Clinical Lecture

ON

PREGNANCY NEPHRITIS.

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GENTLEMEN,—I am about to direct your attention to a form of disease which is certainly rare, and of which too few examples pass under our notice in a general hospital. Medical men sometimes practise for years without seeing a case of pregnancy nephritis; and when they do encounter one, find how little formulated their ideas are on the subject, and how unprepared they are to give a prognosis or treat it properly, or offer a reasonable explanation of the evident close causal connexion that exists between pregnancy and renal disease. Let me say a few words in preface about the malady. It assails women previously healthy in sequence to their becoming pregnant, begins insidiously without fever or pain, and proceeds to some grave symptom—rapid general dropsy, sudden convulsion, uræmia, or cerebral disturbance —before the patient is aware that anything serious is the matter with her. Mere albumen in the urine of a pregnant woman does not necessarily signify pregnancy nephritis. Abeille[1] found albumen in 1 out of every 10 pregnant women. Van Arsdale and Elliott[2] found it in 1 in 56, a proportion which appears to me more reasonable. Dr. Roberts, uniting the statistics of Blot, Meyer, Devilliers, and Regnauld together, infers the liability of pregnant women with albuminous urine to eclampsia to be about 1 in 4. The eclampsia is usually not expected, although precursory symptoms, such as headache, vomiting, delirium, and clouded intelligence, are noticed in several recorded cases. As to the time of occurrence of the convulsions, which is the most dangerous of the uræmic manifestations, various valuable statistics have been collected. Thus, the nearer to its natural term the pregnancy is conducted, the more likely, in these albuminous cases, is eclampsia to supervene. The subjects of pregnancy nephritis who are prematurely confined most probably escape the eclamptic complication. There are valuable figures collected by Von Wieger, who tabulated 455 cases showing that the convulsions preceded the commencement of labour in 109 instances, attended the act of parturition in 236, and followed its completion in 110. Now to our case.

Annie B——, aged twenty-three, a domestic servant, was admitted into Faith ward for general dropsy, February, 1882. Her face, legs, abdominal walls, and skin everywhere were extremely anasarcous. The eyelids were so swollen that she could scarcely look through them; her abdominal cavity also contained ascitic fluid, but besides this she was obviously pregnant as well, although she stoutly denied the imputation of it, for we were able to count distinctly the sounds of the fœtal heart and feel the outlines of a child in utero. The catamenia had been absent for six months. There was evidence also of some hydrothorax on both sides, the fluid being largest in amount on the right side; the heart sounds were loud and clear.

History.—She had had scarlet fever at fourteen; otherwise perfectly good health. She told us her present illness began by swelling of the legs, which she first noticed three weeks ago, and was succeeded by cough and shortness of breath, her chief complaint on admission.

State on admission.—Besides her general anasarca and dropsy, her countenance was dusky, her lips somewhat livid, and her mental condition was very apathetic and drowsy. She was rational, but not reliable in her answers. Her pulse was 72; respiration 28; temperature 98·4°; tongue furred and bluish; appetite bad; bowels open, solid action; urine scanty, sp. gr. 1028, high coloured, and containing one-quarter its volume of albumen. Her sight, she informed us, was bad, and had been failing for a week, not longer, and certainly was worse the day after her admission, for she then groped about for objects on her locker like a person nearly blind.

The diagnosis, so far as pregnancy nephritis was concerned, was not difficult. But what form of pregnancy nephritis was here, for all are not alike, either in their symptoms, their course, or their issue? and towards prognosis, the distinction which experience has taught me to draw between them severally is, in my opinion, very important. 1. There is eclampsia parturientium, a series of epileptic convulsions concurring with the act of parturition, and coinciding with highly albuminous scanty urine, or with anuria (total defect of urine), preceded by no well-defined or usually noticed symptoms of renal disease, for neither slight nor severe anasarca of the legs attending the later months of pregnancy can be accepted as incriminating evidence of prior or primary renal disease. 2. There is chronic Bright's disease, chronic insidious parenchymatous diffuse nephritis, complicated by pregnancy, quickened and rendered more imminently dangerous by uræmic symptoms, or local inflammatory complications, *pari passu*, with each week of advancing pregnancy. 3. There is pregnancy nephritis proper, a cortical glandular nephritis, an acute change in the nutrition of the renal epithelium, which commences sometimes as early as the third month of pregnancy, but more often in the sixth, and is attended by diminished urination, albuminuria, anasarca of face and limbs, retinal symptoms, uræmic symptoms, vomiting, neuralgia, lung œdema, asthma, mental perturbation phenomena, convulsions, and sometimes death; but is usually suddenly terminated by premature delivery and subsequent profuse diuresis, and complete recovery. Now, our case proved to be of this last kind, and this is the form of which I have had most personal experience.

To return to our case. Mr. Barnes, my house-physician, instituted a careful examination of the eyes. He found the fundus of the right eye extremely hazy. The disc, except for a very pale ring at its periphery, was nearly of the same pink colour as the surrounding fundus. The margin of the papilla was swollen, and the retinal veins somewhat large; but no hæmorrhages or retinal effusions were observed. Left eye: The disc was swollen, red, and indistinct, but better defined than that of the right eye; the veins of the fundus were enlarged; a dark spot of hæmorrhage was apparent on the outer side of the large descending vein. The patient took fluid nourishment well. She was examined by Dr. Matthews Duncan, who advised gentle purgation, and, if eclamptic symptoms supervened, the induction of premature labour. The fifth day after her admission, meantime making no complaint of labour pains, the patient asked for a bedpan, and told the nurse that she would find something in it—in fact, a dead fœtus, to which she had given birth. This was on Feb. 14th. The after-birth came away naturally. The patient lost very little blood; but, in consequence probably of the labour-pains and straining, there was slight hæmorrhage in each upper eyelid, and the conjunctivæ were very œdematous, and both eyes very painful and hypersensitive to light. The temperature was never elevated, the lochial discharge established itself, the general œdema rapidly subsided, her face and legs were obviously less swollen the second day after her delivery, and she passed at least two pints of urine; specific gravity 1025, still containing a quarter of its volume of albumen. She complained of frontal headache and of her eyes, and her sight was so bad that she could only uncertainly count fingers held up between her and the light. The patient took nourishment well, and the only medicine ordered was effervescing tartrate of soda.

Feb. 17th:	Passed	86 oz. of urine.					
18th	,,	120 oz.	,,	sp. gr.	1020;	album.	¼
19th	,,	120 oz.	,,	,,	1012	,,	0
20th	,,	110 oz.	,,	,,	1012	,,	0
21st	,,	104 oz.	,,	,,	1015	,,	traces
22nd	,,	124 oz.	,,	,,	1015	,,	traces
23rd	,,	132 oz.	,,	,,	1013	,,	traces
24th	,,	100 oz.	,,	,,	1017	,,	nil

On the 18th the note says: Slept well, still headache, tongue clean; pulse 100; respiration 36; temperature 98°. Sight no better. Patch of white effusion on apparent inner side of right disc, which is still red and swollen. Extensive detachment of lower half of right retina in the form of three large cusps. Left eye: Retina red and swollen as before labour, but two hæmorrhagic effusions now visible. On the 28th the sight of both eyes was obviously improved; that of the left was fairly good; right still much impaired.

On March 6th we obtained another ophthalmoscopic examination of her eyes, when, to my surprise, no trace of the previously detached half of the right retina could be discovered; there was intense swelling of the disc with blurring

[1] Traité des Maladies Albumineuses. Paris, 1863.
[2] New York Journal of Medicine.

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of its edge; the whole fundus was cloudy and indistinct in its deeper layers, and several patches of effusion here and there surrounding, and also surrounded by, spots of pigmentation, could be seen. The seat of previous detachment and bulging of the retina was the part where most pigmentation was apparent.

From Feb. 24th she ate a mutton chop daily, and took a good milk dietary and custard pudding. The lochial discharge ceased early. All albumen had disappeared from the urine within a week after her delivery. She took a steel mixture during her convalescence, and was discharged quite well and with no complaint about her sight, and able to read the print of the daily papers, on March 15th.

Apart from its interest as a case of pregnancy nephritis, this woman's record shows how completely acute retino-choroiditis and partial detachment of a large portion of a retina may be recovered from. *Desinit causa tollitur effectus.* Unfortunately, in other forms of Bright's disease, while we encounter the same retinal complication, we seldom find a similar capacity of recovery.

So early as 1840, Rayer (vol. ii., p. 399) called attention to pregnancy nephritis, described its principal symptoms, and noticed the tendency of the mother to die of convulsions, and of the fœtus to be born prematurely and dead. Lever, in Guy's Hospital Reports, 1843, observed that the urine of nine out of ten parturient women who had convulsions was albuminous. Frerichs, in 1851, first attributed the eclampsia parturientium to uræmic intoxication; and from that time to the present few forms of renal disease have been more written about; the symptoms being calculated to attract attention, a large proportion of the eclamptic cases dying, and a fair proportion of those who survived the act of parturition a week recovering.

In a clinical lecture it would be impossible for me to do justice to the various speculations that have been ventured on the etiology of the nephritis. Many accoucheurs still attribute it to mechanical pressure, notwithstanding Bartels' arguments to the contrary. That the enlarging uterus should press upon the renal veins is scarcely intelligible; that it might press upon the neck of the bladder and increase the urine pressure on the ureters, the pelvis of the kidney, and the tubuli uriniferi, is far from unreasonable however. In favour of mere mechanical pressure as its cause are the established statistical facts:—(1) That this nephritis happens mainly, if not only, in the latter months of pregnancy; (2) that it affects primiparæ principally; (3) that it complicates twin rather than single pregnancy; and (4) that the anasarca and albuminuria subside rapidly after parturition. I can only mention, not discuss, here the primary impurity of the blood theory, Bartels' urea excess, Gubler's albumen excess, leukæmia and hydræmia—all incident to pregnancy; Peter's overworked kidney theory, and the still more recent vasomotor spasm of the renal arteries theory,—these may do duty to explain some particular cases of eclampsia; they will not explain all the urinary symptoms of pregnancy nephritis, or the pathological changes most commonly found in the kidneys of those who die.

From Leyden and Wagner I give you the ordinary morbid changes which are found in the kidneys of typical pregnancy nephritis (Wagner, "Morbus Brightii," p. 196). The kidneys are to naked-eye inspection little altered, slightly enlarged, rather bloodless than blood gorged, a little soft to feel, and a little yellowish coloured. Under the microscope, the tubuli are observed a little dilated, their epithelium swollen, and either finely granular from fat or albumen, completely filling up some of the canals of the tubules. Only a few casts are seen *in situ* in the tubules. The glomeruli are mostly bloodless, the capsular epithelium is in some detached, in others there is a half-moon of albuminous material between the capillary tuft and capsule. The stroma of the kidney is normal or œdematous. In a few cases (Virchow and Bartels are agreed on their extreme rarity) the ordinary appearances of hæmorrhagic nephritis have been found, and Litzman observed several times recent changes like those described above welded evidently upon kidneys which presented characteristic evidence of old chronic diffuse renal disease.[3] The following case, taken from an article by Leyden, confirms the pathological accuracy of the description above given from Wagner:—

A. J——, aged twenty-eight, a previously perfectly healthy woman, passed through a normal gestation in a first pregnancy up to the seventh month, when she noticed that she required to urinate unusually frequently. Shortly afterwards her ankles began to swell, and the dropsy rapidly extended to her legs, genitalia, and back. She complained of the weight of her legs and shortness of her breath. Temperature 36·5° C.; pulse 72, regular, of moderate high tension; heart and lungs normal; urine 1000 cc. per diem, sp. gr. 1035, thick, coffee-coloured, presenting moderate sediment, but containing much albumen. The sediment contained no red cells; some white ones, free fatty renal epithelium, and hyaline casts. About a fortnight later labour came on suddenly, the swollen labia suffered some laceration; rigors occurred the day after, septicæmia and death on the sixth day.

Post-mortem Examination.—(The state of the kidneys alone need our attention). Left kidney: Swollen surface of grey-yellowish colour, slightly œdematous; veins full; section anæmic; substance doughy; medullary portions, especially the ends of the cones, pale. Right kidney similar, but rather more fatty-looking, doughy, enlarged; its pelvis and ureter obviously dilated. The microscope demonstrated some casts *in situ;* fatty infiltration of renal epithelium; no alteration of vessels or glomeruli; no nuclear proliferations, but here and there a few groups (foci) of micrococci in the stroma (patient died of septicæmia) between the straight tubes of the pyramids. The writer says that these appearances differ *in toto* from scarlatinal nephritis; there is no venous hyperæmia, rather arterial anæmia, and secondary to it fatty necrosis of renal epithelium.

A point I wish to insist on, even if my own case has not illustrated it enough, is that the kidney in true pregnancy nephritis does not suffer any irreparable injury; that its disturbance is mainly functional at first; that less urinary water is secreted; and that what is secreted is of high specific gravity, high colour, but affording little sediment, and seldom blood; that later on the evidence is forthcoming of nutritional failure in the renal cells. The most characteristic features of the malady agree entirely with my daily clinical experience of ordinary acute parenchymatous nephritis—scanty high-coloured urine, with little sediment, but having a large percentage amount of albumen. As the case goes on from first appearance of dropsy and albuminuria, both these steadily increase, until convulsions, or premature parturition, or both these together, ensue. The rapidity with which the dropsy disappears and the urine becomes normal again after parturition, was noticed years ago by Regnauld and Devilliers, who recorded a case in which all albumen had disappeared fourteen days after delivery. In our own case six days after delivery the woman's urine contained not a trace; and although for three weeks longer we were able to find a trace usually, yet this was of small pathological importance, far too little to signify much. She was passing a healthy amount of urine and of urea, and no albumen in her discharge. *De futuris non est predicandum.* The prognosis for her is good, unless she becomes pregnant again, when the same nephritis is apt to repeat itself. Further experience teaches us that while with each succeeding pregnancy dropsy, albuminuria, and uræmic complications recur, the woman becomes more tolerant of her fœtus, the nephritis is continued for a longer time, and the damage to the kidney is more extensive and more apt to pass on to chronic nephritis when delivery is over. Indeed, I can record one case in a relation of my own, who suffered pregnancy nephritis with three successive pregnancies. The first fœtus was born somewhere short of the sixth month, but had been dead six weeks at least; the second was born in the seventh month dead; the last was carried to term, born alive, and is now alive. Between the first two pregnancies all albumen disappeared from her urine; after her last pregnancy and delivery albumen remained persistent until her death by uræmia.

Advice upon treatment.—Distinguish between the three varieties of pregnancy nephritis already noticed. Eclampsia parturientium with albuminous urine, but without notable dropsy, is relieved by chloroform, chloral, amyl nitrite, nitro-glycerine, bloodletting, warm baths, by all those things which relieve spasm, by completed delivery. Chronic Bright's disease, complicated by pregnancy, is best treated upon the ordinary plan for Bright's disease, and its several accidents, by hot baths, warmth, careful dietary, gentle purgation. True pregnancy nephritis demands the induction of premature labour, the earlier the better, and requires that the medical man should plainly inform his patient of the risks to life entailed by any future pregnancy. The dropsy may also require relief by draining with fine cannulas, to avoid the risks of laceration of the genitalia and invitation of septicæmia.

[3] Deutsche Klinik, 1855, Nos. 29 and 30.

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