

of the body and arterial contraction in another. One often sees people who, under one or the other form of perturbing influence, become flushed and hot in the face and cold in the extremities, or hot in the extremities and cold in the face.

In such a case as that which I have quoted we might, on the other hand, recognise a perturbing nervous influence as a cause of peripheral arterial tension, of defective nutrition of the heart, of glycosuria, and probably of the faucial and gastric affection.

There is much reason in fact to look upon this as the best explanation of the whole array of phenomena. But in a preponderance of the cases presenting glycosuria together with symptoms of angina, the evidence of primary neurotic disturbance has not been so strong. In thinking over these I have been inclined to recur to a point shortly dealt with in the commencement of this paper, and to consider how far it might be possible that excessive tension of the arteries in one part of the body might be, so to speak, balanced by excessive blood pressure in arteries or other parts of the body. Surely this is what we, in a way, invoke when we attribute an internal inflammation to a chill of the external surface, or when we apply an irritant to the surface of the body in order to reduce inflammation in an internal organ. In addition we must not forget the reflex influence of one organ on another. Stomach disorder may have had its share in the production of the glycosuria, as it certainly had, in the case quoted, its share in the intensification of the angina. As one studies angina, one certainly finds that many apparently accessory conditions have to be dealt with in its treatment, notably for one, constipation.

All constipation is certainly attended with increase of arterial tension. In the treatment of angina I have found practically that the maintenance of a daily action of the bowels has been a need of the first importance, just as I have found that the avoidance of over-filling of the stomach, often resorted to where the patient is weak and failing, is imperatively necessary.

But I must not be diverted into a paper on angina, and I do not at the present propose to enter further into the relation of affections of the nervous system with glycosuria than has been dealt with in my former paper, and illustrated in this.

I have but one conjunction to put before you. A year or two ago one of my house-physicians, Mr. W. W. Ord, making thorough examination, according to rule, of a patient just admitted to St. Thomas's Hospital, found that her urine gave a strong reaction of sugar. She had been admitted for acute rheumatism, arising during lactation. Her child having been separated from her, it had been necessary to use applications to stop the flow of milk. The breasts had been strapped with belladonna plasters, and extract of belladonna had

been applied over the nipple areolæ. The examination of the urine was made within a few hours after the institution of this treatment, which evidently proved effective in staying the secretion of milk. After the detection of sugar, frequent examination of the urine was made. The sugar reaction turned out to be most marked in the beginning, and gradually diminished until at the end of three days it had entirely disappeared. Similar observations have been made in six cases—four in St. Thomas's Hospital, two at the Cane Hill Asylum. The chemical reactions obtained have appeared to correspond exactly with those which would be yielded by glucose, but their rapid evanescence has so far stood in the way of the obtaining any sufficient quantity of urine to afford opportunity of a complete investigation. The indication is, apparently, that the stoppage of the secretion of milk has determined a backward flow into the vessels of lactose in a quantity so large as to be represented by the appearance of a considerable quantity of glucose in the urine. That lactose introduced into the system as a constituent of milk through the stomach, not only acts as a diuretic, but gives rise to glycosuria is asserted by M. Germain Sée. About last midsummer my friend Dr. Keser was good enough to send me a copy of the *Semaine Médicale* of June 12th, containing a note on "Un Nouveau Médicament Diurétique dans les Maladies du Cœur, la Lactose."

I have since seen many references to this paper, which states that an enormous diuretic action is established by the use of 100 grammes of lactose (that is to say, the quantity contained in two litres of milk), while there is no certainty of obtaining this effect by four or five litres of milk. M. Sée goes on to say that while milk taken in large doses produces diuresis and a very marked glycosuria, large doses of lactose cause a remarkable polyuria, but no glycosuria. My house-physician's observation would appear to agree with this, so far as the suppression of lactation is concerned. The two sets of notes appear to confirm one another.

Both appear to me to suggest questions that should be carefully worked out. Why lactose given by itself should produce diuresis without glycosuria; why lactose given with other constituents of milk should give rise to both, while requiring a larger dose, is what at present I do not profess to understand.

M. Germain Sée believes that the sugar remains in the blood when lactose is administered pure. With all respect to him, I think that the whole conditions require further elucidation.

With this I conclude my paper this evening. I trust that you will understand that I have been, so to speak, talking from my notes, thinking of the many ways in which glycosuria presents itself as a symptom in various diseases and disorders,