ACCIDENTAL DIGOXIN POISONING IN A CHILD OF 2 YEARS

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In view of the rarity of reports on 'digoxin' poisoning in children the following case is described.

Case Report

The patient, a healthy boy aged 2 years, was first seen in the Casualty Department where the mother gave a history of his having swallowed some 29·25 mg. tablets of 'digoxin' an hour previously. The tablets were unsweetened and had an unpleasantly metallic after-taste. His stomach was promptly washed out, the washings showing no obvious fragments of tablets, and a dilute solution of tannic acid was instilled. At this stage the child's general condition was perfectly normal but he was nevertheless admitted to the ward. Clinical examination and electrocardiography at this time were both normal, the heart rate being 112 a minute, with a normal sinus rhythm.

Four hours after the ingestion of 'digoxin' there began a change in the child's condition. He started to vomit, both spontaneously and when given fluids, and the pulse rate began to fall. Twelve hours after admission the pulse rate and the apex rate were both 60 a minute and an E.C.G. showed heart block with an auricular rate of 120 and a ventricular rate of 60, though the characteristic RT segment and T wave changes of digitalis were not apparent.

Vomiting continued intermittently for two days but subsided spontaneously. The bradycardia accompanied by a strong radial pulse persisted for four days.

During the period of intoxication careful observation was maintained for the onset of peripheral circulatory failure and of cardiac failure, and repeated E.C.G. tracings were made to detect as early as possible the development of ventricular irritability.

For four days the child lay quietly in bed, but, on the fifth day after admission, corresponding with a change in the cardiac rhythm to a sinus bradycardia, he became more active.

The patient was discharged 10 days after admission when clinical examination and an E.C.G. revealed no abnormality.

Discussion

Schneeweiss (1952) described a case where a boy of 3 years swallowed 70·25 mg. tablets of 'digoxin'.

Though, as in the case described above, the stomach was washed out within an hour, within three hours the child's pulse rate slowly dropped and became irregular. He was unable to obtain tracings of the arrhythmia but treated the patient with comparatively large doses of atropine by subcutaneous injection and oral quinidine. Complete recovery took place.

Magidson and Suffern (1952) described a case where a boy of 3 years swallowed 30·25 mg. tablets of 'digoxin' together with six 'fersolate' tablets and four compound codeine tablets. Vomiting began nine hours later, a delay due perhaps to the codeine, and continued for 24 hours before medical aid was sought. On admission to hospital, stomach and bowel were washed out. An E.C.G. showed partial heart-block and marked RT segment and T wave changes. This case was treated with 1/150 grain atropine sulphate and coramine. An E.C.G. the following day showed a normal rhythm though RT segment and T wave changes persisted. Five days after ingestion the E.C.G. was normal.

Early on in the management of the present case it was decided to withhold specific treatment until the onset of cardiac or peripheral circulatory failure or the development of ventricular irritability. In deciding upon this course we were influenced by the lack of satisfactory evidence as to the safety and the efficiency of the drugs available.

On theoretical grounds the treatment of ventricular irritability would be either by quinidine or by procaine amide. However, there are cardiologists who, having treated patients with heart block developing ventricular arrhythmias with procaine amide (Wedd, Blair and Warner, 1951) and quinidine (Di Palma and Schultz, 1950), declare them to be either ineffective or dangerous. Robbin, Goldfein, Schwartz and Dack (1955) suggest that in the presence of heart block when asystole, ventricular tachycardia or fibrillation develop, isoprenaline is the drug of choice.
As it turned out, the patient was well able to deal with the problems posed by heart block without the help of specific agents.

The present case stresses the importance of thorough and early gastric lavage in spite of a child's good condition as the value of later treatment is so doubtful. Subsequent treatment should be governed by the clinical state and repeated electrocardiograms.

Summary
A case is described where a child swallowed 7.25 mg. 'digoxin' and survived, though heart block persisted for four days.

The treatment of 'digoxin' poisoning is considered.

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References
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