

LIV. *A Description of the Lymphatics of the Uretbra and Neck of the Bladder.* By Henry Watson, Surgeon to the Westminster Hospital, and F. R. S.

Read Dec. 14, 1769. **T**HE valvular lymphatics, as a system of vessels, *sui generis*, are allowed to have a very considerable office in the animal œconomy; but an office, subordinate to that of the blood-vessels: at least, they have been supposed by many of the physiologists, not of so much consequence, in preserving the health and life of the animal.

If we consider, that an obstructed *thoracic duct*, which is in fact but a large lymphatic, will destroy life as effectually as a ligature made upon the *aorta* itself; we must conclude the lymphatics to be vessels of much greater importance than some have imagined: nearly of as much consequence, in supporting and carrying on the animal functions, as the arteries and veins themselves: for if an obstruction of the *aorta*, or great artery, can produce a very quick, or sudden, death; an *obstructed thoracic duct* will as certainly lead to a tedious and lingering one.

The case of the obstructed *duct*, though not indeed often seen, yet is every now and then to be met with. It is the one cause of a *marasmus* not known, or not attended to: generally owing to an enlargement of the

the lymphatic glands that lie near to, and in contact with the duct: generally too attended with obstructions in the more external conglobate glands; therefore always to be suspected, where we have these appearances, accompanied with a gradual wasting of the solids. In children and young subjects we meet with proofs of this disease; a disease, which never could have been learnt, but from the dissection of morbid bodies.

The lymphatics are said to be the true, and only system of absorbing vessels. I will suppose they are; though perhaps this opinion may yet admit of some doubts: however, they certainly are the vessels that take up the watery *latex* from most parts of the body, and return it back to be again mixed with the blood. This free absorption of the lymph is the great security against suffocation, injurious pressure, and an obstructed circulation in every part of the animal.

Many valuable discoveries have lately been made, of the existence of these vessels in birds, fish, and *amphibii*. That most accurate and indefatigable anatomist, Dr. Hunter, has writ fully and explicitly upon the lymphatics in the human body; and yet, still it is to be wished, we knew more about them.

We have not been able to see their origins in any one instance; we have not traced them through the whole body, as we have done the blood-vessels. It is reasonable to suppose they abound universally; but it is doubtful whether in many parts they exist, or not; for the most eminent anatomists confess, there are many parts, in which, hitherto, they have not been able to discover them.

It may not therefore be unentertaining to this learned Society, who so studiously promote every useful inquiry, not only to have a demonstrative proof of the existence of lymphatics in a part of the human body where they have not as yet been discovered ; but also to have an opportunity of knowing that the true origin of these vessels may easily be shewn.

As to their precise origin, it has indeed been conjectured, and very reasonably, from experiments *à posteriori*.

It has been supposed they arise from all the surfaces and cavities of the body ; because thin fluids and subtle particles will be taken up from such cavities, or surfaces, and will be readily enough conveyed into the blood : but then it has never been shewn, that they do arise from any one such surface or cavity.

Commonly, the lymphatics are never filled from their beginnings, or little orifices. When they have been injected, it has always been done by using some violence ; either by cutting into them, bursting, or tearing them asunder ; so that the injection rather gets in some how at the side, and not at the extremity of the vessel.

The lacteal vessels perhaps cannot, at least have never been, to my knowledge, injected from the cavity of the intestine in the dead body. It is presumed, that, as the lymphatics are similar to these in other respects, their origins must be also similar : that if the orifices of the lacteals are too fine to be discovered, the mouths of the lymphatics are also too delicate to be traced out. But with regard to the lymphatics of the human urinary bladder, it is certainly otherwise. When the part is fresh and sound,

we may, with a little trouble, blow into the mouths of these vessels, small as they are; or introduce a fine bristle into them, if we have but a steady hand and a good eye. I have frequently done both, in the presence of many witnesses; so that, without using the knife or lancet, the least force or violence, air may be thrown into the lymphatics from their very beginnings; and mercury may be made to pass by the same orifices.

Though I have said we may easily have an ocular demonstration of the origin or mouth of the lymphatic, in this part of the human body, I must confess, it is not always we can have that satisfaction: no part is more frequently diseased: inflammation folds up the mouths of these little vessels; and it is not to be expected we can shew their orifices when the *urethra* is in such a state.

It will always require some dexterity to catch the opening of the lymphatic; but the bristle, once fairly introduced, will generally pass with great ease some way within the vessel.

Here then we may satisfy ourselves in what manner the lymphatics do actually begin from surfaces: and to those who, without ever having seen the origin of a lymphatic, have nevertheless reasoned so well, and so justly, upon this subject, it may perhaps afford some pleasure and satisfaction to find their conjectures agreeing so perfectly with the structure.

The situation of the lymphatics, in general, is superficial; that is to say, they are mostly to be seen upon surfaces; though there are some deeper seated ones, which accompany the blood vessels. They have been

well described by authors, as exceeding fine, tender, and transparent vessels, frequently joining into one another, and intersected by a number of very delicate membranous pouches or valves; so that, having an injection thrown into them, they give the appearance of being full of little knots.

The lymphatics are apparent enough, when they unite and grow large; but from their exility, want of colour, and transparency, are very difficult to be discovered before.

Owing to these circumstances it is, that their origins have never before been seen; and that in many parts of the body, where they are nevertheless supposed to exist, they still lie unnoticed. Haller, after speaking of these vessels in many other parts of the body, goes on thus: “*Quæ a pene veniunt mihi minus nota sunt, sed dicta Cowpero. Alia huc a vesiculis feminalibus tendunt, aut certe ab earum vicinia, aut a vesicæ urinariæ sede, aut ab ipsa demum vesica, quæ quidem vascula iterum fateor mihi nondum visa esse.*” So that Haller, who knows so well the structure of the human body, knows nothing of these lymphatics of the bladder, or membranous portion of the *urethra*.

The lymphatics of the urinary human bladder and *urethra*, first shew themselves on each side the *verumontanum* or *caput gallinaginis*, and by very little orifices take their origin from the internal membrane that lines the *urethra* and bladder, on whose surface they open.

In their natural state, they appear like so many fine threads lying close together, but diverging afterwards,
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as they pass over the prostate gland and neck of the bladder, and inosculating or communicating very frequently, they form a kind of network or embroidery. From hence they are continued through the cellular membrane behind the internal coat of the bladder, and seem to join with the lymphatics of the *vesiculæ seminales*, to be continued with them to the neighbouring glands, and so on to the thoracic duct.

I have not been able to find lymphatics in any other part of the *urethra*; indeed, this canal seems to be perfectly void of them till we come to its membranous portion, where we meet with these I have been describing; and it may be remarked, that here they are placed in that part of the *urethra* where the greatest quantity of moisture is supplied. Very probably the sealing up the mouths of these delicate vessels, by frequent inflammation and induration, may give rise to that obstinate *stillicidium* which is seldom or ever cured; owing to an accumulation of thin fluids, with a faulty absorption.

These lymphatics of the *urethra* and bladder also point out the road, by which any subtle *virus* may pass, with the lymph, directly into the mass of blood, and contaminate the whole habit, without giving the least appearance of any local disorder.

To have a clearer idea of the vessels I have been treating of, I must beg leave to refer to the drawing annexed, in which these lymphatics of the urinary bladder and *urethra*, in the human body, are carefully and very accurately delineated.

Explanation of T A B. XVI.

This drawing is an exact representation of the lymphatics of the *urethra* and neck of the bladder, as they appear after having been injected with mercury, and preserved in spirits.

- A. The membranous portion of the *urethra* slit open.
- B B. Bristles in the ducts from the *vesiculæ seminales*.
- C C. Prostate gland.
- D D. The inferior part of the bladder laid open.
- E E. Bristles in the *ureters* where they open into the bladder.
- F F. The lymphatics,

