its mesentery, which was rather indurated. The foreign body was 6 in. (15 cm.) from the ileo-caecal junction. There was no evidence of diffuse peritonitis. The splinter was removed and the patient made an uneventful recovery. She had no recollection of swallowing the splinter.

Case 3.—A man aged 34, an epileptic, had had appendicectomy performed elsewhere in 1952. Since then he had constant, sometimes severe, pain in his scar, and by 1954 he was showing signs of an incisional hernia, for which he was admitted. At operation the scar tissue was peculiarly oedematous and appeared almost cartilaginous, and deep in the wound was found a spicule of bone $2\frac{1}{2}$ in. (6.3 cm.) long penetrating from adherent small intestine into the abdominal wall. Owing to the danger of infection, which subsequently developed, the hernia was not repaired at this time, but was dealt with successfully later. He had no recollection of swallowing this bone. The interesting point arises, whether or not the bone was the cause of the original complaint (as in Case 2 above). One cannot be conclusive, but the history of constant pain since the original operation is suggestive.

COMMENT

It is not suggested that this condition should be kept in mind in the differential diagnosis of every "acute abdomen," but it could be remembered with profit during laparotomy, when the pre-operative diagnosis proves wrong and nothing else can be found. If the foreign body be overlooked the abdomen may seem quite normal, as there may be no evidence at that time of diffuse peritonitis.

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Stokes-Adams Attacks in Bundle-branch Block

"People with heart disease do not faint." Exceptions to this valuable general rule are few. Severe aortic stenosis may be a cause of syncope of exertion, if the stenosis is severe and the heart muscle not too good. Auricular flutter may cause syncope from cerebral anaemia during short periods of 1:1 block, when the heart rate is raised to a high figure and the cardiac output becomes uneconomic. Myocardial infarction, where shock is severe, is a cause of unconsciousness. Since Stokes's original description in 1854, Stokes-Adams attacks have been a well-recognized cause of sudden, brief, and total unconsciousness. Stokes-Adams attacks are presumably due to involvement of the idioventricular pacemaker, at the upper part of the bundle of His, in the pathological lesion which is causing the heart-block. This association is well recognized in complete or partial auriculo-ventricular dissociation. There is no logical reason why such a pathological lesion should not be so placed in the bundle of His that it causes permanent bundle-branch block, transient heart-block, and infiltration of the auriculo-ventricular node to an extent sufficient to produce Stokes-Adams attacks during such transient heart-block. This possibility, so far as I am aware, was first envisaged and described in a communication I made to the British Cardiac Society in 1948, but which was not published. The following paragraphs summarize this communication.

Case 1.—This patient was a man of 70 who, for seven months previously, at intervals of a month or less, had frequent attacks of syncope. These were abrupt in onset, lasted three to five seconds, and were not followed by headache, drowsiness, or any other sequelae. He was just as well after the attacks as before. The heart showed moderate enlargement on cardioscopy. There was a harsh systolic murmur at the apex base. The heart rate was 56 and was regular. The blood pressure was 116/72. The cardiogram showed a P-R interval of 0.2 second and a prolonged QRS complex, with evidence of right bundle-branch block. He was given ephedrine, $\frac{1}{2}$ gr. (32 mg.) thrice daily, and from that day, a period of twenty-one months, has remained free from attacks.

Case 2.—A woman of 61 had a two-years history of from four to eight weeks' interval between attacks, the frequency of which had increased for a month or two previous to examination. The attacks were abrupt and were not fol-

lowed by sequelae, nor were they preceded by any warning. They lasted ten seconds, for the husband was in the habit of counting ten seconds, by which time he knew that his wife would recover. She had been thoroughly investigated for epilepsy. There was an aortic systolic murmur. The blood pressure was 150/90. The cardiogram showed an increased P-R interval of 0.23 second and bundle-branch block. Cardioscopy showed moderate enlargement. Further tracings taken to exclude a previous infarct were done, and in two of these a transient true heart-block, with dropped ventricular beats, was shown.

Both of these patients had a history of attacks of unconsciousness of abrupt onset, lasting for a few seconds only, and not followed by any headache, disorientation, drowsiness, or other sequelae suggesting epilepsy. In both cases there was evidence of a bundle-branch lesion. In each case the administration of ephedrine eliminated the attacks, which had previously been frequent. A third similar case is now reported.

CASE 3

A man aged 55, with no significant past or family history, had for three years previous to examination been conscious of a sudden feeling lasting for a few seconds, which would "well up" and cause him to feel dizzy and lost. In a number of them he had in fact abruptly and completely lost consciousness. He had stopped driving his car and riding. He had not suffered from dyspnoea, coronary symptoms, or other cardiovascular complaints. His work was journalistic and sedentary.

On examination he looked well. The heart rate was 60, the rhythm was regular, the blood pressure was 180/98. The heart sounds were clear and normal. There were no basal rales. The liver was not enlarged. There was no oedema of the legs or feet. The electrocardiogram was that of classical complete left bundle-branch block (see Fig.). Radiologically the heart was normal in size and shape, the transverse diameter by orthodiagraph being 13.3 cm.

Case 3. Electrocardiogram showing complete left bundle-branch block. Leads I, II, III, V_1 , V_2 , V_3 .

The diagnosis of Stokes-Adams attacks was made in an individual free from auriculo-ventricular dissociation, but with a left bundle-branch block. Ephedrine, $\frac{1}{2}$ gr. (32 mg.), three times a day after meals, was advised, the dose if necessary to be raised to 1 gr. (65 mg.) three times a day after meals. Five months later his general physician wrote as follows: "Ever since the ephedrine tablets have been taken regularly the attacks have stopped completely. Prior to this, of course, he had thirty to forty attacks during the previous two years. I thought you would like to have this interesting news of the patient."

COMMENT

The differential diagnosis of such cases, in view of the abruptness of the attacks and the complete unconsciousness, must lie between epilepsy, symptomatic or idiopathic, and unusually abrupt vasovagal syncope. The presence of a bundle-branch lesion should always rouse suspicion that the attack may be due to Stokes-Adams syndrome. In all three cases I have mentioned a therapeutic dose of ephedrine has both confirmed the diagnosis and freed the patient from an unpleasant symptom.

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