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VARIATIONS OF BLOOD PRESSURE IN DISEASES OF THE HYPOPHYSIS

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In the descriptions of hypophysary syndromes up to a few years ago no mention was made, or mention was only made in passing, of the state of the blood pressure. Even after the discovery of the hypertensive action of the extract of the posterior lobe this phenomenon was given practically no importance in human physiology or pathology. Thus in 1908 Parisot,¹ in his book on blood pressure and the endocrine glands, gives no data whatever on the behaviour of the pressure in diseases of the hypophysis. A few years later the blood pressure begins to be mentioned in the literature on these diseases.

Review of the Literature

We will give a brief summary of the data of some of the chief authors. Cushing² states that the pressure is generally low in hyperpituitarism, even in patients who appear to be quite vigorous. He mentions Phillips,³ who suggests that hypertension may perhaps exist in the early phases of hyperpituitarism, and that it may disappear afterwards. (However, this is not the case in practice.) In hypopituitarism, according to Cushing, it is usual for the pressure to be low; where hypertension occurs there are other circumstances which might explain this symptom: a lesion of the nervous centres, or hyper-suprarenal states. In his recent book (1933) he adds nothing to these observations.⁴ Humphry and Dixon⁵ consider that acromegalic patients have a high pressure. Kraus⁶ does not refer to these data; neither do Vincent,⁷ Biedl,⁸ Blair-Bell,⁹ Sezary,¹⁰ Marañón,¹¹ nor Lucien, Parisot, and Richard.¹²

According to N. Pende¹³ the blood pressure in acromegaly is seldom high and is more often low, which may be influenced by a concurrent suprarenal insufficiency. Peritz¹⁴ asserts that it is usual to find a high pressure, which is explained by the increase in the amount of blood. Although Zondek¹⁵ is stated by many authors to favour the theory of the frequency and importance of high blood pressure in acromegaly, he really proceeds with great circumspection: "The pressure is generally high, but only slightly so; it is exceptional for it to reach 20 cm. maximum or to exceed this figure. In certain cases it is low; as low as 10 cm. maximum or even less." According to Bauer¹⁶ there is no typical alteration of the pressure in acromegalic patients. Falta¹⁷ mentions several cases, in great detail, of acromegaly with normal blood pressure. Atkinson,¹⁸ in his book covering the whole field of acromegaly, refers to cases with high pressure (Alessandri, Claude and Baudin, Packard, Zondek), and to others with low pressure (Blassoe, Jung); but he does not give his own personal opinion. Borchardt¹⁹ describes the arteriosclerosis of advanced acromegalic patients, who usually have a high, sometimes a considerable, pressure.

A more complicated hypothesis is that of Brenning,²⁰ in whose opinion the hyperfunction of the anterior lobe of the hypophysis, which is the cause of acromegaly, does not by itself produce a high blood pressure; but

it would do so if it coincided with gonadal insufficiency, such as occurs in climacteric acromegaly. Rolleston²¹ refers to these observations of Brenning, and lays emphasis on the low pressure of the opposite syndrome—Simmond's cachexia. Kemp and Okkels²² state that, although there is a tendency towards arteriosclerosis and varicose veins in acromegalic patients, the blood pressure is not usually affected. Holland²³ also confirms the normal blood pressure.

The Pituitary and Blood Pressure

We have given this list to show how widely the opinions of clinicians differ. However, the majority of these are not based on personal cases, and they are mostly copied by one author from another without further investigation. As a matter of fact, very little importance was attached to these data, as we state above, and interest was only aroused when it was shown that a low pressure was constant in the hypopituitary syndromes and a high pressure was very frequent in basophil adenomas of the anterior lobe—that is, Cushing's disease. These two facts have served as the basis on which has been developed a whole theory as to the intervention of the anterior lobe of the hypophysis in the normal regulation of the blood pressure. As a result of this intervention low pressures would prevail in cases in which the hormone is deficient and high pressures when the hormone increases. A natural consequence of this is that experiments were undertaken to show that high pressures occur in the other hyperpituitary syndrome—that is, acromegaly.

We have expressed our criticisms of this hypothesis elsewhere.²⁴ In our opinion there is no proof that this gland exercises such an intervention in the blood pressure nor in its pathological variations. The high pressure of the basophil adenoma may be explained by a concurrent hyperfunction of the suprarenal glands; the low pressure of hypophysary cachexia by the coincidence of other lesions—probably the most frequent would be suprarenal insufficiency—and above all, a very poor general condition. With respect to the behaviour of the blood pressure in other hypophysary symptoms, we will set forth the results of our investigations. These refer to 138 clearly confirmed cases of hypophysary syndromes. This list does not include our cases of basophil adenoma (Cushing) as these have been dealt with in a separate paper.²⁴ They refer to the following states:

1. *Acromegaly.*

2. *Hyperpituitarism.*—By this we mean those cases of exaggerated osseous dystrophy which cannot, however, be diagnosed as real acromegaly. The diagnosis requires a very genuine accentuation of the deformities, accompanied by other symptoms. In many of these cases of hyperpituitarism we have found an enlarged sella turcica, although not with the same frequency and intensity as in real acromegaly. Several of these cases give the impression that they are elementary acromegalias.

3. *Giantism*.
 4. *Dwarfism*, with the typical traits of dwarfism of hypophysary origin.
 5. *Diabetes insipidus*.
 6. *Genital adiposity*, with hypopituitary syndrome (Fröhlich).
 7. *Hypophysary cachexia* (Simmond).
 8. *Hypophysary tumours*, with no general syndrome—or at the most with a slight adiposity or suppression of menstruation.

The results of our investigations are set out in the following tables:

TABLE I.—*Acromegaly*

No.	Age	Sex	Blood Pressure	Other Conditions	Notes
1	55	F.	cm. 23-10	Aortitis	High pressure (above 15 cm. max.) 5 cases = 11 per cent.
2	47	M.	19-14	Aortic aneurysm; renal sclerosis	
3	63	M.	18-9		
4	32	F.	18-5	Aortitis	
5	47	M.	16-10.5	Aortitis	
6	52	F.	15-9	Left gynaecomasty Left gynaecomasty Large varicose veins Rhinorrhoea Aortitis Sciatica Aortitis Melanodermia	Normal pressure (between 15-11 cm.) 36 cases = 81 per cent.
7	31	M.	15-7		
8	46	M.	15-7		
9	23	M.	15-6		
10	47	M.	15-8		
11	31	M.	15-6		
12	44	M.	14-7		
13	43	M.	14-6		
14	24	M.	14-7		
15	46	M.	14-8		
16	37	F.	14-6		
17	47	M.	14-6		
18	32	M.	14-8		
19	32	M.	14-9		
20	24	M.	14.5-8.5		
21	54	M.	13-6		
22	36	F.	13-6		
23	25	F.	13-6		
24	25	F.	13-8		
25	18	M.	13.5-5		
26	28	M.	13-9		
27	28	M.	13-8		
28	42	M.	13-5		
29	24	M.	13-9.5		
30	22	F.	12-8		
31	31	M.	12-8		
32	48	F.	12-7		
33	40	M.	12-7		
34	34	F.	12-9		
35	19	M.	12-8.5		
36	22	M.	12-8.5		
37	40	F.	11-6		
38	29	M.	11-8		
39	55	F.	11-6		
40	44	F.	11-7		
41	36	F.	11-8.5		
42	18	M.	10-6	Asthma	Low pressure (max. below 11 cm.) 3 cases = 6 per cent.
43	40	M.	10-8		
44	33	M.	9-7	Myxoedema	

Total: 44 cases.

TABLE II.—*Hyperpituitarism*

No.	Age	Sex	Blood Pressure	Other Conditions	Notes
1	40	F.	cm. 19-8	Hyperthyroidism; menopause Menopause	High pressure (max. above 15 cm.) 3 cases = 8 per cent.
2	42	M.	17-9.5		
3	42	M.	16-7		
4	21	M.	15-8	Epilepsy	Normal pressure (between 15-11 cm.) 29 cases = 85 per cent.
5	50	F.	15-8	Diabetes; aortitis	
6	17	F.	14-8	Intersexuality	
7	14	M.	14-8		
8	30	M.	14-7		
9	57	M.	14-8	Aortitis; emphysema; headache	
10	24	M.	13-7	Migraine	
11	25	M.	13-6	Intersexuality	
12	32	M.	13-7	Epilepsy	
13	15	M.	13-7	Epilepsy	
14	14	M.	13-7	Migraine; menopause	
15	38	F.	13-10	Aortitis; premature menopause	
16	24	M.	13-7		
17	25	M.	13-9		
18	33	M.	13-9		
19	32	M.	13-7.5		
20	28	F.	12-6	Epilepsy	
21	20	M.	12-8		
22	56	F.	12-6		
23	12	F.	12-7.5		
24	37	F.	11.5-7	Aortitis	
25	51	F.	11-6	Endocarditis	
26	12	M.	11-7		
27	17	M.	11-7.5		
28	27	M.	11-5.5		
29	27	F.	11-8		
30	23	F.	11-7		
31	23	M.	11-7.5		
32	16	M.	11-7	Gynaecomastia	
33	15	M.	10-8		Low pressure (max. below 11 cm.) 2 cases = 5 per cent.
34	25	M.	10-5.7		

Total: 34 cases.

TABLE III.—*Giantism*

No.	Age	Sex	Blood Pressure	Other Conditions	Notes
					High pressure (max. above 15 cm.) 0 cases = 0 per cent.
1	33	M.	cm. 14-7	Melanodermia Fröhlich type of adiposity	Normal pressure (between 15-11 cm.) 6 cases = 100 per cent.
2	11	M.	13-6		
3	11	F.	13-5		
4	16	M.	12-8		
5	21	F.	12-7		
6	17	M.	12-5		
					Low pressure (max. below 11 cm.) 0 cases = 0 per cent.

Total: 6 cases.

TABLE IV.—*Dwarfism*

No.	Age	Sex	Blood Pressure	Notes
				High pressure (max. above 15 cm.) 0 cases = 0 per cent.
1	16	M.	cm. 11-5	Normal pressure (between 15-11 cm.) 3 cases = 27 per cent.
2	12	M.	11-5	
3	7	M.	11-6.5	
4	11	M.	10-5	Low pressure (max. below 11 cm.) 8 cases = 73 per cent.
5	7	M.	10-6	
6	16	M.	9-6	
7	14	M.	9-6	
8	16	F.	9-6	
9	17	M.	9-4	
10	6	M.	8-4	
11	16	F.	8-5.5	

Total: 11 cases

TABLE V.—*Diabetes Insipidus*

No.	Age	Sex	Blood Pressure	Other Conditions	Notes
1	48	M.	cm. 23—13	Aortitis. Both parents had high pressures Hypophysary tumour	High pressure (max. over 15 cm.) 4 cases = 20 per cent.
2	38	F.	16—8		
3	50	M.	15—8		
4	58	M.	15—8		
5	23	F.	14—8	Epilepsy	Normal pressure (between 15-11 cm.) 14 cases = 70 per cent.
6	17	F.	14—8		
7	36	M.	13 - 7	Hypophysary tumour	
8	42	M.	13—8	Hypophysary tumour	
9	12	M.	13—8		
10	45	M.	13—10		
11	34	F.	12—7	Hypophysary tumour	
12	55	F.	12—6		
13	26	M.	12—9		
14	34	M.	11—5.5		
15	32	F.	11—6		
16	44	M.	11—7		
17	28	M.	11—6		
18	7	M.	11—7	Vitiligo	
19	35	F.	10.5—7.5	Multiple glandular sclerosis	Low pressure (max. below 11 cm.) 2 cases = 10 per cent.
20	25	F.	10—7		

Total: 20 cases.

TABLE VI.—*Fröhlich's Syndrome*

No.	Age	Sex	Blood Pressure	Other Conditions	Notes
1	53	M.	cm. 13—10		} High pressure (max. above 15 cm.) 1 case = 7 per cent.
2	25	F.	15—10	Syphilitic aortitis	
3	42	M.	14—8	Hypophyseary tumour	
4	25	F.	14—6	Aortitis	
5	43	F.	13—9.5		
6	25	M.	12—8.5		
7	19	M.	12—6		
8	17	M.	12—6		
9	23	F.	12—6		
10	15	M.	12—6	Gynaecomastia (acro- megalic father)	
11	13	M.	11—7		
12	25	F.	11—5		
13	18	M.	9—5		} Low pressure (max. below 11 cm.) 1 case = 7 per cent.

Total = 13 cases.

TABLE VII.—*Hypophyseal Cachexia*

No.	Age	Sex	Blood Pressure	Notes
1	32	M.	cm. 16-6	Typical, in spite of high pressure. High pressure (max. above 15 cm.) 1 case = 25 per cent.
2	25	F.	13-7	
3	52	M.	11-6	Normal pressure (between 15-11 cm.) 3 cases = 75 per cent.
4	19	F.	11-6	
				Low pressure (below 11 cm. max.) 0 cases = 0 per cent.

Total: 4 cases

TABLE VIII.—*Hypophyseal Tumour Without General Symptoms*

No.	Age	Sex	Blood Pressure	Other Conditions	Notes
					High pressure (max. above 15 cm.) 0 cases = 0 per cent.
1	29	F.	cm. 14-9	Adiposity without loss of menstruation Precocious meno- pause	Normal pressure (between 15-11 cm.) 5 cases = 83 per cent.
2	50	F.	13-8		
3	48	F.	13-8		
4	30	F.	12-6		
5	39	F.	11-7		
6	4	F.	7-4		Low pressure 1 case = 16 per cent.

Total: 6 cases.

Tables I to VIII are summarized in Table IX.

TABLE IX

Disease	Pressure	No. of Cases	Percentage	Average Age
Acromegaly	High	5	11	48
	Normal	36	81	33
	Low	3	6	30
Hyperpituitarism	High	3	8	41
	Normal	29	85	24
	Low	2	5	20
Giantism	High	—	—	—
	Normal	6	100	18
	Low	—	—	—
Dwarfism	High	—	—	—
	Normal	3	27	11
	Low	8	73	16
Diabetes insipidus	High	4	20	48
	Normal	14	70	31
	Low	2	10	30
Fröhlich's syndrome	High	1	7	53
	Normal	11	84	25
	Low	1	7	18
Hypophyseal cachexia	High	1	25	32
	Normal	3	75	32
	Low	—	—	—
Hypophyseal tumour without general symptoms	High	—	—	—
	Normal	5	83	37
	Low	1	16	4

Commentary

The above tables and the summary are sufficiently eloquent to make any comment unnecessary. It is obvious that changes in the internal secretion of the

hypophysis have no influence whatever on the blood pressure, since both states of hyperfunction and of hypofunction of the anterior and the posterior lobes have no connexion with uniform changes in blood pressure. The variations of pressure observed in our tables are merely the normal changes observed in any other group of patients, and are clearly due to causes which have nothing to do with lesions of the hypophysis. It will be observed that the higher pressures, in each of the diseases under study, generally correspond to older patients. The pressures for the average age coincide exactly with the average figures for that age, independently of the disease. In addition, with a few exceptions the highest pressures in isolated cases are partially explained by the concurrence of hypertensive vascular lesions (especially aortitis).

As stated, these statistics do not include the basophil adenoma of the hypophysis, which is generally accompanied by a high blood pressure. Our personal opinion, and that of other authors, that this high pressure is not due to any hypophysary change but to the concurrent hyperplastic lesion of the suprarenal glands, is thus confirmed by the data given, which appear to prove that hypophysary incursions have nothing to do with the regulation of the blood pressure.

SEBORRHOEIC DERMATITIS*

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In dermatological nomenclature there are few terms which have been used more inappropriately than seborrhoea, and as a result have led to greater confusion of the clinical aspect of the subject. Originally used to designate excess activity of the sebaceous glands, it came to be appended as a descriptive adjective to catarrhal conditions affecting areas richly supplied with these glands. Finally, a prominent group of eczemas, which had no objective similarity or clinical relationship to the catarrhs designated seborrhoeic by the originators of the conception, were classified together under the term seborrhoeic dermatitis.

Seborrhoea, or hypersecretion of sebum, leads to certain cutaneous disorders—namely, premature alopecia, acne, and rosacea. The inflammatory catarrhal conditions attributed to seborrhoea range from ordinary dandruff (pityriasis capitis) to a moist eczema which may become generalized, and the closest association which any of these have with seborrhoea is that they very often begin on or in the region of the scalp. In a large percentage of cases they do not even occur on a skin which has a hyperactive sebaceous system. All these catarrhs are almost certainly organismal in origin, and the bacteria or vegetable parasites found in association with them, and presumed to be the causative agents, are also found as normal skin saprophytes. It is not surprising, therefore, that in a proportion of cases the two distinct types of such catarrhs are combined. The fact that in some cases the catarrhs occur on an oily skin is no argument in support of a seborrhoeic causation any more than an incidence in pigmented skins would favour a melanogenic aetiology.

An analysis of the varied descriptions of lesions which are included under seborrhoeic dermatitis reveals that it comprises two distinct clinical types of cutaneous reaction: (1) pityriasis, and (2) flexural eczema. Each of these may evolve in a definite direction and thus enlarge the clinical picture.

* Read to the Section of Dermatology at the Annual Meeting of the British Medical Association, Oxford, 1936.

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Pityriasis

Ordinary dandruff, or pityriasis capitis, met with at all ages, needs no description. The addition of an inflammatory element to this affection, with the production of small medallion or petaloid-shaped dry red scaly areas (eczematides) which occur on the scalp, the presternal and interscapular areas, and are variously called seborrhoea corporis, flannel rash, seborrhoeic dermatitis, and seborrhoeide, is well known. Occasionally the inflammatory catarrh is widespread, but usually preserves its dry character. In many cases seborrhoea is conspicuously absent, and the patient volunteers the statement that his skin is abnormally dry. In spite of the erroneous application of the term seborrhoea (seborrhoea sicca to dandruff, seborrhoea corporis to the eczematide lesions) to these two disorders, they are clear-cut, recognizable in textbook descriptions, and are different stages of a common infection (probably yeast infection).

It is the moist eczematous forms included under the term seborrhoeic dermatitis which are the most confused, although clinically they constitute an important and well-defined group of eczemas. They arise spontaneously, have no connexion whatever with seborrhoea, have no necessary association with pityriasis, and harbour an entirely different flora from it. Lastly, the scalp is by no means the common point of origin, for these eczemas are essentially flexural in situation.

Flexural Eczema

In contrast to the dry patchy catarrhs associated with pityriasis the flexural eczemas exhibit a marked exudative character. By far the most common site of origin for this type of flexural eczema is the retro-auricular region, and the initial lesion is usually a fissure at the upper or lower end of the lobe of the ear where it joins the scalp. From this lesion a moist exuding eczema reaction spreads to involve the back of the ear and the adjacent surface of the scalp. The fully developed lesion is characterized by its clear-cut edge in the form of a segment of a circle, by a fissure surrounded by whitish sodden epidermis at the depth of the retro-auricular fold, and by profuse exudations from small pin-point holes (eczema pits) scattered over the entire inflamed surface. Fibrinous crusting is variable in amount. The extension of the