On some of the secondary consequences of Bright's disease of the kidneys

by Stewart Lockle
Ever since the discovery which has immortalized the name of Bright, scarcely any subject in medicine has occupied more of the attention of practitioners, than the disease, or variety of disease, with which his name has been connected. Imumerable have been the discussions as to whether, the conditions prefixed together under the term "Bright's disease of the kidney" really constitute one many distinct affections. While con, particularly amongst Germans...
pathologists, are inclined to regard these different morbied conditions as merely successive stages of the same disease; others, and perhaps the majority, believe that a variety of specific diseases are grouped together under one common name. It is not however to the discussion of this point, important as it is, that I propose devoting the present paper, but to a sketch of some of the secondary affections consequent upon these morbid conditions. Still as in order to render distinct observation intelligible, it will be necessary for me to adopt some sort of classification, I propose selecting that most commonly employed amongst medical men generally, without reference as to whether the various conditions, arranged under it are specifically distinct or not.

1. The congested kidney (the condition accompanied by acute dyspepsia...
2. The large white Kidney, and
3. The small Contracted Kidney.

Concerning the importance of the
various secondary consequences of
these affections, it will scarcely
be necessary to say anything
this will be evident to every one.
As Remembers, first of all, the
very frequent recurrence of Bright
disease, and then the insidious
nature of its accession in many instances,
that frequently an attack of Convulsions,
or the recurrence of
some internal inflammation, is
the first thing to attract the atten-
tion of the patient or his friends,
and to excite the suspicions of the
physician that there may be some
injurious disease of the Kidneys,
and lastly that it is to these deep
and alarming affections, that treatment so
yet, Chiefly applicable.
(1) Brit. & For. Rev. Chin. Review 

M.T.
1. Dr. Christian made the remark, that according to his observations, three fourths of all cases of dropsy are connected with diseased kidneys.

Amongst all the secondary consequences of Bright's disease, this is by far the most frequent, but it is by no means a necessary accompaniment of the disease. For there can be no doubt that many cases occur and go on to a fatal termination, without the appearance of this symptom. Of 430 cases of Bright disease collected by French, from various sources, 54 never had dropsy. It seems to be of almost universal occurrence however, in the first and second forms of the disease, while in the small contracted kidney the appearance of dropsy to any amount at all, is by any means, in general...
(2) Johnston, Med. Times and Gazette.
The disablement consequent upon renal disease is of the variety termed "renal disability." It is for the most part first observed in the cellular tissue and this is done followed by edema, hypertension, and hyperplenism. In the case where the symptoms are urgent, Dr. Mills observes that if there is oedema of the periarterial organs the disability is probably renal. This is perhaps less general a statement. It is commonly thought that renal disability may be distinguished from cardiac disability, by observing its mode of accession; that whereas in the latter the oedema is first observed in the feet and travels upwards, in the former it is first observed in the face and back of hands. But Cade, in recorded of renal disability when the oedema first appeared in the feet, and made it upwards, (7) so that the rule above given is not without its exceptions.
This symptom may be rapid or slow in its occurrence according as the disease is acute or chronic. The dyspnea itself may be the cause of death, by the interruption of respiration due to edema of the lungs, by distention or edema of the heart, or by impeding the heart action, or by producing extensive edema from distension of the skin. The fluid expressed in Bright's disease differs somewhat in composition from that expressed in cardiac disease; it contains less albumen, the result of the imperfectly absorbed albumen of the blood; it contains some also in appreciable quantity, uric acid, as far as I am aware, has not been detected in it. A curious circumstance has been observed by some, viz., that the amount of albumen in the fluid varies in different situations. A table is given by Frank, showing that the fluid expressed into
(4) Christian in the Kidney
the pleura and peritoneum is much
richer in albumen, than that found
in the muscular tissue. (1)
Probably two or three circumstance,
concerning dypsia in Bright's
disease. First, in very many cases
there is, but a scanty secretion of
urine, and the blood is thus
rendered more watery than normal.
Secondly, the well known effect of
Bright's disease in causing a remark-
able diminution in quantity of
the red blood corpuscles, is such
as to lead Dr. Christian to remark
that "he is acquainted with no na-
tural disease, at least of a chronic
nature, which so closely approaches
removal in its power of impairing
the red particles of the blood" (2)
has doubtless a great influence in
producing dypsia.
It is clear that either of these
circumstances separately, is neces-
sary for the recurrence of dypsia
in the great majority of cases, fever, oedema, albumin, and casts may be absent, and yet derangement of the general organism be produced. While in many cases of the more insidious form of the disease, the condition of albuminuria being present, in a few others it does not occur; in a few others it does, although albuminuria still continues unabated. On the other hand, in cases of acute derangement following febrile attacks, as in intermittent fever, there is a reduction in quantity of the red corpuscles of the blood; although the condition of albuminuria of urine is generally present.

But further, there is evidence to show that both these conditions may be present, and yet derangement not necessarily follow. Dr. Johnson, in his treatise on the bladder, has shown it to be extremely probable that another circumstance is producing derangement of urine.
Distention to the flow of blood through the capillary system.

D. Bright long ago observed that hypertrophy of the heart was a very common accompaniment of disease of the kidneys. Out of 150 cases recorded by him in a tabular form there were fifty-two cases of hypertrophy of the heart, and in twenty-two of these there was renal disease of the vessels of the coats. Out of 292 fatal cases collected by Trench, the heart was hypertrophied in 89, and in 42 of these the hypertrophy was simple.

It is held by some (and Mr. Henderson supports this view) that this is mere coincidence, that the renal disease and the hypertrophy of the heart are effects of one common cause, viz. intemperance, which we know to be one of the most common antecedents of renal disease. It appears to me that this will...
not account for so many cases.

We have no evidence that simple hypertrophy of the heart is a common result of intemperance, and in cases of cirrhosis of the liver, another very common effect of drunkenness, it does not appear that the complication of simple hypertrophy of the heart occurs in nearly the same proportion, as in cases of Bright’s disease.

Dr. Bright suggested two explanations of these cases, one of which was “that the altered quality of the blood, or its capacity for action in the minute and capillary circulation as to render the blood impede the capillary circulation,” we have evidence from the experiments of Dr. Reid and of Magendie and Prisseville.
F-Toll on urinary disease.
The former observers found, that blood prevented from being oxygenated passed less readily through the systemic capillaries. The latter experiments seemed to show the introduction of alkalis into the blood, a great retardation of the capillary circulation, and even its stoppage took place. Reasoning from analogy it would appear extremely probable, that the urinary constituent being retained in the blood, have the same sort of influence in causing impediment to the capillary circulation, and if so, this would be, as Dr. Bright originally suggested, a sufficient explanation of the occurrence of simple hypertrophy of the heart.

Dr. Jenner proceeded far as to regard the very recurrence of simple hypertrophy of the heart as almost sufficient proof that such capillaries
W. Johnson on the Kidney

[Note: Possibly a reference or title page for a medical or scientific document]
long obstruction does exist, and this obstruction is one of the circumstances which he believes to have great influence in the production of dyspep.

It would appear that this circumstance alone is not sufficient for the explanation of all cases, any more than either of the other two conditions; and as previously stated, two or more of these conditions probably occur in most cases.

Frenich says "acute dyspep has the same cause as the kidney disease, it is the consequence of paralysis of the capillaries of the skin and subcutaneous tissue excited by exposure to cold". But I am not aware that he brings forward the slightest amount of evidence in support of this hypothesis.

Various plans have been proposed for the treatment of the dyspeps. In acute cases, suspending from the
Coins seems to be of undoubted service especially if there be any local pain. After this, perhaps the conjunction of purgatives and diaphoretics is the preferable mode of treatment, though Dr. Christian employed that in these cases, we need not be afraid of giving diuretics, if it should be necessary. The patient should have a warm bath occasionally, or probably still better, a vapour bath, or a hot air bath. A very good form of purgative is the compound jalap. Powder of the pharmacopoeia, elaterium has often proved of great service, and if one could be sure of obtaining it good, it might be used with advantage; but it is so subject to adulteration that it becomes a very uncertain remedy. Dr. Christian employed sambuca to a great extent and found it very useful. Should these means fail, which probably
T. Christmas found in some of his cases that diabetes was induced more speedily after the operation of a brisk purgative. The state of the skin should also be attended to.
will not very often be the case, cream of tartar and digitales may be employed as diuretics.

In the Chronic form of dropsy, while the bowels should not be allowed to become constipated, the diuretic plan of treatment seems desirable. Cream of tartar, salicylic and digitales may be administered, sometimes a combination of diuretics seems more serviceable than any single drug. The exhibition of some salt of iron apparently proves useful by improving the condition of the blood. If remedy, administered internally should fail in reducing the dropsy, cupping at times may be employed, and sometimes, for great relief, or a single incision at the lower part of the leg may be made; sometimes the abdomen requires to be tapped in order to let out the fluid. These operations should never be resorted to unnecessarily.
except in extreme cases, as erysipelas and even diphtheria may follow. Formerly, patients were not allowed to drink freely in order to quench the extreme thirst from which many suffer; in case the disease should be increased as it was thought, but this rule is now in great measure disregarded, so it is found that the disease is not increased by the patient being allowed to drink freely.

Next to death, various cerebral affection are among the most common consequences of Bright's disease. Of 241 cases collected by French from various sources, 94 died from one or other affection of the head. Dr. Christians regarded coma as the natural termination of the disease. The cerebral affection consequent upon Bright disease present a great variety of aspect.; According to Dr. Addison, the general
character of these affection, is marked by a pale face, a quiet pulse, a contracted or undilated and steady pupil, and the absence of paralysis. He has given the following different forms.

1. A more or less sudden attack of great stupor, which may be temporary and repeated, or permanent ending in death.

2. A sudden attack of peculiar modification of coma and elation, which may be temporary or lead to death.

3. A sudden attack of convulsion, which may be temporary or terminate in death.

4. A combination of the two latter, consisting of a sudden attack of coma and elation, accompanied by constant or intermittent convulsion.

5. A state of dulness of intellect, sluggishness of manner, and disorders, often preceded by piddles.
(1) 1 Command: Report: Rev 7 Vol 70
dizziness of sight, and pain in the head; preceded either by coma alone, or by coma accompanied by convulsions; the coma presenting the peculiar character already alluded to. 

Dr. Addison regards these accompanying phenomena of cerebral affection as peculiar, and to a great extent characteristic of the coma connected with cerebral disease. He says, "that it has not the deep, darting, pituitary, or sudden onset of ordinary apoplexy, but it usually presents some of a lingering character." I think I am able to confirm this statement by my own observation. It is however a good practical rule to test the mind for allusions in every case of coma or convulsions.

A degree of delirium is very often present, before the coma commences.
Hemiplegia often unpremeditatedly occurs shortly before death, but in such cases there must be some definite organic lesion of the brain.
is a violent.
But a very few of these cases exhibited any appreciable lesion of the head sufficient to account for the symptoms which preceded the fatal termination. Of the 94 cases before mentioned as collected by French there were cerebral leptomeningitis in 63, meningitis in one, cerebral softening in one, leaving 86 to be accounted for by some less appreciable cause. 111

That the occurrence of these cerebral affections bears no relation to the amount of dyspepsia, seems well established, for many cases occur where there is not the slightest appearance of dyspepsial affections. Dr. Johnson indeed asserts that cerebral affections are more common in consequence of contracted kidneys than of any other form of renal disease. 112

The vessel from which liable
Pathologists are therefore pretty well agreed, that it depends on some abnormal condition of the circulating fluid. What that particular condition is, has however been the subject of much discussion.

The view that would at first most naturally suggest itself is, that these conditions depend upon the contamination of the blood by new, consequent upon the decreased elimination of that substance by the kidneys, and hence the term uraemia. There are difficulties however, in the way of adhering to this explanation, for many cases are recorded by T. Chrichton and others, where the blood was loaded with urea, and yet there was no bad affection. T. Henderson is of opinion that such an apparent anomaly may be explained on the supposition, that different individuals may have a varied degree of inci-
Susceptibility to the action of poisons.

It is a well-known fact that no

cetic poisons produce very various

effects in different persons. Thus

a dose of opium which might be
taken with perfect impunity by

done individuals, would prove fa-
tal to others. It may be true, that

the system becomes accustomed in

some measure, to the gradually inces-

sing contamination of the blood by

doses of opium. There are

some facts which would tend to sup-

port this view. For instance, it

is a matter of observation that afte-

ration of the abdomen is very common

after a sudden and great diminu-

tion, in the quantity of urine ex-

creted; and this even in chronic

cases, where the blood may have

been for a long time contaminated

with opium, but where the amount

has been very gradually increased.
until, owing to the secretion of urine being suddenly diminished after exposure to cold, a rapid addition to the amount of urea in the blood has taken place; and some cerebral affection has followed. Dr. Christie makes the remark that ‘the absence of any affection of the head, as might be expected, provoked with urea, is a fact which I have repeatedly had occasion to remark in the advance stage of particular degeneration of the kidneys, but never in its early stage’. And according to Johnston, ‘the cerebral function remains unimpaired; a few ounces of urine only being secreted daily, only in chronic cases and where the urine has been gradually increased in amount. Dr. Christie in his work on the Kidneys gives it as his opinion that “the impoverished condition of the blood contributes very powerfully’
to the operation of the real immediate Cause or Causes of the Coma in this disease. Dr. Water makes a similar
inference, and supposes that the stupor and Coma of Bright's disease are analogous in their origin to the
similar symptoms of Organic Hydrocephalus, where a state of
Amaurosis is present. Of course these observations only apply to the
chronic form of the disease; for as Dr. Christie pointed out, the
blood is not impregnated in the acute form.

A very ingenious view of the matter has within the last few years been
brought forward by Frichs. This observer believes that it is not
the men itself that is the Cause
of the Cerebral Symptoms; but that
this Insence is just decomposed
into Carbonate of Ammonia, and
he supports this doctrine both
by the result of observation of
cases of Bright disease, and of experi-
ment on animals.
He states "that when the symptoms
of renal irritation, coma, Con-
volutions &. Commence, Carbonate of
ammonia is mixed in considerable
quantity with the expired breath, and
that the quantity of the ammonia is
in proportion to the intensity of the
renal phenomena." He says
"that he has repeatedly demonstrated
the ammonia contained in the ex-
pired air of sick men, and of
animals into whose veins air
was injected after extirpation of
the kidneys; reddened litmus
paper quickly turned blue in the
air issuing from the mouth and
nose after being moistened with
hydrochloric acid produced like
hose in the same air a more or
less thick Cloud." He adds "that
the blood in every case in which the
symptoms of  \textit{renal} are present
Contains Carbonate of Ammonia. For the combination of these observations, French injected a solution of Carbonate of Ammonia into the veins of animals, and Convulsion and Stupor were the consequence. In order to explain the circumstance that cerebral symptoms occur in the case of Bright's disease more than another, French supposed that a peculiar ferment, present in one set of cases and not in the other, is the cause of the conversion of the urea into Carbonate of Ammonia. What that ferment is, and why it should be produced in one case more than another, he offers no explanation. Further observation seems necessary for the combination of this doctrine. So far as the matter has been attended to, in this Country at least, the results of experience have been rather opposed to the theory of
(1) To his Primary Friends.
Frenich. He himself says, that in order to demonstrate its truth, it must be proved that in every Case of uremic intoxication, a Decomposition of urea into Carbonate of Ammonia takes place. Both Dr. Todd and Dr. Johnson have failed to detect Ammonia in Case of Bright disease Complicated with cerebral affection. In a Case of small Kidneys (Small Contracted Kidneys) described by the former, in which there were delirium, Convulsions and Convulsions the Blood was tested for Carbonate of Ammonia in Vain; reddened Nitro paper failed to detect it in the breath and sweat (1); and Dr. Johnson in a late number of the Medical Times and Gazette records a Case where he also failed to detect Ammonia in the breath of the patient, a 3rd Case with Hydriodilic acid evoking a uremic state in the Case of the
I may mention that I had lately an opportunity of testing the blood of a patient in the Infirmary, (under the care of Dr. Barlowton Begbie,) who was becoming comatose from Bright's disease. As fumes were produced when a 2d moistened with acetic acid (which is a more delicate test than the hydrochloric) was put into the upper part of the tube containing the blood; or adding lime water to the blood as well as ammonia could be perceived, and the 2d moistened with acetic acid was not even then affected; no effervescence was produced on the addition of hydrochloric acid to the blood. I also tested the breath of the patient for ammonia (by means of the 2d moistened with acetic acid, and of reddened litmus paper) with similar want of success.
Theoretically speaking the agency of a ferment (as proposed by Fritsch) does not seem very probable; for while this ferment, whatever it may be, is found in some cases of Bright's disease, it seems to have been present in all the animals, into whose veins any was injected; the kidneys having been previously stripped;

It would seem rational that for the proper treatment of these cerebral affections, our remedies should be applied to the kidneys, and experience seems to confirm this view. The first object would appear to be to control diuresis. Dr. Johnson speaks highly of the usefulness of cupping from the loin in these cases. Syrups and chintz may also be given with some hope of success however small that may be.

Besides the fever affections of

(2) Brit. & For. Rev. Chin. Review
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the nervous system already mentioned, there are a few minor disorders sometimes met with in Bright's disease. A degree of anemia is not infrequently observed. It was noted in 5 out of 37 cases recorded in a tabular form by Bright and Barlow. I have myself seen it well marked in two cases, which occurred in the Royal Infirmary, under the care of Dr. Washington Bigbie. Dr. Bright thought that this affection generally appeared at an advanced stage of the disease.

Impairment of the sense of hearing is also sometimes observed. In 6 out of the 37 cases just mentioned, there was deafness or tinnitus, audiometer, and in 4 out of 41 cases observed by Faenicks these symptoms were present.

Chills in the legs have also occasionally been observed.
Gauge Test Report  11th Oct 1757
These affections are no doubt due to the same cause or causes as the prior conditions previously alluded to.

Verious inflammatory lesions are well known to be of frequent occurrence in the course of Bright disease.

Bronchitis is very commonly observed, indeed Dr. Wills states that "he is not aware if all the symptoms were numerically taken, this would not be more universal than any other single symptom, albuminous urine alone excepted." This statement must refer to a slight amount only of bronchitis.

Out of 110 cases recorded by Dr. Bright in 13 were traces of this affection observed at death.

Pneumonia is another not unfrequent complication. Of the 272 cases collected by Frerichs, this lesion was present in 27.
(1) Brit. & Fr. Ind. Chin. Review Oct 18
about 1 in 11 cases; it was ascribed by the Cause of death in 20 out of 241 cases. Collected by the same authors, done observed by himself and others taken from the writings of various observers, including Bright, Ballou, Christian, Potter and others.

The kidney membranes being especially liable to become the seat of inflammation in the Course of renal disease. The pleura is the one most frequently affected: 16 cases of pleurisy occurred among the 100 before mentioned as recorded by Bright, while 40 more exhibited traces of a former attack. Of the 252 cases collected by French, the pleural were the seat of inflammation and formation of lymph in 35. Much stress cannot be attached, he said, to these cases where the adhesions were alone observed, as it is to
very common to meet with them, after death from almost any cause. Peritonitis is of rather less frequent occurrence; it was found dead in 12 or 13 of the 100 cases of Bright and in 33 of the 297 of French. Pericarditis is much more rarely seen than either of the two joint affections. Dr. Christian does not, in his work on the kidney, &c., &c., mention a single case where this complication existed. Dr. Bennett in the late edition of his "Principles and Practice of Medicine" remarks that he has not seen a single case of Bright's disease where this lesion was observed, and seems to doubt if there is any connection between them.

It appears to me, however, well established that pericarditis is sometimes the consequence of Venereal disease. Dr. Bright himself noted eight cases of recent pericarditis
out of 100 of renal disease, and indeed the case recorded by him as among the first which attracted his attention to the connection existing between dyspepsy, albuminous urine, and renal disease, was complicated with this inflammation. But it was Dr. Taylor who first attracted special attention to the fact of pericarditis being a consequence of Bright disease. Out of 31 cases of pericarditis observed by him 9 were complicated with Bright disease, and no other cause of the inflammatory lesion could be traced. (1) This affiction was observed in 13 of the 292 cases of Bright's. It seems strange that Dr. Bennett should never have met with it, for it is sometimes seen in the Edinburgh Infirmary. In my own very limited experience of renal disease, I have seen one case
(under the care of Dr. Halderton Bephic) where a distinct pericardial double friction sound was heard a day or two only before death; and Dr. Bephic kindly informs me that he has repeatedly seen this affection complicating Bright's disease.

Arachnitis has been very rarely indeed observed. These inflammatory lesions in the lungs depend on the contaminated condition of the blood. They are well known to be very little amenable to treatment. To bronchitis and pneumonia, probably the same treatment should be applied, as when these affections occur in other circumstances; always bearing in mind the debilitated condition of the patient in the majority of cases.

As for the various inflammations, whatever may be said of the efficacy...
Bloodletting and mercurials in these affections when uncomplicated, I suppose, few would be found who would treat then seriously when complicated with Bright's disease of the kidney. But in few of these cases could bloodletting to any amount, and it is well known that the action of mercury is apt to be very severe and inconvertible when the kidneys are affected with disease. If castor oil be employed, it may be better to produce it by other means than Castor oil, as this is apt to cause a slight and temporary albuminuria even when there is no kidney disease. I am inclined to think that if diuresis could be induced, that this would be the best plan of treatment. Erythema has sometimes been observed, as previously mentioned.
it is apt to follow acupuncture or incisions made for the purpose of relieving the dyspepia. The remedy is generally attributed to the tension of the skin caused by the drop-like expression. There is some reason to think, however, that it is sometimes, like the inflammations previously adverted to, the consequence of the contaminated condition of the blood; as it has been observed to disappear after the chemical effects have commenced to decline.

Symptoms of irritation of the gastro-intestinal mucous membrane are very frequent complications of dyspepsia. Pyrosis and flatulence are common symptoms. A case is mentioned by Dr. Johnson, where a man died in a fit of dyspepsia apparently accelerated by flatulent distention of the stomach, coming...
on after partaking of a heavy dinner. Chronic vomiting is apt to be very troublesome. It was found in 11 out of 42 of French's Cases. The vomiting often occurs in the morning, or the patient first awaking from sleep. It is with difficulty controlled. Dr. Christian found Creosote the most efficacious remedy in these cases, if this should fail hydrocyanic acid, or medicinal purgatives may be tried. According to French, diarrhea is not a frequent symptom as vomiting. As long as it does not exhaust the patient too much, perhaps it is better that it should not be interfered with, as by it as well as by the vomiting, the morbid seems to be eliminated. But when excessive or too much protracted an attempt should be made to arrest it, as it has sometimes proved fatal by.
the constant drain exhausting the system. The ordinary antiperspirants may be tried: opium should be administered with caution, otherwise a state of reaction may be very speedily produced.

Very frequently as lesion of the intima membrane is discovered at death; sometimes however, marks of inflammation or ulceration of the intestine are observed.

As the subject of hypertrophy of the heart, as a complication of Bright's disease, has already been incidentally discussed under the head of disease of the blood vessels, it shall not further be pursued here. Disease of the blood vessels has frequently been observed: out of the 150 cases of Bright, in 17 was the cause of death disease in the cortex. Dr. Paget pointed out that the capillaries of the brain are often fatty in Bright's disease.
this, in common with hypertrophy of the heart, Dr. Johnson considers the subject of this disease very liable to cerebral decomposicion. Whether this is a consequence of Bright's disease, or merely an effect of the intemperance which is so frequently the cause of renal disease it would be difficult to say.

Purpura and epistaxis are symptoms that have sometimes been observed. Cases of the former are recorded by Dr. Bright and others. Dr. Todd believes that epistaxis is more frequently observed in cases of the small contracted kidney, than in any other form of renal disease.

The last complication that I shall refer to here is chronic urination. Dr. Christopher, I believe, was the
Just to point out this consequence of Unil Disease: also that it is less common when there is much physical pressure than when the urine is considerable, and these observations have been confirmed by Dr. Johnson and others. The pain has its seat in the muscles rather than in the joints. Dr. Christian found warm baths more useful than medicine, administered internally. If any medicine be given, he recommends Calomel, combined with Morphia or Opium.

Stewart Lockie.