

ON THE OCCURRENCE OF RENAL TUBE-CASTS IN NON-ALBUMINOUS URINE.

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THE habitual occurrence of renal tube-casts, without albuminuria, in cases of jaundice, while forming an interesting feature in this affection, raises some important questions as regards tube-casts themselves, and the significance to be attached to them as signs of renal disease.

In a "Report on Renal Cases" in 'The Glasgow Medical Journal' for January, 1874, I called attention to the occurrence of tube-casts in non-albuminous urine, citing a case of jaundice, a second case where the urine was loaded with urates and dumb-bell oxalates, and a third which seemed to resist explanation, but in which there was some suspicion of renal calculus. Since then my attention has been more or less constantly directed to the subject, and several cases throwing some light on the matter have come under my notice, partly in the hospital, but chiefly in private. . . .

The tests for albumen relied on were those so long and so well tried in clinical work, viz.—(1) heat and cautious acidulation with acetic or nitric acid, and (2) nitric acid poured gently to the bottom of the cold urine, care being taken to allow some time to elapse before the absence of albumen was pronounced. . . .

The six following headings cover nearly all the cases which I have observed bearing on this subject:—

I. *Tube-casts may be found in the sediment of urine, which contains so little albumen that great care is required to bring out the reaction.*

Without going into details, I may say, generally, that tube-casts associated with these minute traces of albumen occurred in a great variety of different diseases, and in urine in which the albuminous reaction seemed due to minute quantities of blood, as well as in other more ordinary cases.

II. *Tube-casts may be found in samples of urine passed at times when the albumen has temporarily disappeared.*

In a case, for example, of parenchymatous nephritis, resulting in contraction of the kid-

neys, I found that in the progress of the illness the amount of albumen diminished, and for a few days none could be made out; it reappeared, however, in small quantity for two or three weeks before death. *Tube-casts were present in the urine throughout, even when no albumen could be detected by the tests. . . .*

III. *Tube-casts may be found in urine which has been albuminous, but in which the albumen has disappeared for a considerable time, so that we may be in doubt how far the kidneys are restored to their normal state.*

An old lady (æt. 75), subject to chronic rheumatic arthritis, and suffering from severe pains in the left leg resembling sciatica, was found, when I first saw her in January, 1874, to have œdema of the feet, and to be suffering from very frequent micturition, with a sense of straining, and her urine was supposed to have been at times bloody. On examination of two samples, I found a considerable sediment of pus in both; both were albuminous and acid to litmus; specific gravity 1018. Tube-casts were found in the sediments; some of them presented distinct fatty specks; pus-corpuscles, likewise, were seen, but no blood or crystals. The patient subsequently had a severe bronchitic attack, from which she recovered, although still tormented by her rheumatic pains; but I was surprised to find that the albuminuria had ceased in one so old, as I supposed the renal disease likely to continue till her death. She remained, with but little change, almost constantly in bed till November 16th, when she rather suddenly became very drowsy and confused, without any marked alteration in the pupils; indeed, she seemed to be sinking. Still impressed with the idea of renal disease, I procured a sample of the urine, but *I could not establish the presence of albumen*; although a very slight opacity occurred on heating and acidifying, no reaction was obtained with nitric acid in the cold. The colour was good, and the sp. gr. about 1020; under the microscope pus-cells were still found; *tube-casts, some granular and some distinctly fatty, were found without much difficulty.* She rallied from this alarming condition (the real nature of which remained doubtful), and still continues much as before. In January, 1875, the urine was found turbid; it still contained