

vein respectively. The blood that enters the kidney by the renal artery contains the waste products of muscular action, urea and its allies, and when it leaves the renal vein, it has parted with these substances, which are now found in the urine. In the walls of the kidney tubes are a number of cells, whose function is to extract these substances from the blood.

I have said that in scarlatinal nephritis the kidney does not, or rather cannot, do its work. Consequently, these cells fail to act, so that the urea and other waste products are no longer taken out of the blood, and, therefore, do not appear in the urine in as large a quantity as they should in health. The quantity of urine passed is diminished, and it contains much less urea than it should, while the poisonous waste products circulate in the blood and give rise to some of the symptoms that we see in a child suffering from scarlatinal nephritis.

But this is only half the story—the damaged cells are no longer able to stop the blood as a whole passing straight into the kidney tubes, so that the urine then contains blood and the albumen which is present in the blood. In scarlatinal nephritis, there are then, two series of signs, those in the urine (blood and albumen), and those in the patient, the results of the circulating waste products.

Now, in scarlatinal nephritis, the cells are not themselves inflamed; they are pressed upon by inflammation outside the tubes, or rather between one tube and another. They are prevented from working, therefore, but are not irretrievably damaged. Whether the patient lives or dies, depends largely on the degree of pressure that is present; but if he lives, the inflamed masses between the tubes disappear, and the cells resume their normal function. In other words, if the patient recovers at all, he recovers completely. And this is what happens in practice. Only very rarely does a patient who has had scarlatinal nephritis, leave hospital with any signs of permanent kidney mischief. In other forms of nephritis, due to cold, gout, alcohol, and so on, the cells are inflamed themselves, and the damage is, as a rule, permanent. The urine may always contain albumen, and the effects on the system of the retained urea are apt to be permanent also.

The symptoms of scarlatinal nephritis vary very much in severity. In what I may describe as the average case, there is at the onset a rise of temperature, which may be accompanied by a rigor, and usually some degree of headache and vomiting. The skin is hot and dry, and the bowels confined. While we are wondering what these symptoms are

the onset of, the patient solves the problem by passing urine that contains blood in greater or less amount, and also some albumen. A certain degree of swelling of the glands of the neck is also not uncommon at the onset. There may also be some puffiness under the eyes and round the ankles, but marked swelling in any region is uncommon in scarlatinal nephritis, though in the "ordinary" form of acute nephritis it is often pronounced. The patient becomes drowsy, and the pulse tension is raised, so that the wave in the artery takes more than the usual amount of pressure with the finger to stop its flow. The second sound of the heart is at this stage louder than it should be. In the majority of cases this is all that is noticed: the patient continues to pass blood in the urine for from a week to a month, and albumen for perhaps three weeks longer. On account of the loss of blood, the patient becomes anaemic, but otherwise, in three months or thereabouts, after the onset of the nephritis, the patient is quite well. Indeed, in many attacks, were it not for the presence of blood in the urine, there would seem to be very little the matter with the patient.

In the more severe cases, there may be signs of intense poisoning of the blood with the waste products, and unconsciousness or convulsions may supervene; the patient may even die from suppression of urine. Children who have suffered severely from scarlatinal nephritis are liable to develop abscesses in various parts, such as the glands in the neck, during convalescence.

I have purposely said very little about the clinical symptoms of the attack; their detection does not fall within the province of the nurse, and the explanation of some of the signs is by no means easy, but the treatment of the disease, both preventive and curative, is, from the nursing point of view, most important.

In the light of what we have seen of the reasons for the occurrence of nephritis, it is obvious that the most important points are to avoid undue infection of the kidney in the first place, and overworking it in the second. The first point resolves itself into keeping the throat as clean as possible. I have written somewhat fully on this in previous numbers of this journal, but I may just sum up the principal points to be observed. Firstly, care must be taken not to put other organisms in the throat while trying to take out those already there. For this purpose, the nurse should wear rubber gloves, and whatever fluid is used for the treatment of the particular patient should be introduced with a douche-

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