pregnancy there has been only a single failure to give relief. No complication or difficulty of any kind has been met with.

COMMENT

In watching the progress of these patients, I have felt the results of operation have been almost always much better than I expected. Perhaps this is because so many of the patients were young women, but I believe that another important factor may be the elastic and mobile character of the puerperal tissues. It seems possible that the parts are better able to achieve a natural adjustment when the displacement has not existed for long, and, during the phase of tissue mobility, when there is adequate support by the perineum during involution. I do not mean to suggest that all patients can be dealt with effectively in this manner, and no doubt a more elaborate operation may be needed ultimately in some cases. At the same time, it does seem possible to give much relief, if not permanent cure, by a simple procedure, at a moment in a woman's life when time is of great importance and during a phase that calls for continued effort. There can be no doubt that nearly all these patients would have continued to suffer much discomfort and pain for many years before presenting themselves for operation in the orthodox way. The procedure has given great satisfaction and might be more widely used.

L. G. HIGGINS, F.R.C.S.

Mammary Gland Changes During Chlorpromazine Therapy

Since chlorpromazine hydrochloride ("largactil") has been undergoing widespread trial in the treatment of psychiatric disorders and in the management of the elderly, with promising results, there have been reports in the literature calling attention to certain complications and important side-effects, notably jaundice. There is little doubt that the drug modifies certain endocrine functions, either directly or indirectly. The case described below is, I believe, of considerable interest, in that there were mammary gland changes and unexpected breast development.

CASE REPORT

The patient, a single woman aged 67, has been in a mental hospital most of her life, having been certified in 1908. Perusal of her case notes shows that the illness was of schizophrenic nature. She was childish, emotional, stubborn, and had attacks of excitement, screaming, and sobbing. At times she laughed for no obvious reason, was resistive and troublesome, and could not give a coherent account of herself. Dullness, apathy, and withdrawal from reality were very apparent. This mental state persisted, and by 1932 she was continually muttering to herself, was auditorily hallucinated, and was faulty in bodily habits and hygiene. Her case notes showed that in 1950 she was thought to be deteriorating further. At this stage impulsive behaviour and destructiveness showed themselves. Electric convulsion therapy brought only the most temporary improvement. When she was having a routine mental and physical examination on July 5, 1955, there was little change in her psychiatric condition as described above. The only significant findings on physical examination were a blood pressure of 200/90, a moderate degree of atherosclerosis, and an undernourished appearance. Her breasts were involuted, and she was quite flat-chested. The optic fundi were within normal limits, and no retinopathy was present.

This patient, among 48 other females, was considered suitable for a trial of chlorpromazine therapy, and treatment began on July 6, 1955. With gradual increase over the first few days, she was eventually having a daily total of 150 mg., in tablet form and in three divided doses. This dosage continued for three months, during which time she seemed to tolerate the drug quite well. By October 10 there was considerable mental improvement, and in November the

patient was continuing to have chlorpromazine 25 mg. three times a day as a maintenance dose. She was then clean in habits, tidier in person and appearance, and quieter, and she no longer required sedation. She took an interest in her surroundings and did some knitting. Her conversation was relevant and coherent, although at times it was no more than a shy whisper. Whereas she was previously a problem patient, she became manageable, co-operative, and a willing and helpful ward worker.

During treatment she gained 12 lb. (5.3 kg.) in weight; and the most striking change was marked bust development and increase in size of the breasts—out of all proportion, it is felt, to the weight increase (see illustration). The development was not merely explained by deposition of fat. There was definite growth of mammary gland tissue, and a comparison with the previous picture of atrophic and involuted breasts showed a striking change. Secretion from the nipples was not observed. No oedema was found in this patient, nor was there any sign of congestive or circulatory failure. Uterine haemorrhage did not occur.

COMMENT

Reference to the British literature has failed to reveal a description of the changes of the nature and extent of those described above. Reports by Cohen (1955) and Gäde and Heinrich (1955) note secretion from the mammary gland, either with or without some increase in breast size, during administration of chlorpromazine hydrochloride. The increase in weight found in many of these cases does not seem to be accounted for by water retention, nor is it satisfactorily explained by improvement in the mental state (Elkes and Elkes, 1954). My patient has had weight fluctuations of ± 12 lb. (5.4 kg.) over the past ten years.

Winnik and Tennenbaum (1955) report the occurrence of galactorrhoea in 21 patients treated with chlorpromazine. The ages of these women ranged from 18 to 45 years, and none had previously had any transitory or persistent pathological secretion of milk. In five of these patients the psychosis appeared during the post-partum period, and milk secretion, which had been suppressed by drugs, reappeared during chlorpromazine therapy. In contrast with normal lactation, these authors found that the breasts were not enlarged; the condition was unilateral in six of their series.

The phenomena described lend support to the hypotheses related to the diencephalon, which have been put forward to account for the action of chlorpromazine hydrochloride on the central nervous system. Similar changes have been found in endocrine disturbances, notably the syndrome of Chiari and Frommel, and in some cases of neoplasm of the diencephalo-hypophyseal system.

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