A HUNDRED YEARS AGO

Extracted from a 1915 issue of *The Practitioner*

THE TRAGEDY OF GLYCOSURIA

BY KEITH ROBERTSON, M.D. ASSISTANT SURGEON, HOSPITAL AND INFIRMARY, GREENOCH, ETC

A YOUNG woman, pale, thin, and tired, walked into my consulting room, and sat heavily down in the chair opposite me. There, her cheeks hollowed, her chin sharp and pointed, her body thin, and her aspect haunted, she confronted me.

Occasionally, she passed her tongue between her lips to moisten them, as if she felt them dry and uncomfortable. There was a slight flush on the prominences of both cheeks, and she looked like an animal which had nearly been starved, and which licked its lips in anticipation of a meal.

"There was a slight flush on the prominences of both cheeks, and she looked like an animal which had nearly been starved, and which licked its lips in anticipation of a meal"

Although her manner was quick and irritable, she commanded my sympathy; for, young as she was, she was in much distress. She was passing great quantities of "water," and was compelled to rise every two hours during the night; it was wearing her out. Then, so irritated and itchy about the vulva was she, that she could not fall asleep; no amount of washing, bathing, or anointing relieved her. And what a thirst! It was insatiable.

She almost named her trouble as she spoke.

I boiled some Fehling solution, and added a drop or two of the urine she had brought with her, and the reduction to brick-red was immediate and unhesitating. I added three drops of liquor ferri perchloridi to a little more urine in another tube, and there was the tell-tale deep red colour of diacetic acid! Bad! Very bad, combined with her youth!

We call it diabetes, simply because there is an excessive flow of urine. (The mind-picture of that word is that of an archer, standing and taking aim; his left arm is forward, the bow is bent, and the string drawn tight, whilst his left foot is advanced, and his right back. It is this stride which is in our mind: he is overstepping, exceeding; it is *diabainein,* to bestride, to exceed, and the flow of urine in glycosuria oversteps the bounds of custom and comfort.

There is a diabetes mellitus; and there is a diabetes insipidus. In both, there is a large output of urine, thirst, and emaciation; but in mellitus hunger and glycosuria are present as well. What, then, is diabetes mellitus? It is a disorder of nutrition, in the wide sense. There is sugar in the blood in greater amount than usual; there is sugar in the urine, where there ought to be none at all.

Let us take up the survey of our knowledge of the causes of glycosuria as it stands today.

All we know definitely are two elementary things: one, that if the pancreas of the dog is removed altogether, there follows immediately a severe diabetes, with all the usual symptoms of hyperglycaemia, glycosuria, polydipsia, polyuria, wasting, acetonaemia, and death by coma; and the other that, by post-mortem examination, in cases of severe diabetes, 90 per cent show characteristic changes of the islands of Langerhans in the pancreas, and that in mild cases it runs from 40 to 50 percent; improved methods of examination might bring in the bulk of the other cases within the group of those thus shown to have some lesion of the pancreas. These facts make us strongly suspect the pancreas.

We know, too that, after the pancreas has been removed, no other organ educates itself to take its place. Progressive diabetes has never been produced by the excision of any other organs.

The pancreas, therefore, is more than under suspicion. Now, if it is to blame, the question is whether it is due to the external secretion, which flows out by the duct, or to the internal secretion.

It is not due to the external secretion; for, if we remove part of the gland, preserve the part with the vessels and duct, transplant it near to the surface, and arrange to let its external secretion escape, we get no diabetes; but, on removal of this part too we get immediate diabetes. Therefore, it is not the external secretion.

It must, then, be due to an endocrinic secretion: the pancreatic hormone. But this pancreatic hormone has never been isolated. Whatever it is, it is only presumed to be.

"If one could introduce at regular intervals into the body of this young woman the required quantities of the pancreatic hormone, the muscles would be able to take up the sugar they so much require, and would cease their urgent calls on the liver, with the result that all her glycosuric and hyperglycaemic symptoms would disappear"

If one could introduce at regular intervals into the body of this young woman the required quantities of the pancreatic hormone, the muscles would be able to take up the sugar they require, and would cease their urgent calls on the liver, with the result that all her glycosuric and hyperglycaemic symptoms would disappear; further, the fat would not be broken down in the present disadvantageous way, nor cause the diacetic acid which is present in her urine. But the pancreatic extract has not yet been worked up to practical use, and we have not been able to separate the hormone. An unsatisfactory ending, is it not?

1868-2015
Supporting general practitioners for 147 years