amphetamine. These last findings were confirmed in the human by my patient. As stated above, she needed many more prelude tablets to obtain the same stimulant effect as a few of dexamphetamine gave her.

Preludin has been used in the treatment of psychiatric conditions. Spiegelberg (1954) has reported favourably on its use for "psychiatric conditions, psychopathic reactions, and endogenous depressive states." There are also reports on prelude in the treatment of obesity by Berneike (1954) and Rostalski (1954) from Germany and by Gelvin, McGavack, and Kenigsberg (1956) from the U.S.A. In none of these series of cases are toxic manifestations reported.

Amphetamines were placed on the Schedule I list of poisonous drugs a few months ago. The occurrence of a toxic psychosis as a result of taking excessive doses of prelude—which is without some of the protective unpleasant side-effects of amphetamine—shows that the latest "slimming drug" is not without hazard and should also be placed on the Schedule I list.

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Haemorrhage from Primary Carcinoma of the Liver Complicating Pregnancy

Primary carcinoma of the liver is a rare neoplasm. Of even greater rarity is sudden haemorrhage from such a growth complicating a pregnancy.

CASE REPORT

A Chinese woman aged 43, in the 30th week of her 13th pregnancy, was admitted to the Kandang Kerbau Hospital, Singapore, on June 23, 1956, complaining of abdominal pain, dyspnoea, and general malaise. Nothing abnormal was known of her previous medical and obstetrical history.

On examination her general condition was poor and she looked anaemic. There was some oedema of the feet and ankles. The heart sounds were normal and the blood pressure 140/80 mm. Hg. Several spider angiomas were present over the shoulders. On abdominal examination the size of the uterus corresponded to the period of amenorrhoea. A single foetus was presenting by the head, and the foetal heart was heard. No definite diagnosis was made.

Two days later her dyspnoea increased and engorgement of the neck veins was noted. The liver was thought to be palpable to a distance of two fingerbreadths below the costal margin. Some crepitations could be heard at the lung bases. Her temperature was 102.2° F. (39° C.). A provisional diagnosis of incipient cardiac failure was made and appropriate treatment instituted, including systemic penicillin.

The next day jaundice developed. Her haemoglobin was 42% (Sahli) and the total white-cell count 10,200 per c.mm. The urine contained albumin. Urobilin and urobilinogen were present. The icteric index was 40 and she had a direct triphasic van den Bergh reaction. A physician thought the condition was basically a lung infection with a superimposed infective hepatitis and mild cardiac failure due to beriberi.

For the next four days her condition remained much the same. To counteract her anaemia a transfusion of packed red blood cells was given, and by July 6 she seemed rather better, although the jaundice had remained constant. A week later she became quite drowsy and complained of pain in the right hypochondrium. Her temperature was still raised. The liver was still palpable below the costal margin and tender. The possibility of amoebic hepatitis was considered. X-ray examination of her chest confirmed an upward enlargement of the liver as judged by an elevation of the right dome of the diaphragm.

On July 20 she developed severe upper abdominal pain, and a very tender mass was palpable in the right hypochondrium. The blood pressure fell and her pulse rate started to rise. The clinical picture suggested an "acute abdomen," and it was decided to perform a laparotomy. On opening the abdomen free blood and clots were found. The uterus looked normal. To facilitate the search for the source of the haemorrhage a classical caesarean section was performed and a live female infant, weighing 3 lb. 12 oz. (1,800 g.), was delivered. The bleeding was found to be coming from the liver. This organ was much enlarged and cirrhotic, and its capsular surface was covered with large clots of blood. It was obvious that nothing surgical could be done for the condition. A small portion of liver was removed for histological examination and the abdomen closed. The patient's condition was now grave and she died 14 hours later. Permission for a post-mortem examination was refused.

The pathologist's report on the biopsy specimen was: "The normal architecture of the liver columns is lost in many areas and the cells are many layers deep, with much mitotic activity. Areas of haemorrhage are also seen. Diagnosis: hepatoma."

COMMENT

All investigators are agreed on the comparative rarity of primary carcinoma of the liver. In a review of 76,776 necropsies performed in the United States of America, Blatchford (1952) found only 183 cases. Tull (1932) found 134 cases in a total of 17,664 necropsies performed in Singapore—an incidence of 0.76%. The disease appears to be less common in races living under the conditions of Western civilization and to be more common among tropical and Eastern peoples—for example, the Bantus of Africa, the Japanese, the inhabitants of South China, the Philippine Islands, and the Malay States (Webb, 1945).

It has long been recognized that primary carcinoma of the liver arises, almost invariably, in livers which are already cirrhotic. Muir (1908) pointed out that it is particularly prone to develop in that type of hepatic fibrosis characterized by conspicuous nodular hyperplasia. The racial and geographical incidence of the condition does suggest that primary carcinoma of the liver and "tropical cirrhosis" are associated, and the latter is now generally believed to result from a diet deficient in protein. There is good reason to suspect that this patient's diet, in common with that of many others in this part of the world, was deficient in protein, although containing enough carbohydrate to prevent marked wasting. In searching for aetiological factors attempts have been made to implicate infestations with intestinal parasites such as *Entamoeba histolytica*, *Schistosoma*, and *Clonorchis sinensis* as precursors of primary carcinoma of the liver, but no convincing evidence is available (Trevathan, 1954).

Haemorrhage from rupture of the liver in pregnancy has been reported in the literature in a number of cases, but the complication has usually been the result of the hepatic lesions of eclampsia. Rupture of the normal liver from direct trauma, unless of severe degree, is said to be unlikely. In the abnormal liver even minor trauma might precipitate a break in a capsule weakened by disease (Schnabel, 1935). Therefore, in any case of known disease of the liver, rupture of the organ should be thought of in the presence of a picture simulating a sudden acute surgical condition in the abdomen.

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