CLINICAL REMARKS ON CASES OF ACROMEGALY AND OSTEO- ARTHROPATHY.

By GEORGE R. MURRAY, B.A., M.B.CAMB., M.R.C.P.LOND.,

Heath Professor of Comparative Pathology in the University of
Durham; Pathologist to the Hospital for Sick Children,
Newcastle-on-Tyne.

CASES of true acromegaly are rare, and only a small number of them have as yet been recorded in this country. Two cases which have come under my observation present certain features which are worthy of record. A third case, which has some of the characters of pulmonary osteo-arthritis, is also of interest from the unusual nature of the enlargement of some parts of the extremities which has taken place. The notes of these cases are unfortunately very short and incomplete, for the patients were only seen a few times and continuous observations could not be made. All these cases resided in the county of Durham.

Fig. 1.

CASE 1.—T. W., aged 34, married, and the father of four healthy children, four years and a-half before he came under treatment, while at work in the gasworks, accidentally inhaled an overdose of coal gas and was unconscious for six hours. He recovered from the immediate effects of this, but had never felt quite well since. Six months later he began to have attacks of pain in the fingers, the proximal interphalangeal joints of the middle and ring fingers in each hand being chiefly affected. The pain sometimes lasted only a few minutes, at others as much as an hour, and at times extended up to the shoulder. For about two years the patient's friends had noticed that his face had altered in appearance owing to an increase in the size of the nose and sinking in of the cheeks. He thinks that possibly the hands had increased in size somewhat even before that time. He began to feel languid and disinclined to work. The feet also

gradually increased in size, so that he was obliged to get larger and larger boots. It appears probable that he had syphilis seventeen years ago.

His father had died after a "stroke." His mother died of "jaundice." One brother died of "abscesses." One sister died from a "strain," two are living.

He complains of aching pains in the hands, worst at night and in damp weather. He has no headache, tinnitus, nor deafness. He is languid and disinclined to work, and would willingly lie in bed all day if he was not obliged to work for his living. The memory has failed somewhat, and his temper has become irritable. He complains of weakness of the legs, but the arms feel as strong as ever. All these symptoms improve very much when he becomes heated at his work as a fireman. His appearance is striking, and at once suggests the nature of the disease to anyone who is familiar with the general features of acromegaly. This is well shown in Figs. 1 and 2, from photographs kindly taken for me by Dr. R. Bolam. The forehead is low and deeply wrinkled transversely. The margin of each orbit is prominent, and the palpebral fissure is narrow, giving the whole face an expression of great anxiety and depression of spirits. The nose is large and thickened in all dimensions. The lips are thick and heavy, the lower lip being more affected than the upper. The chin is wide and rather mas-

Fig. 2.

sive. The upper incisor teeth are separated from each other. When the mouth is closed the lower incisors project in front of the upper. The tongue and uvula are both distinctly enlarged, the ears are thickened, the hands are increased in size. The enlargement involves both hard and soft structures alike; the consistence is firm, and there is no "pitting" on pressure. The fingers are rather like sausages in shape, and the palms are broad. The thenar and hypothenar eminences are large and broad. The hands are closed with difficulty. If the fingers are extended after they have been flexed the middle finger of the left hand remains flexed till a few seconds have elapsed. The arms do not appear to be increased in size. The feet are considerably enlarged; this change is most marked in the first and second toes. The circumference of the neck has increased by 1 inch. The thyroid gland can be felt and is not diminished in size. An

area of dulness can be detected over the upper part of the sternum. There is marked kyphosis in the upper dorsal region of the spine. There is some enlargement of the right clavicle and of the upper ribs on the same side. There is less perspiration now than there was formerly. The amount of urine is stated to be rather less than usual; the specific gravity is 1030. The urine does not contain albumen or sugar.

Dr. A. S. Percival has been kind enough to examine the eyes, and finds the following condition: Vision $\frac{1}{2}$ with difficulty. The fields of vision are slightly contracted above, due to the exaggerated prominence of the eyebrows and the swelling of the eyelids. On examination with the ophthalmoscope a linear streak of pigment is seen lying above a retinal vessel, which is probably the site of a hæmorrhage. Nothing else of interest is to be seen.

Measurements of the Patient.

	Inches.
Length of hand from lower fold of wrist to end of middle finger	$7\frac{1}{2}$
Length of middle finger from palmar fold at base	$3\frac{1}{2}$
Dorsal length of middle finger from base of first phalanx	$4\frac{1}{2}$
Palmar length of little finger	$2\frac{1}{2}$
Circumference of hand (without thumb) at head of metacarpal bones	9
Circumference of middle finger	$3\frac{1}{2}$
Circumference of thumb	3
Circumference of little finger	$2\frac{1}{2}$
Circumference of wrist immediately below extremities of ulna and radius	$7\frac{1}{2}$
Circumference of wrist at level of styloid process	$7\frac{3}{4}$
Circumference of forearm at the middle	10
Circumference of arm at the middle	10
Length of nail of middle finger	$1\frac{1}{2}$
Length of nail of thumb	$1\frac{1}{2}$
Breadth of nail of middle finger	$\frac{1}{2}$
Breadth of nail of thumb	$\frac{1}{2}$
Greatest length of foot	10
Circumference over heel and instep	13
Greatest circumference of foot	$11\frac{1}{2}$
Greatest width of foot	4
Circumference of great toe	$4\frac{1}{2}$
Circumference of little toe	$2\frac{1}{2}$
Length from top of forehead to tip of chin	$8\frac{1}{2}$
Length from top of forehead to upper part of nasal bones	$2\frac{3}{4}$
Length from upper part of nasal bones to tip of nose	$2\frac{1}{2}$
Greatest width of alæ nasi	2
Distance from tip of nose to point of junction with upper lip	$1\frac{1}{2}$

For several weeks this patient was treated with thyroid extract, and after three weeks the languor had diminished and the neuralgic pains had disappeared. These symptoms, however, returned afterwards while he was still taking the extract, so that it is doubtful if the temporary improvement was due to this remedy. Dr. Byrom Bramwell¹ has also observed some improvement in the symptoms of one case of acromegaly while taking thyroid extract, though in another case the symptoms were aggravated, while the administration of pituitary extract was followed by improvement.

CASE II.—J. T., a widow, aged 34, who had had five children, four years before she came under treatment first noticed that she was becoming "stout" and began to feel constantly languid and weary. In the morning there was often some swelling beneath the eyes. The face gradually altered in appearance as all the features became enlarged. The nose became larger and the lips thicker, and so great was the change that even friends who had not seen her for a time failed to recognise her again. The hands also increased in size and the skin became coarse. Not long afterwards a prominence appeared in the lower cervical region of the spine.

The patient complained of a pain in the head, which shot through it from the suboccipital region to the root of the nose, of a constant craving for food, and of excessive thirst. She had a great dislike to seeing strangers, which might be accounted for by her altered looks. In appearance she was prematurely aged, and her face constantly wore an expression of anxiety and weariness.

All the features were large and coarse. The nose was notably enlarged and thickened. The brows were large and heavy, and the lips considerably thickened. The lower jaw did not appear to be larger than normal. The hands at once attracted attention by their large size. The enlargement was general and uniform, but the forearm did not show any increase in size. The shoulders were large and massive, and the muscles connected with the shoulder-joint unusually well developed. There was a distinct prominence of the spine in

the lower cervical region, owing to a curve in the spine which had its concavity forwards. The upper ribs on the right side were unduly prominent, the second and third being distinctly larger and thicker than the corresponding ribs on the opposite side. The feet did not exhibit any special enlargement. The urine, passed in large quantities, had a specific gravity 1040, and contained a considerable amount of sugar. The pulse varied between 100 and 132; it was regular but feeble. No menstruation had occurred during the last two years. Dr. A. S. Percival kindly examined the eyes, and found that the defective sight was chiefly, if not entirely, due to errors of refraction. The pupils reacted sluggishly both to light and to accommodation. There was no defect of the field of vision. There was a slight peripheral contraction of the field for green. On examination with the ophthalmoscope there was no evidence of optic nerve atrophy nor any abnormality to be observed. Dr. T. Coke Squance has kindly informed me that this patient subsequently died in the Sunderland Infirmary, pulmonary phthisis being the immediate cause of death. Dr. Squance has already described² the *post-mortem* changes which he found in this case. There was considerable hypertrophy of the pituitary gland; the thyroid gland was enlarged, and weighed nearly 2 ounces. The thymus was persistent and the left lobe hypertrophied.

In these two cases the symptoms of acromegaly were so well marked that the appearance of the face and hands at once indicated the nature of the disease. The two patients resembled each other very much in appearance and might have been taken for brother and sister. Cases of acromegaly frequently have a kind of family likeness to each other, as the changes which take place tend to obliterate the special characters of each feature of the face and so bring about a similarity to a common type. The improvement of the symptoms in the first case while the patient was at work in front of a hot fire is interesting, though I have not seen it mentioned in the description of any other case. Polyuria is not an unusual symptom in acromegaly, but the association of diabetes with acromegaly is not so common, though it has been noted twice by Marie and once by Strümpell.³ The enlargement of the pituitary, thyroid, and thymus glands in the second case is similar to that which has been described in other cases.

CASE III.—F. W., aged 40, single, a painter, first noticed that the terminal phalanx of each thumb was enlarged and the nail discoloured six years before he came under notice. Soon afterwards the terminal joint of the left middle finger and the same joint of the right ring finger became enlarged and painful; the toes began to increase in size about the same time. The finger-joints continued to enlarge slowly to the present time. He thought that during the last two or three years the nose had enlarged and the face changed in appearance. He was under the impression also that the lower jaw was rather larger than it was twelve months before. When 20 years old he had an attack of gonorrhœa. When about 27 or 28 he had phthisis and was sent to South Africa, after which the disease appears to have been arrested, though he has had to take several voyages since to maintain his health.

The nose appears to be slightly enlarged and thickened, otherwise the appearance of the face does not indicate any special change, though the patient himself thinks that there is some enlargement of the ears and chin. The circumference of the head and also of the neck has not increased. The terminal phalanx of the right ring finger is enlarged, and the nail is broadened, discoloured, and grooved longitudinally. The terminal joint of this finger is enlarged and semi-flexed. The enlargement of the joint is fairly uniform and is soft on the extensor aspect. The circumference measures $2\frac{1}{4}$ inches, whereas the corresponding joint on the left measures an inch and a-half in circumference. Both thumbs are considerably enlarged, and the nails are broad, discoloured, and grooved. The terminal phalanx, nail, and joint of the left middle finger are enlarged in the same manner as on the right ring finger, the circumference of the joint being $2\frac{1}{4}$ inches, half an inch greater than that of the

² BRITISH MEDICAL JOURNAL, November 4th, 1893, p 993.

³ *Acromegaly*, P. Marie and Souza-Leite, Sydenham Society's Translation, p. 53.

same joint of the right middle finger. These enlargements are shown in Fig. 3, from a photograph taken by Mr. R. C. Ruddock,

Fig. 3.

of Newcastle. In the palm of each hand there is a band of Dupuytren's contraction, which is connected with the ring finger on the right and with the middle finger on the left; thus the contraction has developed in connection with the fingers in which the enlargement of the terminal joints has taken place. There is some enlargement of the feet, and larger boots are now worn in consequence. The metatarsophalangeal joint of the left great toe is enlarged. The phalanges of this toe are enlarged, especially in a vertical direction. The phalanges of the other toes appear to be somewhat enlarged also. On the right there is a similar enlargement of the toes, but it is not so marked as on the left. In other respects the feet do not look larger than usual.

There is an area of dullness on percussion over the apex of the right lung in front. There are, however, no signs of active disease, so that this is probably the site of the tuberculous disease detected twelve years ago, which became arrested after a sea voyage to the Cape.

The chief features in this case are the peculiar enlargement of certain terminal phalanges and joints in association with Dupuytren's palmar contractions and old pulmonary disease. The case is a peculiar one, and differs in many ways from both acromegaly and hypertrophic pulmonary osteo-arthritis as described by Marie.⁴ Mr. Jonathan Hutchinson, who has been kind enough to examine the patient, has expressed the opinion⁵ that it is a case of pulmonary osteo-arthritis, complicated by a tendency to gout, due to his occupation as a painter, and evidenced by the development of Dupuytren's contractions in the palms.

THE LETTSOMIAN LECTURES

ON THE

COMBINATIONS OF MORBID CONDITIONS OF THE CHEST.

Delivered before the Medical Society of London.

By FREDERICK T. ROBERTS, M.D.,

Professor of Materia Medica and Therapeutics at University College; Physician and Professor of Clinical Medicine at University College Hospital; Consulting Physician to the Brompton Hospital for Consumption and Diseases of the Chest.

LECTURE II.

VI.—COMBINATIONS IN ACUTE CASES.

a. Acute Conditions Supervening on Chronic.—Dr. Roberts said that there was a natural disposition to accept an acute condition as the whole of a case, whereas the acute changes might merely have supervened on chronic changes. In this connection he referred (1) to the presence of certain conditions of the chest walls already enumerated in the first lecture which impeded respiration; to (2) pleuritic adhesions; to (3) the occurrence of acute diseases as complications of chronic diseases, as for instance (*a*) acute bronchitis,

disseminated broncho-pneumonia, dry pleurisy or pleurisy with effusion in the course of phthisis; (*b*) acute bronchitis in chronic emphysema; and to (4) the occurrence of acute pulmonary congestion with cedema, of hydrothorax, of embolism, and of acute endocarditis as complications of chronic valvular disease.

With regard to (2) he spoke as follows:

PLEURITIC ADHESIONS IN ACUTE DISEASES.

The importance of pleuritic adhesions in relation to acute diseases of the chest is so manifest that I make no apology for discussing this point in some little detail. In the first place, it is interesting to note that when a local adhesion exists, the history of which is quite unknown, the corresponding limitation or undue prominence of signs of a bronchial catarrh may reveal its presence and site, and I have known this happen again and again in the same case. I have a strong impression that an apical adhesion may in this way prove a real source of danger, by predisposing to repeated irritation of the upper part of the lung, and thus laying the foundation for tuberculous infection.

A far more important condition to be noted in its association with acute affections of the chest is the existence of a unilateral basic adhesion, extending more or less upwards, the signs of which may or may not have been previously evident. There is generally a history of some acute illness, be it only known by the expression "congestion of the lungs," and of course the practitioner may be aware of all the facts of the case. This condition always acts as a predisposing cause for the special implication of the lower part of the affected lung, which is embarrassed by the adhesion, and even when the patient has merely a slight cold, but still more if he has a definite bronchitic attack, the signs usually become so marked and out of proportion over the corresponding base, that anyone who is not aware of the combination is very likely to attach far greater importance to them than they deserve, and to diagnose a serious congestion of the lung (which in a certain sense may be correct), or an actual pneumonia which does not exist. Therefore whenever moist râles, in more or less acute cases, are heard only or in marked excess over one base, other signs of pneumonia being absent, the possibility or even probability of an adherent pleura being the explanation should always be borne in mind.

There is one class of case to which I particularly wish to refer in connection with basic pleuritic adhesion. The tendency of this condition is not only to embarrass the lung, and probably to damage its structure to some degree, but also to retain secretions or any morbid products which may be formed in the bronchial tubes or air vesicles. I frequently meet with cases in which râles due to such accumulation are constantly present at one base, varying in their amount from time to time. Indeed, sometimes in association with a general agglutination they are heard extensively over one side, and I have ventured to give to these adventitious signs the term "adhesion râles." Now it occasionally happens in course of time that without any obvious increase in the physical signs, indicating either pneumonic consolidation or pulmonary destruction or suppuration, more or less acute general symptoms set in, much like those of phthisis, which increase in severity, until sooner or later the patient succumbs. Local symptoms may develop or increase, but not in proportion, and there is often only a small amount of muco-purulent expectoration. Sometimes signs indicating secondary progressive implication of the lung tissues in an upward direction supervene, but they do not point to anything like a cavity. No doubt many of these cases become actually tuberculous, and they would be classed as "basic phthisis," but certainly not all; at any rate, I have met with some in which experienced bacteriologists could not detect any tubercle bacilli in the sputum. I have a strong opinion, however, that the grave results in all these cases are really due to micro-organisms, probably of different kinds, which gain access with the inspired air into the base of the lung, where they find a suitable nidus in the retained secretions and morbid products, in which they grow and flourish and multiply, producing toxins which are absorbed, and by degrees poison the patient. Whatever may be the explanation, the practical lesson is that a basic adhesion accompanied with the persistent presence of râles is a condi-

⁴ Loc. cit., p. 71.

⁵ Clinical Journal, June 27th, 1894, p. 143.