is uncertain, but this organism was assumed to be the cause of the endocarditis as no other organism was cultured. The endocarditis may have been caused, however, by a penicillin sensitive organism.

Bacterial endocarditis secondary to acupuncture has not previously been reported, and the incidence of local infection after acupuncture is also not recorded. With the increasing popularity of acupuncture physicians may need to consider advising antibiotic prophylaxis to patients with cardiac lesions who intend having acupuncture. If *Pseudomonas* was the causal agent in the patient reported a normal prophylactic regimen would not have been adequate. We suggest, however, that oral amoxycillin would be suitable for skin prophylaxis for most patients although flucloxacillin might be considered for those exposed to resistant staphylococci.

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Persistent atrial tachycardia in pregnancy

Sustained tachycardias are a rare complication of pregnancy especially in the absence of heart disease. We report an example of persistent atrial tachycardia in an otherwise healthy primigravida.

Case report

A 20 year old white woman noticed a persistently fast pulse rate in the initial weeks of her first pregnancy. She was booked into the antenatal clinic at 15 weeks, when a tachycardia was recorded. Apart from this there was no evidence of a cardiac abnormality. She had never suffered from palpitations and there was no history of rheumatic fever. On examination she was found to be normotensive and there were no physical signs of heart disease. Her only medication was promethazine for morning sickness, and the tachycardia persisted despite withdrawal of the drug. An electrocardiogram (figure) showed an atrial tachycardia of 160-180 beats/min with occasional periods of variable atrioventricular conduction resulting in a slightly slower ventricular rate. A chest radiograph, thyroid function values, and an echocardiogram were normal.

The pregnancy proceeded normally and at no stage did the patient develop signs of left ventricular impairment. She was admitted at 28 weeks for cardioversion, which proved unsuccessful. At 38 weeks she went into labour spontaneously and delivered a normal boy weighing 3000 g. There were no obstetric complications in the puerperium. Ten days post partum her heart rate suddenly reverted to normal. An electrocardiogram showed sinus rhythm at 70 beats/min. There was no recurrence of the tachycardia during more than one year of follow up.

Comment

Although both atrial and ventricular premature beats may occur during pregnancy,^{1,2} sustained tachycardias are rare especially if there is no structural heart disease. Most instances of sustained "supraventricular" tachycardia during pregnancy are related to anomalous atrioventricular conduction pathways of the type found in the Wolff-Parkinson-White syndrome. In our patient, however, the absence of ventricular pre-excitation and the finding of variable atrioventricular conduction during tachycardia excluded such pathways. Atrioventricular nodal re-entry was also unlikely. Hence the tachycardia apparently originated in the atrial myocardium. The P wave axis was difficult to determine but appeared to be normal in leads I, II, aVR, and aVF. This would be consistent with a focus in the high right atrium. In the general population these tachycardias

occur most commonly in association with a wide variety of organic heart diseases, none of which was detected in our patient.

The cardiovascular changes during pregnancy are well documented.³ There is an increase in blood volume together with a raised cardiac output and heart rate. These occur in the presence of high circulating concentrations of progesterone and oestrogen. Although the relevance of these changes to the aetiology of the atrial tachycardia must remain speculative, the sequence of events strongly suggests that pregnancy was an important factor in the initiation and maintenance of the arrhythmia. The incessant nature of the tachycardia and the failure

Twelve lead electrocardiogram about three months before delivery. QRS complexes were normal. Atrial rate was roughly 180/min. Periods of variable atrioventricular conduction were recorded in all limb and augmented leads.

to respond to cardioversion may imply abnormal atrial automaticity as the basic mechanism.

The pharmacological treatment of supraventricular tachycardias in pregnancy is similar to that in non-pregnant women.⁴ The most commonly used agents are digoxin, quinidine, and beta adrenergic blocking drugs, all of which appear to be safe with regard to fetal development. Nevertheless, although the risk of interference with fetal development or physiology is small it is preferably avoided. We therefore chose DC cardioversion, which is not contraindicated in pregnancy and does not harm the fetus.⁵ Although this failed to terminate the tachycardia, attempts at pharmacological termination and long term treatment were not considered in view of the lack of symptoms or objective evidence of left ventricular impairment.

We conclude that persistent atrial tachycardia may be uniquely associated with pregnancy. In the absence of symptoms or associated heart disease treatment may not be necessary, provided that careful monitoring is undertaken.

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