HERMAPHRODITISM: A HISTORICAL APPROACH

VICARY LECTURE BY DR. CAWADIAS

The Thomas Vicary Lecture of the Royal College of Surgeons of England was delivered before the President and Council on November 26 by Dr. A. P. Cawadias, whose subject was "Hermaphroditism."

Beginning with a definition of terms, Dr. Cawadias said that hermaphroditism should be taken as synonymous with intersexualism. It was a constitutional condition, or disease, characterized by the presence of male and female features in the same individual. There were three classes of hermaphrodites or intersexual beings: (1) the male hermaphrodite, the feminized man, in whom the male sex predominated; (2) the female hermaphrodite, the virilized woman, in whom the female sex predominated; and (3) the complete hermaphrodite or bisexual being, with complete sexual organs, both male and female. The textbooks notwithstanding, this last condition did not exist in humans.

The Greeks and Earlier

The ancient Eastern peoples, the Assyrians and others, imagined a bisexual deity or perfect being, a mystical image through which they tried to solve the problem of the sexes and the phenomenon of fertility. The cult of bisexual deities was taken over by the Greeks, whose bisexual deity was Hermaphroditus, but between the Greek god type of grace and charm, the harmonious blending of feminine beauty and adolescent virility, and the colossal, ugly, terrifying Oriental bisexual deities there was an immense difference.

It was during the Hellenic period that the really scientific view of human intersex began to be formed. The Greeks regarded the human being as a whole, a biological unit reacting to its environment. They observed accurately, reasoned close to the facts, and rejected all mystical and supernatural explanations. The ancient Greek physicians gave the first description of the two great classes of intersexualism. Hippocrates described both androgynoidism, or male intersex, in his "Disease of the Scyths"—what was known to-day as eunuchoid feminism—and gynandroidism, or female intersex, in his "Epidemics," and studied what was now described as the Cushing syndrome. The Greeks also described incomplete forms, *formes frustes*, of intersexualism. Aristotle pointed out the feminine nature of hypospadias, saying of such patients that they seemed to have the nature of man and woman at the same time. The male intersexualism of the Scyths was attributed by Hippocrates to the destruction of the semen through various diseases due to excessive horse-riding and their ill-considered treatment. For female intersexualism Hippocrates accepted the predominant role of ovarian dysfunction, and wrote, "We had the impression that if we could bring back the menstruation the symptoms would retrocede." Intersexualism was considered by the Greeks as a disease, a natural phenomenon, not a manifestation of divine wrath or a fitting indication for the cruelty shown by the Romans or at the Renaissance.

Succeeded by the Dark Ages

After the brilliant Greek period came the "period of fables," the dark ages of the history of intersex, beginning with Pliny in the first century, but continuing until the end of the eighteenth. Instead of accurate observations the physicians accepted tales in a remarkably uncritical spirit and persisted in superstition. The authors of this period described females turning into males; they did not accept the transformation of males into females, believing Nature to be progressive, from the imperfect to the perfect, from the female to the male. Ambroise Paré, a great surgeon but just as credulous as his contemporaries, reported the case of a "girl" who at the age of 15, on jumping over a stream, discovered to her horror male genital organs appearing at her perineum, no doubt to be explained as a case of cryptorchidism.

The greatest error of the physicians of this period was the notion of complete hermaphroditism among human beings. Some of the physicians who followed Pliny pretended to have seen such beings. In the works of Arnaud, a French surgeon established in London in the eighteenth century, there was an account of two hermaphrodites of Valencia who married each other and both became pregnant through mutual ministrations. These physicians even believed in bisexual beings capable of self-fertilization, of which there was an echo in the theory of Langerhans, who explained the genesis of testicular teratomata by postulating that an isolated ovarian element became fertilized in the testicle.

In this period hermaphrodites were maltreated as expressions of divine anger. Not only the monsters but their parents were put to death, and that as late as the seventeenth century. Even when superstition began to wane, cruelty persisted. Hermaphrodites were allowed to choose their own sex, or a sex was imposed upon them, but to that they had to adhere and were punished terribly if they used the prerogatives of a sex which was not theirs.

The Mechanistic Physiological Period

The lecturer next came to the period which, although it began with Sydenham and Harvey, centred principally in the nineteenth century. The first clinical advance in this period was the description of the two genuine classes of intersexes as introduced into science by the Greeks. This fuller and more accurate clinical study was rendered possible by John Hunter and later by Charles Darwin in their conception of primary and secondary characters, the former comprising the organs effecting reproduction, and the latter the other features characterizing sex but not involved in reproduction. Dr. Cawadias himself gave a clinical grouping of sexual features: gonadal, genital, morphological, mental, and vocal.

A second line of advance in clinical knowledge was the isolation and description of incomplete forms, *formes frustes*, of intersexualism. Masochism and travestism—the latter, in the male, a love of feminine dress and adornment—had been so described, as had certain cases of male homosexuality, and there were similar *formes frustes* in female intersexualism, a female sadistic form, and so on. The third and most recent advance in clinical study of the intersex in this period related to physiopathological forms, of which adrenal gynandroidism—a female intersexualism depending on hyperfunction or dysfunction of the adrenal cortex—was the best known.

Although this period marked distinct progress, it fell short of the Hellenic period by its acceptance of complete hermaphroditism. Klebs, who was mainly responsible for the propagation of this erroneous conception, maintained the existence of complete hermaphroditism on the ground that some individuals possessed both ovary and testicle. In all cases of "complete" hermaphroditism described even to-day the testis or the ovary was rudimentary and not functioning. Bisexualism could not be accepted on such slender evidence. Was there a normal woman who did not possess in her ovarian medulla testicular rudiments, or a normal woman who did not secrete testosterone? According to Klebs's criterion all normal women should be considered true hermaphrodites.

The lecturer next traced the rise of the study of the endocrine mechanism of intersexualism, especially through the painstaking work which began with Brown-Séquard, demonstrating the masculinizing influence of the testis through its hormone, testosterone, and the feminizing influence of the ovary through its oestrogenic hormone. Subsequent work had shown the masculinizing influence of other endocrine glands, mainly of the adrenal cortex, and the feminizing influence of the thyroid. Intersex had been shown to originate in a disturbance of balance between the opposing hormones. Speaking of endocrinotherapy in this sphere Dr. Cawadias said: "I know of no fact more capable of increasing our faith in internal medicine than the complete transformation of repulsively feminized boys into normal virile adolescents, thanks to a few hormonic injections, or the change into beautiful and complete womanhood of girls with hairy faces and bodies and thick and acne-ridden skin, thanks to oestrogenic hormone therapy." But these almost magical results certainly did not justify the orgy of glandular injections given at random, often by men ignorant of the complicated physiology of the internal secretions.

The Biological Period

Coming to the contemporary period of medicine, which he described as the biological, Dr. Cawadias said that it was

Br Med J: first published as 10.1136/bmj.2.4222.818 on 6 December 1941. Downloaded from http://www.bmj.com/ on 19 April 2024 by guest. Protected by copyright.

characterized by the consideration of the living being as an integrated unit. The biological thinking of Hunter and Darwin had been carried on by such physiologists as Gaskell, Sherrington, Haldane, and the "clinicians of the whole man," maintaining in medicine the Hippocratic spirit. The development of sex was now better understood, and therefore disturbances in that development resulting in intersex became clearer. It was shown how sometimes, in the normal mechanism of sex development, the sexoformic impulse was deflected at a certain stage, and development then continued according to the opposite sex. This deflection could occur at various phases; the earlier it occurred the fewer organs differentiated, and therefore the more marked was the intersex. It proceeded from two groups of factors: hereditary weakness of the genetic impulse and factors of environment, the latter including education, imitation, and social *milieu*.

Sex was not a fixed feature; it was the result of an evolution, which continued. The lower beings remained at the stage of asexualism. Later sexual characters appeared, but coexisted in the same being (namely, plants and some lower animals); later still the sexes separated, and complete unisexuality could not be conceived at this, the human, stage of evolution.

In passing, the lecturer noted one differentiation between the sexes. Feminism in men—for example, in the male castrate—was regarded as a retrogression, but certain male features acquired by women were regarded as not abnormal but as perfecting the woman. He instanced Lady Hester Stanhope, the niece of William Pitt, a mild adrenal gynandroid, whose features and build were masculine, and whose courage, behaviour, and domineering tendencies were traits associated with the male sex, and yet she was admired, and had some sentimental and even physical adventures.

The Basis of Sex

The ovary and testis were not the basis of sex, but merely manifestations or results of the initial genetic sexoformic impulse, which in human beings was either male or female and never bisexual. A female was not the appendage of her ovaries, to use Virchow's phrase, but had ovaries because she was female. A male was not male because he had testes; he had testes because he was male. There was neither absolute male nor absolute female. Every male had more or less latent female features, and vice versa. Intensification of this normal intersexualism characterized the disease hermaphroditism, and all degrees were encountered.

As intersexualism was biologically a disease of the whole individual, not merely a disease of a particular endocrine gland, any treatment must be directed to the whole constitution. Had we any right to punish an individual who showed the homosexual form of intersexualism? Theoretically we had no such right. A male homosexual of intersexual origin was in fact an intersex who wanted to be a female. On the other hand, a homosexual was a focus of infection. Such a boy at school infected others, causing sex reversal through psychological factors, and handicapping them for life. The duty of society to such persons was to cure them or to prevent them from harming others.

Finally Dr. Cawadias touched on adrenal virilism, a special problem by itself. When it was due to a tumour, the indication for operation was the tumour, not the intersexual state. When it arose as an adrenocortical hyperplasia the problem was more complex. In adult cases no demasculinizing adrenalectomy should be performed if the patient wished to remain male. But the principle of sex choice should not be pushed so far as to withhold adrenalectomy in infantile cases of adrenal virilism, for the results of the operation were so brilliant that it was not justifiable to risk for these subjects the persistence of an intersexual state which, notwithstanding the predominance of one sex, was always a handicap.

The Ministry of Health has now issued in Circular 2395B the promised list of special clinics outside the Emergency Hospital Scheme which are to function as additional Fracture Clinics "C" (*Journal*, August 23, p. 290). Instructions on the method of referring cases to these clinics are being sent to all hospitals in the E.M.S.

HOSPITALS IN THE POST-WAR WORLD

INTERNATIONAL CONFERENCE IN LONDON

An international gathering filled the Great Hall of the British Medical Association House in London on November 25 when a conference was summoned by the United Kingdom Council of the International Hospital Association to consider the position of hospitals the world over at the dawn of peace. King Haakon of Norway, the Grand-Duchess of Luxemburg, and Dr. Benes, lately President of Czechoslovakia, attended, together with the Prime Minister of the Netherlands, the Belgian Ambassador, the Ministers of Norway, Venezuela, and Colombia, and official or other representatives of Poland, Yugoslavia, Greece, Palestine, Iraq, Egypt, Abyssinia, India, and China. The British Red Cross and the St. John Ambulance Association, the American Red Cross, and the Czech and the Netherlands Red Cross sent representatives, and there was a representative of the Free French Medical Corps. The Agents-General of several Australian States were present, as well as Sir Earle Page, the envoy of the Australian Government.

The Minister of Health (Mr. Ernest Brown) and the Secretary of State for Scotland (Mr. T. Johnston) attended, as did the Chief Medical Officer (Sir Wilson Jameson) and several officers of the Ministry, the President of the Royal College of Surgeons (Sir Alfred Webb-Johnson), the Chairman of Council of the British Medical Association (Mr. H. S. Souttar), and the representatives of many other bodies concerned with medicine, hospital administration, and social welfare.

Mr. W. McADAM ECCLES, chairman of the United Kingdom Council, presided over this assembly. At the outset a message was sent to the King, expressing gratitude for the interest he and the Queen have taken in the work of hospitals and the hope that with the swift coming of peace there may be freedom to continue and foster the healing art in every hospital in the world. Before the conference ended a gracious reply was received. A cable of greeting was also sent to the President of the International Association, Dr. MacEachern of Chicago.

International Hospital Collaboration

Dr. A. T. JURASZ, dean of the Polish Medical Faculty in the University of Edinburgh, opened a debate on the collaboration which must follow the war, a collaboration which must extend to all nations prepared to work together on a basis of honesty and friendliness. He suggested a greater interchange of personnel, both lay and medical; a six-months residence in the larger hospitals for graduates of different countries on a principle of international exchange, and an extension of post-graduate teaching. Prof. J. LOEWY (Czechoslovakia) followed with the suggestion for a "Health Union" among European countries, the basis of which would be the curative resources of each country, such as mountain sunshine or medicinal springs, and the distribution of patients without regard to national boundaries. Dr. GEORGE H. H. WOO (China) repeated the description of recent hospital progress in China which he gave to the China Institute the other day. Dr. KARL EVANG (Norwegian Minister of Social Welfare) said that in his country of three million inhabitants there was one hospital bed to every hundred of population. He believed that after the war the same system of hospital provision, based on sickness insurance, would continue. Dr. E. J. BIGWOOD (chairman of the Belgian Commission for the Study of Post-war Conditions) said that the Governments of the Allied countries at present in London had already considered a plan of action, both for immediate relief after the war and also for long-term development.

Hospitals in English-speaking Countries

Mr. McADAM ECCLES introduced a discussion on the special problems of English-speaking countries. It was not too early, he said, to consider problems that would arise as soon as peace was declared. He suggested that in any area the total number of beds required for in-patient treatment and the expected number of out-patients should be computed, the approximate annual cost per bed and per out-patient ascertained, allowance being made for some kind of sinking fund for the purchase of

Br Med J: first published as 10.1136/bmj.2.4222.818 on 6 December 1941. Downloaded from http://www.bmj.com/ on 19 April 2024 by guest. Protected by copyright.