodal Reentrant Tachycardia

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Success rate, safety and complications of radiofrequency catheter ablation (RFA) of AV nodal reentrant tachycardia (AVNRT) were investigated in correlation to the experience of the team. The aim of the study was the estimation of the training of the investigator, needed for safe and high quality procedures.

Methods: 250 consecutive patients with AVNRT treated with RFA by three investigators were devided in 5 subgroups (patients 1–50 (1.), 51–100 (2.), 101–150 (3.), 151–200 (4.), 200–250 (5.)). The investigators had a training in diagnostic catheterization before. We investigated success rate (relapses, 2nd and 3rd procedures), safety parameters (unwanted AV blocks, local complications, radiation exposure) and the RFA procedures (duration, RFC deliveries, power, energy, increase of impedance). In addition we observed the indication to RFA of AVNRT (symptoms of patients: syncope, resuscitation; number of ineffective drugs, RFA as first treatment).

Results:

	1.	2.	3.	4.	5.
RFA procedures	1–50	51–100	101–150	151–200	201–250
Relapses of AVNRT	4	1	1	0	1
Unwanted high degree AV block	2	1	1	0	0
Fluoroscopy time (min)	33	23	16	19	16
Procedure duration (min)	207	158	114	121	108
Mean RFC deliveries	14 ± 7	7 ± 4	4 ± 3	4 ± 2	4 ± 3
Antiarrhythmic drugs tested	2.9	2.4	2.2	1.9	1.4

Conclusions: (1.) RFA of AVNRT is a safe treatment with high success rate that can be recommended as first treatment in experienced centers. (2.) The learning curve of RFA of AVNRT consists of 100 patients up to a procedure of short duration, low radiation exposure, few RFC deliveries, low complications and minimal unwanted AV blocks. (3.) A training in AVNRT ablation for a new investigator should consist of 100 patients under control of an experienced investigator in an arrhythmia center.

948-82 Electrophysiologic Peculiarities of Nodoventricular Accessory Pathways With Mahaim-Type Preexcitation

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Nodoventricular (NV) or nodofascicular accessory pathways were originally thought to represent the anatomical substrate of Mahaim-type preexcitation; however, they could almost never be demonstrated during mapping studies for catheter ablation. In 2 of 24 Mahaim fibers investigated in our labora-