breast occurring after castration at the menopause. This hypothesis stands to be confirmed or disproved by frequent estimations of the amount of folliculin circulating during the years following castration. Since comment on these anatomical and clinical findings can be made only with the help of experimental data, it is important to measure here the extent of our ignorance in this field. It must be admitted that three factors are undoubtedly present at the time of the appearance and development of mammary carcinoma—the milk factor (Bittner's mammary tumour inciter), the genetic factor, and the hormonal factor. Of these the clinician knows only one. Wooley and Little, for example, have convincingly demonstrated that only certain strains of mice develop suprarenal hyperplasia after castration, and van Gulik, Korteweg, and Muilbock, of Amsterdam, have shown, following the work of Lacassagne (1939), that sensitivity to oestrone varies according to the strain studied.

Conclusions

Until clinicians possess as many data concerning their patients as experimental workers have concerning their mice, castration by surgery or irradiation will never become a therapeutic procedure the efficacy of which can be guaranteed. On the contrary, there are perhaps cases where sterilization will have harmful effects. From the practical point of view these and other observations on castration performed for carcinoma of the breast, either already treated or first seen in an advanced stage, leads to the following conclusions.

(a) When carcinoma of the breast begins after castration, or even in spite of castration, the prognosis should be regarded as bad unless castration was performed near the time of the menopause. Castration has therefore, above all, a value in prognosis.

(b) Routine castration after treatment of the carcinoma is not a guarantee against later manifestations of the malignant condition. The problem is evidently not the same as in the cases discussed here, since the mammary tumour has been removed or irradiated. The point is to assure prophylaxis against local recurrence or metastases to bones or viscera. The sensitivity of these different sites to the action of hormones is very variable, and there is no proof that all of them are likely to be influenced. We know, for example, that a recent case of surgical castration, done shortly after combined surgical and x-ray treatment for carcinoma of the breast in a woman of 34, was followed after three months by the appearance of extensive mediastinal and pulmonary metastases. Recently Rudler reported similar cases at the Académie de Chirurgie. The fact that castration, advocated more than fifty years ago by Shinzinger and Beatson, has never been generally accepted as a favourable measure is proof of its relative ineffectiveness. At present the results reported by Horsley (1947) are often quoted; he combined surgical castration with treatment of the primary lesion and obtained excellent results over a period of five years. I think that the restricted number of these cases and the follow-up period of five years render these results open to criticism, and observation of our own cases castrated at the menopause shows that the value of this procedure can be judged only after an interval of at least ten years.

(c) Castration by surgery or irradiation in advanced carcinoma of the breast has given us two good temporary results (of 3 to 13 months) in ten cases in which the castration was performed surgically; of 28 cases in which castration was performed by irradiation 14.39% showed some degree of remission. Cases of highly malignant carcinoma appearing in recently castrated young women make us consider the possibility of failure of castration in similar circumstances.

However, the immediate favourable effects, even on the day of operation, on the pain of vertebral metastases or on the lymphatic infiltration in the mammary region, lead one to envisage a special neuro-hormonal or vasomotor effect of castration rather than a long-lasting endocrine effect.

Surgical castration has, especially for me, an academic interest, since on four occasions out of ten I have found metastases from the mammary tumour in the ovary. In these four instances manifestations of malignancy were severe, and it is possible that the occurrence of metastases in the ovary brought about an exacerbation of the condition. This is a valuable pathological argument in favour of systematic castration after treatment of carcinoma of the breast, but the endocrine problem will not be settled on this single fact. Thus, although there still exist some reasons for castration in carcinoma of the breast, the prognosis of this condition after castration should remain very guarded.

Summary

Thirty-two cases of carcinoma of the breast have been observed after castration by surgery or irradiation. They represent 1.6% of a series of 2,000 cases. Only four of these patients have survived for ten years without recurrence. Many tumours grew rapidly despite castration. The longest interval before the appearance of carcinoma was in women castrated between the ages of 40 and 50. Some comments are made and conclusions reached on the value of castration in cancer of the breast.

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CONGENITAL HEMIATROPHY ASSOCIATED WITH OTHER CONGENITAL DEFECTS

BY

W. L. CALNAN, M.B.

Minimal body asymmetry is very common in human development. Halperin (1931), in discussing normal asymmetry, states that the left side of the body is slightly larger than the right, particularly the cerebral hemisphere, skull, face, leg, and breast. When the inequality is such that it is noticed at or soon after birth it constitutes one of the rarest congenital abnormalities. The case reported here was associated with partial dental aplasia, cutaneous pigmentation, and talipes equinus.

Case Report

A girl aged 3 years 2 months was admitted to hospital in status epilepticus. Subsequent investigation showed that this was due to whooping-cough with bronchopneumonia. The status epilepticus was followed by a left-sided hemiplegia, which cleared up completely after five days. The cerebrospinal fluid was normal. The Wassermann reaction was negative in mother and child.

The patient was a full-term second baby, and pregnancy and labour had been normal. The birth weight was 8 lb. (3.6 kg.). The child was bottle-fed. The father developed shingles about one week after the estimated date of conception. Both parents are alive and well. There is no familial disease or abnormality. At birth the child exhibited a vesicular eruption on the left leg and on the dorsum of both hands. This condition lasted about four months and healed with scarring, particularly on the left leg. The aetiology of this eruption is uncertain and may have been a bullous impetigo. Brown pigmentation of the skin was also present at birth, and it has not altered in character or distribution.

When the child was 3 months old the mother noticed that the left leg was shorter than the right. At 1 year the child walked with a painless limp, and the left leg was considered to

be weaker than the right. At 18 months she was seen by an orthopaedic surgeon, who found $\frac{3}{8}$ -in. (0.95-cm.) shortening of the left leg. Recently the mother has had difficulty in obtaining a pair of shoes to fit both feet.

Examination

The child is thin and has a small face with a receding chin: height, 38 in. (96.5 cm.); weight, 26 $\frac{1}{4}$ lb. (12 kg.). She is right-handed. Although moderate in degree, the smallness of the left leg is immediately noticed. No scoliosis is seen clinically.

Head.—The left side seems flatter than the right, with narrowing of the left palpebral fissure. The ears and pupils are equal.

Skin.—There is an increased amount of hair present on the left arm and leg. Scalp hair is equally distributed. Atrophic hairless scars are present on the left arm and leg, corresponding to the site of the vesicular eruption in infancy. Melanotic linear pigmented areas are present over the anterior part of the trunk on the left side, extending for 2 in. (5 cm.) down the front of the thigh. This pigmentation is also present over the lateral wall of the thorax on the right side. It does not show a somatic segmental distribution. There are no cutaneous naevi, no evidence of scleroderma, and no difference in sweating on the two sides.

Teeth.—Some deciduous and permanent teeth are absent. The distribution of the teeth is shown in Table I: of the deciduous teeth, the lateral incisor and first molar are absent from the right upper and lower jaws, and the upper lateral incisor is absent from the left side. No deciduous teeth are present in the left lower jaw. Of the permanent teeth, the lateral incisor, both pre-molars, and the second and third molars are absent from the right side in both upper and lower jaws, and in addition the canine is absent from the lower jaw. In the left upper jaw only the medial incisor and first molar are present. In the left lower jaw the only permanent unerupted tooth present resembles a canine in its radiological appearance, but it is well developed and calcified and shows some features of a lateral incisor.

TABLE I

e c a	a c d e	6 3 1	1 6
e c a		6 1	2 (?)
Deciduous teeth		Permanent teeth (calcified unerupted)	

Limbs.—The measurements are shown in Table II. The apparent smallness and shortening of the limbs on the left side are more striking than would be expected from the differences in measurements. All movements of the left leg are weaker than those of the right. A talipes equinus is present on the left side. Tilting of the pelvis when standing is seen clinically and radiologically. The difference in size of the long bones has been confirmed radiologically. Bone architecture is normal. The skull is normal radiologically. The bone age agrees with the chronological age, and no difference has been detected between the two sides.

TABLE II.—Measurements of Limbs

	Left	Right
Arms:		
Length of whole arm	28.5 cm.	29.0 cm.
Circumference of upper arm	16.5 cm.	16.2 cm.
Circumference of forearm	15.4 cm.	16.0 cm.
Length of third finger	5.8 cm.	6.0 cm.
Legs:		
Length of whole leg	46.0 cm.	47.6 cm.
Length of thigh	25.2 cm.	26.0 cm.
Length of lower leg	20.8 cm.	21.6 cm.
Circumference of thigh	29.0 cm.	30.1 cm.
Circumference of calf	18.7 cm.	19.8 cm.
Length of foot	14.5 cm.	15.0 cm.
Half circumference of trunk at level of umbilicus	26.5 cm.	28.0 cm.

The child's mental development is normal, and no abnormality was found in the central nervous system.

Discussion

In 1927 Kraus and Perkins reviewed the literature on hemiatrophy and collected 18 cases, of which only five were not associated with motor disorders such as hemiplegia and athetosis. They classified hemiatrophy into congenital, familial, and acquired types. The hemiatrophy may be partial or complete. The sex distribution is equal. Hemiatrophy more commonly affects the left side of the body, as opposed to hemihypertrophy, which is commoner on the right side. Later, Landauer (1939) was able to collect 22 cases of partial or complete hemiatrophy, mostly in America.

Mental defect and cutaneous abnormalities are common in cases of hemihypertrophy, but are rarely associated with hemiatrophy.

Only one of the cases of hemiatrophy reported by Kraus and Perkins showed cutaneous abnormality. The case reported by Masten (1936) showed cutaneous pigmentation and defects of the nails of the fingers and toes on the atrophied side. I have been unable to find a previous report of dental aplasia associated with unilateral atrophy. There is no familial history of dental or cutaneous abnormalities in the present case. The distribution of the teeth that are present shows some degree of symmetry.

The occurrence of transient hemiplegia affecting the left side following convulsions suggests an abnormality in the right cerebral hemisphere. Unfortunately it was not possible to carry out encephalography in this case. Ross (1941) found cerebral atrophy in cases of infantile hemiplegia. Penfield and Robertson (1943) examined cases of growth arrest and atrophy, and at operation found lesions (e.g., scarring) in the post-central gyrus of the contralateral cortex. The majority of their cases followed birth injury.

The aetiology of congenital hemiatrophy is still obscure. In the above case the history of shingles in the father shortly after the estimated date of conception of the child may be significant. It is possible that the male germ-plasm was affected by the virus, and this may have caused a defect in the resulting embryo. The asymmetry is probably apparent very early in foetal life. Phisalix (1888) found a 10-mm. human embryo which was asymmetrical. A case of congenital hemihypertrophy reported by Wakefield and Hines (1933) was associated with complete bilateral deafness. No further details are given.

Hemiatrophy is sometimes seen in chondrodysplasia (Ollier's disease), which is essentially a condition affecting one side of the body. Certain features of the case of hemiatrophy reported by Zondek (1945) were suggestive of Ollier's disease. There was no such evidence in my case.

Very few cases of congenital hemiatrophy without motor disorders are reported, but the condition is probably more common than a review of the literature suggests. There is a considerable variation in the degree of asymmetry in the cases, and also in the extent to which this asymmetry develops with growth of the patient. Both sides of the body may grow at the same rate or the difference may increase.

When the case is seen at an early age it is sometimes difficult to decide which is the abnormal side and whether the case is one of hemiatrophy or hemihypertrophy.

The association of dental aplasia predominantly on the left and the left-sided talipes equinus, muscle weakness, cutaneous pigmentation, and transient hemiplegia indicate that the left is the abnormal side in the present case.

Summary

A case of congenital hemiatrophy, associated with partial dental aplasia, cutaneous pigmentation, and talipes, is reported.

A possible aetiological factor is mentioned.

I am indebted to Dr. M. E. Edmunds for permission to publish this case and for much helpful criticism and advice.

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Medical Memoranda

A Case of Mepacrine Dermatitis

The following record is of interest because of several features not previously reported.

CASE REPORT

The patient was a private in the R.A.M.C., aged 36, with two years' service. He had previously been a plumber. In November, 1946, he had a generalized rash, most pronounced over the shoulders, loins, buttocks, internal aspects of forearms, and external aspects of legs. The axillae, palms, and soles were free. The rash consisted of deeply pigmented macules with petechiae, mainly in line with the ribs, and a keratotic follicular spiny element giving rise to a "nutmeg-grater" skin, chiefly present on the back. The nails were exfoliating and discoloured, and showed a pronounced heaping up—the so-called Beau line. The hair was thin on the scalp, and the outer third of the eyebrows had disappeared. There were some lichen-planus-like lesions of the mouth. No complaint of itching was made. The eruption had been present for three months.

The rash began on the waist after prickly heat at Singapore in March, 1946. It rapidly spread to the arms, legs, ears, feet, and forehead. The eyebrows and scalp hair began to fall at the same time, and the nails were also affected. The rash, originally red and irritating, soon developed into rough scaly spines, and had reached its present static state a month later. The patient had taken mepacrine for six months and had been in India for eight months before the eruption appeared. He had not noticed any irritation from khaki. The eruption had been diagnosed in Singapore as tropical lichenoid dermatitis.

He had suffered from backache and pains in the loins for the past six months, but had not had any other diseases. His mother has had a scaly rash of uncertain origin on her legs for many years. He complained of malaise and poor eyesight. On examination the B.P. was 120/65 mm. Hg. Nothing abnormal was found in the heart and lungs, abdomen, C.N.S., lymphatics, and upper respiratory tract. Urine: no albumin, sugar, bile; no deposit. Kahn test was negative. B.S.R., 8 mm. in one hour. A blood count showed: Hb, 118%; red cells, 5,500,500; C.I., 1.02; white cells, 6,600 (polymorphs 56%, lymphocytes 37%, monocytes 2%, eosinophils 5%). Platelets numbered 720,000 per c.mm. A radiograph revealed some calcified areas in the right base, but no evidence of active infiltration. The heart shadow was normal. The Hess tourniquet test was negative. Liver function shown by the Quick and Schlesinger tests was normal. A skin biopsy was done and the pathological report stated: "There is an increase in the stratum corneum. The granular layer appears more distinct than normal. There is considerable

widening of the papillae, and the pars papillaris contains an excess of free and fixed cells and many melanophores." The mepacrine patch-test was negative. Soon after starting an oral test course of mepacrine the patient's lesions were aggravated. In addition he described a burning irritation of the hands and feet, which had not previously been affected. About this time he suddenly developed mental symptoms of a schizoid type, with confusion and excitement. On stopping the drug the mental condition rapidly returned to normal and the skin to its former state. Mental symptoms have been seen in cases of mepacrine intolerance (Gaskill and Fitz-Hugh, 1945; *British Medical Journal*, 1945; Duncan Shiers, 1946).

A variety of local applications and vitamin therapy appeared to have no specific effect, and this has been the general experience (Sulzberger and Baer, 1945). A year later the lesions were still present but showed considerable improvement, and the pigmentation was less intense.

COMMENT

There seems to be little doubt that in this case mepacrine was the cause of the dermatitis. The association of the skin condition with cerebral symptoms has not previously been described, and the nail dystrophy, which was such a pronounced feature, has not received much attention. Pigmentation (Lutterloh and Shallenberger, 1946) and loss of nails (Wilson, 1946) have been mentioned as occurring, while it is known by fluorescence under Wood's light that mepacrine is excreted in the nails (Kierland *et al.*, 1946). In the present case the Beau line of the nail corresponds in date with the first acute appearance of the eruption three months before. Growth of the nail has been normal since. Especially noteworthy is the long continuance of the eruption since cessation of the drug 18 months ago.

Acknowledgment is due to Dr. J. E. M. Wigley and to Dr. I. Muende for help in the investigation of this case, and to the War Office for permission to publish.

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Rheumatic Pericarditis with Hyperpyrexia

It is stated by Miller in the *British Encyclopaedia of Medical Practice* that "rheumatic hyperpyrexia has now virtually disappeared. When it occurred it was almost always associated with acute pericarditis and was at one time usually fatal. It was always much commoner in adults than in children."

The following report of the case of a young soldier in which the temperature reached 109.2° F. (42.9° C.), with recovery, may therefore be of some interest.

CASE REPORT

A signalman aged 19 was admitted to a military hospital on Dec. 11, 1947, complaining of pains and stiffness affecting the wrists, knees, and ankles. He had had quinsy in childhood, hernia at 13, and appendicitis with peritonitis in July, 1947. There was no history of scarlet fever, rheumatic fever, or growing pains.