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Postinterventional recurrent supraventricular tachycardia due to transient right bundle branch block after a successful high-frequency ablation of a midseptal accessory pathway in a patient with preexcitation sydrome

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Introduction:
Right Bundle branch Block (RBBB) may occur by catheter positioning during electrophysiological study (EPS). As this mechanical irritation is normally transient and not associated with significant side effects data of complications are limited.

Case presentation:
Recurrent episodes of apparent life threatening events were noted in a 20 months old girl (10 kg) with preexcitation sydrome with two episodes already under propanolol therapy. Due to these episodes the patient was transferred to our hospital for EPS.
RBBB occurred during positioning of electrode catheters and was traceable for the rest of the examination. Atrial stimulation showed an antegrade refractory period of the accessory pathway (AP) of 220 ms. A supraventricular tachycardia (SVT) was not inducible. Successful ablation was achieved in the midseptal region with a loss of antegrade (loss of delta wave) and retrograde conduction of the AP.
Two hours later the patient developed a supraventricular tachycardia with RBBB. After administration of adenosine sinus rhythm occurred only for one beat without preexcitation, with subsequent start of the SVT again. Despite propafenon administration sinus rhythm could not be restored. However rate control could be achieved under continuous amiodarone administration with recurrent termination of the SVT and direct onset of the SVT after one sinus beat. The electrophysiological mechanism of the SVT with unusual direct start of SVT after one sinus capture was due to delayed excitation of the right ventricular myocardium and relapse of retrograde conduction of the AP. Due to this time lag the atrial myocardium was inducible again. SVT stopped immediately after loss of RBBB after 80 hours. Despite the relapse of the retrograde conduction the risk of sudden cardiac death through rapid antegrade conduction via the AP was eliminated. In the follow-up examinations after 1, 4 and 8 month no more SVT episodes were detected. Ablation of the retrograde conduction of the AP will be taken into consideration when the patient has gained more weight.

Conclusion:
Transient RBBB in combination with an accessory pathway can cause sustained SVT which may be difficult to control.