

with specific gravity of 1005 to 1012. Albumin may not be found, and frequently when discovered its presence is only demonstrated by the more delicate tests. Casts are always found at some stage, and will be seen frequently if careful search be made. Phosphates are markedly decreased.

Beginning in the left ventricle, and eventually extending to the whole organ, the heart becomes hypertrophied. This is known by the apex beat being displaced downwards and outwards. However, where there is emphysema of the lung this is often hard to demonstrate. This is the more to be regretted because not only is hypertrophy of the heart an important link in the diagnosis of granular kidney, but emphysema is most liable to occur at a time of life when the renal trouble is most prone to develop.

The renal failure eventually draws on increased cardiac action to aid in the work of elimination, and frequently death is precipitated by the inability of the heart to longer carry the load demanded.

Hyaline degeneration and arterio-capillary fibrosis attack the vessels generally. The evidence of this condition is seen in the radial artery, for instance. By obliterating the radial pulse the vessel can be felt as a distinct rounded structure, while in health it cannot be recognized from the surrounding tissue.

Persistent high arterial tension is an early and important sign of the possibility, nay, I might say probability, of renal difficulty, particularly if no other cause is obvious.

With persistent high arterial tension there naturally follows an hypertrophy of the arterial coats, either due to the severe strain which has to be met by the vessels or in part to the various poisons floating in the blood—such as lead, mercury, or the virus of syphilis.

I once saw a very ingenious explanation of high tension in this condition. It was a mechanical one, and as few mechanical theories will long explain any of the functions of the body, it will hardly suit in this case. However, it may be one factor in the determination of the degree of abnormal high tension which may occur, and I will give it to you for what it is worth.

The writer\* maintained that granular kidney was provocative of anemia, and as a result there is an unusual and marked difference between the specific gravity of the blood plasma and that of the corpuscles. Therefore the corpuscles are not carried along with their usual celerity, but have a tendency to fall and

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