among these two categories.

On epicardial mapping, early excitation area was detected just beneath the crux in the septal AP, on the other hand, in the right posterior AP early excitation area was found at the diaphragmatic wall of right ventricle. The case having early excitation area near the crux with the presence of the right bundle branch constantly showed the AP located on the septum.

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DOUBLE VENTRICULAR RESPONSE TO A SINGLE ATRIAL STIMULATION IN PATIENTS WITH PAROXYSMAL SUPRAVENTRICULAR TACHYCARDIA

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The incidence and mechanism of double ventricular response were studied in patients with paroxysmal supraventricular tachycardia (PSVT). Electrophysiologic studies were performed in 278 patients with PSVT including 122 with WPW syndrome, 76 with concealed WPW syndrome, 59 with atrioventricular (A-V) nodal reentrant tachycardia and 21 of other origin.

In 4 patients with WPW syndrome, premature atrial stimulation given at the coupling interval of slightly longer than the effective refractory period of accessory pathways showed double ventricular response, one through the accessory pathway and the other by the normal A-V pathway. The second QRS was followed by orthodromic PSVT or atrial echo. Double ventricular response was induced by coronary sinus stimulation in 3 patients with left-sided accessory pathway, and by both coronary sinus and right atrial stimulation in 1 patient with septal accessory pathway. In 3 of 4 patients, single right ventricular extrastimulus elicited orthodromic PSVT or echo beat, indicating retrograde block in the normal A-V pathway.

Double ventricular response was observed in 2 patients with A-V nodal reentrant tachycardia, one by rapid atrial stimulation and the other by both rapid and premature atrial stimulation. In the latter case PSVT was initiated by double ventricular response which was induced by a spontaneous premature atrial contraction.

Double ventricular response could be an initiating mechanism of supraventricular tachycardia.

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MODE AND SITE OF RETROGRADE CONDUCTION BLOCK OF THE INITIATION OF SUPRAVENTRICULAR TACHYCARDIA BY VENTRICULAR PREMATURE STIMULATION IN THE WPW SYNDROME

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The mode and site of retrograde conduction block of the initiation of paroxysmal supraventricular tachycardia (PSVT) induced by ventricular premature stimulation was analyzed in twelve patients with WPW syndrome. The mode of initiation of PSVT was divided in three types.

In type I (3 patients) and type II (4 patients), PSVT was induced after ventricular echo (Ve) due to ventricular macro-reentry and micro-reentry, respectively. In type III (5 patients), PSVT was induced suddenly by ventricular premature stimulation without Ve. In type I and III, retrograde ventriculo-atrial conduction was blocked in His-Purkinje system (HPS) and PSVT was induced by the impulse conducted to the atria via accessory pathway. In type II, the exact mechanism was not clear.

We conclude that there were three types in the mode of initiation of PSVT and in 8 of 12 patients (67%), a retrograde block in HPS is the mechanism for initiation of PSVT by ventricular premature stimulation in patients with the WPW syndrome.

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PHARMACOKINETIC STUDY OF THE PROCAINAMIDE ON THE ANTEROGRADE CONDUCTION OF THE ACCESSORY PATHWAY IN PATIENTS WITH THE WOLFF-PARKINSON-WHITE SYNDROME

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To evaluate the anterograde block of the accessory pathway (AP) after Procainamide (PA) infusion, we investigated the pharmacokinetics of PA by means of moment analysis of plasma concentration in ten patients with Wolff-Parkinson-White syndrome. PA was given as an intravenous infusion of 10 mg/kg over a 5 min. Blood samples for measurement of plasma drug level were frequently collected for 60 min. The pharmacokinetics data and anterograde effective refractory period of the accessory pathway (APERP) are shown on the table.

Δ wave during test	AUC ($\mu\text{g}\cdot\text{hr}/\text{ml}$)	MRT (hr)	VRT (hr^2)	APERP (ms)
(+)	7.81	1.01	1.07	290
	6.29	1.37	2.20	280
	10.9	1.18	1.87	290
	10.5	2.17	5.69	270
(-) $\rightarrow$ (+)	7.45	1.32	2.78	290
	11.9	1.83	3.81	280
	8.48	1.72	3.03	290
	8.83	1.09	1.43	300
(-)	9.46	2.01	5.80	490
	11.8	2.45	6.17	350

AUC: area under plasma concentration-time curve of PA

MRT: mean residence time of PA

VRT: variance of the residence time of PA

In three of six pts having APERP of 280 or 290 msec, the anterograde block of conduction of the accessory pathway were observed after PA injection. All these three pts had 2.78 hr² or more of the VRT. Our results suggest that the important factor determining the anterograde block in the AP with PA given intravenously is not only the duration of the APERP but also the value of VRT.

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