

ON THE
CONSTITUTIONAL AND LOCAL EFFECTS OF
DISEASE OF THE SUPRA-RENAL CAPSULES.

It will hardly be disputed that at the present moment, the functions of the supra-renal capsules, and the influence they exercise in the general economy, are almost or altogether unknown. The large supply of blood which they receive from three separate sources; their numerous nerves, derived immediately from the semilunar ganglia and solar plexus; their early development in the foetus; their unimpaired integrity to the latest period of life; and their peculiar gland-like structure; all point to the performance of some important office: nevertheless, beyond an ill-defined impression, founded on a consideration of their ultimate organization, that, in common with the spleen, thymus and thyroid body, they in some way or other minister to the elaboration of the blood, I am not aware that any modern authority has ventured to assign to them any special function or influence whatever.

To the physiologist and to the scientific anatomist, therefore, they continue to be objects of deep interest, and doubtless both the physiologist and anatomist will be inclined to welcome, and regard with indulgence, the smallest contribution calculated to open out any new source of inquiry respecting them. But if the obscurity, which at present so entirely conceals from us the uses of these organs, justify the feeblest attempt to add to our scanty stock of knowledge, it is not less true, on the other hand, that any one presuming to make such an attempt, ought to take care that he do not, by hasty pretensions, or by partial and prejudiced observation, or by an over-statement of facts, incur the just rebuke of those possessing a sounder and more dispassionate judgement than himself. Under the influence of these considerations I have for a considerable period withheld, and now venture to publish, the few facts bearing upon the subject that have fallen within my own knowledge; believing as I now do, that these concurring facts, in relation to each other, are not merely casual coincidences, but are such as admit of a fair and logical inference - an inference, that where these concurrent facts are observed, we may pronounce with considerable confidence, the existence of diseased supra-renal capsules.

As a preface to my subject, it may not be altogether without interest or unprofitable, to give a brief narrative of the circumstances and observations by which I have been led to my present convictions.

For a long period I had from time to time met with a very remarkable form of general anaemia, occurring without any discoverable cause whatever; cases in which there had been no previous loss of blood, no exhausting diarrhoea, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, strumous, or malignant disease. Accordingly, in speaking of this form of anaemia in clinical lecture, I, perhaps with little propriety, applied to it the term "idiopathic," to distinguish it from cases in which there existed more or less evidence of some of the usual causes or concomitants of the anaemic state.

The disease presented in every instance the same general character, pursued a similar course, and, with scarcely a single exception, was followed, after a variable period, by the same fatal result. It occurs in both sexes, generally, but not exclusively, beyond the middle period of life, and so far as I at present know, chiefly in persons of a somewhat large and bulky frame, and with a strongly-marked tendency to the formation of fat. It makes its approach in so slow and insidious a manner, that the patient can hardly fix a date to his earliest feeling of that languor, which is shortly to become so extreme. The countenance gets pale, the whites of the eyes become pearly, the general frame flabby rather than wasted; the pulse perhaps large, but remarkably soft and compressible, and occasionally with a slight jerk, especially under the slightest excitement; there is an increasing indisposition to exertion, with an uncomfortable feeling of faintness or breathlessness on attempting it; the heart is readily made to palpitate; the whole surface of the body presents a blanched, smooth and waxy appearance; the lips, gums and tongue seem bloodless; the flabbiness of the solids increases; the appetite fails; extreme languor and faintness supervene, breathlessness and palpitations being produced by the most trifling exertion or emotion; some slight oedema is probably perceived about the ankles; the debility becomes extreme, the patient can no longer rise from his bed, the mind occasionally wanders, he falls into a prostrate and half-torpid state, and at length expires: nevertheless to the very last, and after a sickness of perhaps several months' duration, the bulkiness of the general frame and the amount of obesity often present a most striking contrast to the failure and exhaustion observable in every other respect.

With, perhaps, a single exception, the disease, in my own experience, resisted all remedial efforts, and sooner or later terminated fatally. On examining the bodies of such patients after death, I have failed to discover any organic lesion that could properly or reasonably be assigned as an adequate cause of such

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serious consequences; nevertheless, from the disease having uniformly occurred in fat people, I was naturally led to entertain a suspicion that some form of fatty degeneration might have a share at least in its production; and I may observe, that in the case last examined, the heart had undergone such a change, and that a portion of the semilunar ganglion and solar plexus, on being subjected to microscopic examination, was pronounced by Mr. Quekett to have passed into a corresponding condition. Whether any, or all, of these morbid changes are essentially concerned, as I believe they are, in giving rise to this very remarkable disease, future observation will probably decide.

The cases having occurred prior to the publication of Dr. Bennett's interesting essay on "Leucocythaemia," it was not determined by microscopic examination whether there did, or did not, exist an excess of white corpuscles in the blood of such patients.

It was whilst seeking in vain to throw some additional light upon this form of anaemia, that I stumbled upon the curious facts, which it is my more immediate object now to make known to the Profession; and however unimportant or unsatisfactory they may at first sight appear, I cannot but indulge the hope, that by attracting the attention and enlisting the cooperation of the Profession at large, they may lead to the subject being properly examined and sifted, and the inquiry so extended, as to suggest, at least, some interesting physiological speculations, if not still more important practical indications.

The leading and characteristic features of the morbid state to which I would direct attention, are, anaemia, general languor and debility, remarkable feebleness of the heart's action, irritability of the stomach, and a peculiar change of colour in the skin, occurring in connexion with a diseased condition of the "supra-renal capsules."

As has been observed in other forms of anaemic disease, this singular disorder usually commences in such a manner, that the individual has considerable difficulty in assigning the number of weeks or even months that have elapsed since he first experienced indications of failing health and strength; the rapidity, however, with which the morbid change takes place, varies in different instances. In some cases that rapidity is very great, a few weeks proving sufficient to break up the powers of the constitution, or even to destroy life; the result, I believe, being determined by the extent, and by the more or less speedy development, of the organic lesion. The patient, in most of the cases I have seen, has been observed gradually to fall off in general health; he becomes languid and weak, indisposed to either bodily or mental exertion; the appetite is impaired or entirely lost; the whites of the eyes

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become pearly ; the pulse small and feeble, or perhaps somewhat large, but excessively soft and compressible ; the body wastes, without, however, presenting the dry and shrivelled skin, and extreme emaciation, usually attendant on protracted malignant disease; slight pain or uneasiness is from time to time referred to the region of the stomach, and there is occasionally actual vomiting, which in one instance was both urgent and distressing; and it is by no means uncommon for the patient to manifest indications of disturbed cerebral circulation. Notwithstanding these unequivocal signs of feeble circulation, anaemia, and general prostration, neither the most diligent inquiry, nor the most careful physical examination, tends to throw the slightest gleam of light upon the precise nature of the patient's malady: nor do we succeed in fixing upon any special lesion as the cause of this gradual and extraordinary constitutional change. We may indeed suspect some malignant or strumous disease; we may be led to inquire into the condition of the so-called blood-making organs; but we discover no proof of organic change anywhere - no enlargement of spleen, thyroid, thymus or lymphatic glands, - no evidence of renal disease, of purpura, of previous exhausting diarrhoea, or ague, or any long-continued exposure to miasmatic influences: but with a more or less manifestation of the symptoms already enumerated, we discover a most remarkable, and, so far as I know, characteristic discoloration taking place in the skin, - sufficiently marked indeed as generally to have attracted the attention of the patient himself, or of the patient's friends. This discoloration pervades the whole surface of the body, but is commonly most strongly manifested on the face, neck, superior extremities, penis and scrotum, and in the flexures of the axillae and around the navel. It may be said to present a dingy or smoky appearance, or various tints or shades of deep amber or chestnut-brown; and in one instance the skin was so universally and so deeply darkened, that, but for the features, the patient might have been mistaken for a mulatto.

In some cases this discoloration occurs in patches, or perhaps rather certain parts are so much darker than others, as to impart to the surface a mottled or somewhat checkered appearance ; and in one instance there were, in the midst of this dark mottling, certain insular portions of the integument presenting a blanched or morbidly white appearance, either in consequence of these portions having remained altogether unaffected by the disease, and thereby contrasting strongly with the surrounding skin, or, as I believe, from an actual defect of colouring matter in these parts. Indeed, as will appear in the subsequent cases, this irregular distribution of pigment-cells is by no means limited to the integument, but is occasionally also made manifest on some of the internal structures. We have seen it in the form of small black spots, beneath the peritoneum of the mesentery and omentum - a form which in one instance presented itself on the skin of the abdomen.

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This singular discoloration usually increases with the advance of the disease; the anaemia, languor, failure of appetite, and feebleness of the heart, become aggravated; a darkish streak usually appears upon the commissure of the lips; the body wastes, but without the extreme emaciation and dry harsh condition of the surface so commonly observed in ordinary malignant diseases; the pulse becomes smaller and weaker, and without any special complaint of pain or uneasiness, the patient at length gradually sinks and expires. In one case, which may be said to have been acute in its development as well as rapid in its course, and in which both capsules were found universally diseased after death, the mottled or checkered discoloration was very manifest, the anaemic condition strongly marked, and the sickness and vomiting urgent; but the pulse, instead of being small and feeble as usual, was large, soft, extremely compressible, and jerking on the slightest exertion or emotion, and the patient speedily died.

My experience, though necessarily limited, leads to a belief that the disease is by no means of very rare occurrence, and that were we better acquainted with its symptoms and progress, we should probably succeed in detecting many cases, which, in the present state of our knowledge, may be entirely overlooked or misunderstood; and, I think, I may with some confidence affirm, that although partial disease of the capsules may give rise to symptoms, and to a condition of the general system, extremely equivocal and inconclusive, yet that a more extensive lesion will be found to produce a state, which may not only create a suspicion, but be pronounced with some confidence to arise from the lesion in question. When the lesion is acute and rapid, I believe the anaemia, prostration, and peculiar condition of the skin will present a corresponding character, and that whether acute or chronic, provided the lesion involve the entire structure of both organs, death will inevitably be the consequence.

If this statement be correct, and I quite believe it to be so, the chief difficulty that remains to be surmounted by further experience in this, I fear, irremediable disease, is a correct and certain diagnosis; - how we may at the earliest possible period detect the existence of this form of anaemia, and how it is to be distinguished from other forms of anaemic disorder. As I have already observed, the great distinctive mark of this form of anaemia is the singular dingy or dark discoloration of the skin; nevertheless at a very early period of the disorder, and when the capsules are less extensively diseased, the discoloration may, doubtless, be so slight and equivocal as to render the source of the anaemic condition uncertain. Our doubts, in such cases, will have reference chiefly to the sallow anaemic conditions resulting from miasmatic poisoning or malignant visceral disease; but a searching inquiry

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into the history of the case, and a careful examination of the several parts or organs usually involved in anaemic disease, will furnish a considerable amount of at least negative evidence; and when we fail to discover any of the other well-known sources of that condition, when the attendant symptoms resemble those enumerated as accompanying disease of the capsules, and when to all this is superadded a dark, dingy or smoky-looking discoloration of the integument, we shall be justified at least in entertaining a strong suspicion in some instances, - a suspicion almost amounting to certainty in others. It must, however, be observed, that every tinge of yellow, or mere sallowness, throws a still greater doubt over the true nature of the case, and that the more decidedly the discoloration partakes of the character described, the stronger ought to be our impression as to the capsular origin of the disorder.

The morbid appearances discovered after death will be described with the cases in which they occurred; but I may remark that a recent dissection (March 1855) has shown that even malignant disease may exist in both capsules, without giving rise to any marked discoloration of the skin; but, in the case alluded to, the deposit in each capsule was exceedingly minute, and could not have seriously interfered with the functions of the organs: extensive and fatal malignant disease had, however, affected other parts. It may be observed in conclusion, that on subjecting the blood of a patient, who recently died from a well-marked attack of this singular disease, to microscopic examination, a considerable excess of white corpuscles was found to be present.

CASE II.

James Jackson, aet. 35. The subject of this case was admitted into the Clinical ward, under my own care, November 11, 1851, and died December 7, 1851. For the particulars of its history and result, I am indebted to my former pupil and present distinguished colleague. Dr. Gull, who was the first to suspect the true nature of the malady during the life of the patient.

A married man, residing at Gravesend, and occupied as a tide-waiter in the Customs. Of a bilious temperament, dark hair and sallow complexion, which since his illness has much deepened, so that now it is of a dark olive-brown. His wife says, "This obvious change in his complexion has been from the beginning of his illness, and gradually came on at that time."

There can be no doubt as to this change in the complexion depending upon increase of pigment, for if the lips be turned down, the mucous membrane is seen to be mottled by a deposit of pigment, and a closer examination shows

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that the dark colour of the lips, which at first had the appearance of sordes, is dependent upon the presence of a black pigment, which is not moveable by moistening or washing the lips. There is an expression of anxiety in the face, and the brow is contracted. He gives the following history of himself:-

His occupation subjects him to much anxiety; he is exposed to all the vicissitudes of the weather, both night and day, and sometimes his food for weeks together consists of salt provisions. Eight years ago he had rheumatism, accompanied with great nervous depression; since that time he has enjoyed general good health, with the exception of some attacks of bilious vomiting. His present illness came on six months ago with headache, vomiting and constipation. About the sixth day of his illness he became delirious, and was insensible for twenty-four hours. On recovering his consciousness, he was unable to move the fingers of either hand, nor could he move the legs below the knees; the same parts were numb, as was also the tip of the tongue. He continued weak during the whole summer.

Two months ago he resumed his occupation, and remained at it until ten days back, when the old symptoms of headache, vomiting and constipation returned. Dr. McWilliam saw him at this time, and found his symptoms to have an intermittent character, and regarded the case as one of miasmatic poisoning, not only from his general symptoms, but also from the dark poisoned look of his face (vide Plate I), not altogether unlike that presented on the approach of the asphyxic stage of cholera.

On his admission into the hospital, the pulse was extremely small and feeble, the expression of the face pinched, the brows knitted. He vomited mucus containing altered blood of a dark brown colour; tongue clean; epigastric region full, especially towards the left side, where he has had some twitching pain and slight tenderness on pressure. Urine natural in colour and quantity, of a light brown colour, not coagulable by heat. He went on, day by day, with but slight symptoms of change. Skin cool; pulse moderate in frequency, but extremely feeble, so as scarcely to be felt at the wrist. On several occasions the depression was so great as to require the exhibition of decided stimulants. There was a continued tendency to sickness. The abdomen soft, with marked aortic pulsation. Bowels constipated; chest everywhere resonant; heart's sounds normal; extent of dullness on percussion not increased. Slight traces of intermittence in the symptoms; the surface in the evening being cool, or even cold, and the following morning warm, as if from reaction.

Probable diagnosis.-The epigastric tenderness and pulsation, with frequent vomiting, and the ejected mucus and altered blood, point to an inflammatory condition of the gastric mucous membrane. But what condition of system is it

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which favours the production of black pigment? Is it some affection of the liver; or is it, as Dr. Addison supposes, disease of the supra-renal capsules?

SECTIO CADAVERIS.

The lining membrane of the stomach was finely injected into minute puncta and stellae of a bright red colour, with two or three spots of ecchymosis. The structure of the membrane was thickened and pulpy, and the surface covered with tenacious mucus. In some parts there were irregular superficial abrasions; these appearances of the mucous membrane becoming very distinct by examining it under water by aid of sunlight, and seeming, moreover, unequivocally to demonstrate the existence of a gastritis. The brain, lungs, heart, spleen, liver and kidneys were normal.

The supra-renal capsules contained both of them compact fibrinous concretions, seated in the structure of the organ; superficially examined they were not unlike some forms of strumous tubercle. (Vide Plate II. and Plate VIII. figs. 4, 5.)

The slow and insidious approach and progress of the constitutional loss of strength, the extreme feebleness of the pulse, the absence of all evidence of any lesion sufficient to account for the patient's declining condition, the loss of appetite, the uneasiness and irritability of the stomach, and the indications of disturbed cerebral circulation, were all so strongly marked, and so exactly corresponded in kind with what have been observed to accompany the most extensive disease of the capsules, that, coupled with the excess of dark pigment in the integument, we did not hesitate to anticipate with much confidence an extensively diseased condition of these organs.