

recommend the iodine to be used in the same manner as employed by me, for it does not give more pain than the injection, and is not so likely to excite excessive inflammation as the introduction of a quantity of pure tincture of iodine, a method of treatment advocated by some surgeons, and it is certainly a much less painful plan than that lately recommended by Professor Porter, whose operations I have had opportunities of witnessing.

3. A short time ago, the late Mr. Liston showed that the fluid of hydrocele frequently contained spermatozoa, and he drew from this circumstance the conclusion, that in such cases a radical cure by the obliteration of the sac is not to be expected; for, instead of the latter being composed of the tunica vaginalis (a serous membrane), it is formed of the mucous lining of one of the seminal ducts—a dilatation of which has taken place, in a manner similar to that observed in the formation of the tumour of Ranula. When this discovery was first announced, a good deal of importance was attached to it by the illustrious author himself, and by writers on systematic surgery,* yet in the case under consideration, a most complete refutation of these views was furnished; for though the fluid contained an immense quantity of spermatozoa, as proved by careful microscopic examination, the cure was accomplished by adhesive inflammation of the walls of the sac: the result of treatment was also strongly opposed to an opinion recently advocated, viz., that it is not by the effusion of lymph, and adhesion of the walls of the sac, that the cure of hydrocele is effected, but by a restoration of the functions of the absorbents of the part. That a cure is frequently accomplished without obliteration of the sac, is no doubt true; but, on the other hand, it is equally certain, that it is by adhesion that the radical cure takes place in a great number of cases, for we know that it is by producing this condition that the success of various plans of treatment of hydrocele is established.

In reference to the presence of spermatozoa, Mr. Liston says—"This subject deserves further investigation to discover—first, if the limpid fluid, drawn from cysts of the scrotum and inguinal region, uniformly, or often contains spermatozoa. Secondly, What connexion subsists betwixt the seminiferous tubes and their cysts? Thirdly, Whether or not, dilatation of these parts of the epididymis or vas deferens, by obstruction or otherwise may not, in some instances, give rise to these collections? If so, this being a pouch lined by mucous membrane, we should have an easy solution of the difficulty regarding a radical cure not following injection as in the serous cyst. The microscopic examination of the lining membrane of a recent cyst would easily settle the nature of the secretory surface."

In the same volume of the "Transactions," we find a paper on the "*Presence of Spermatozoa in the Fluid*

* "It is still matter of dispute, whether these had escaped from an accidental wound or giving way of the tubular structure, either of the testicle or of the epididymis; or whether the cyst, from which they were derived, had been formed by dilatation of the tubular structure—as takes place in lacteal tumours of the breast, and in ranula. If the latter opinion prove true, as is inclined to by Mr. Liston, little benefit need be expected to result from injection in such cases."—*Miller's Practice of Surgery*, page 614, American Edition.

of Hydrocele," by Mr. Lloyd of St. Bartholomew's Hospital. This gentleman's observations go to prove that we do not find spermatozoa in the clear limpid fluid devoid of albumen, as stated by Mr. Liston, and consequently their presence is not exclusively confined to hydrocele of the cord; for in one of his cases, "the situation of the fluid was such that there was no reason to doubt the case being hydrocele of the tunica vaginalis." In his second case he merely mentions that he found spermatozoa in the fluid of a hydrocele, which he had previously tapped 15 or 16 times, but no mention is made of its precise nature, but in the third case, in which "the situation of the fluid appeared to be very much like that of common hydrocele of the tunica vaginalis," spermatozoa were found in great numbers, although the fluid "displayed very much the appearance described by Mr. Liston, as exhibited by the fluid of the encysted hydrocele in which he had discovered spermatozoa, but in one respect it differed from that, as it contained a considerable quantity of albumen"—the product of secretion from a serous membrane.

Mr. Dalrymple, in the 27th volume of the same work mentions that both he and Mr. Liston had lately found these animalculi in the fluid of common hydrocele, and accounts for their presence in such cases, by supposing that the testicle or cord had been punctured during the operation, and thus an exit afforded for their escape; and at a subsequent meeting of the Society, Mr. Paget stated, "that the most probable explanation of these cases, therefore, seems to be, that certain cysts, seated near the organ which naturally secretes the materials for semen, may possess a power of secreting a similar fluid; and this explanation is in some measure supported by the analogy of those cysts which are found in the ovaries, and more rarely in other parts of the body, especially beneath hairy parts of the skin, and in which the ordinary products of the skin, such as epidermis, sebaceous matter, hair, &c., are formed on the genuine cutaneous tissue of their internal surface."

It appears to me that neither of the above explanations is satisfactory. It is true that by a careless operator the testicle or cord might be punctured in a small hydrocele, but in one so large as to contain forty ounces of fluid, and in which the testicle and cord were removed to a great distance from the point of entrance of the trocar, the escape of spermatozoa cannot be accounted for on such grounds. And Mr. Paget's solution of the difficulty seems equally untenable; for without resting our objection to it on the fact that cysts in the neighbourhood of other glands, whose secretions are purely (or nearly so) excrementitious, as the kidney and liver, are not found to contain the most essential elements of these secretions, and that the fluid of cysts developed in close contact with the testicle and seminal ducts is found destitute of seminal animalcules, as proved by the recent observations of Gosselin,† it is impossible to believe that a diseased serous membrane should possess the property of se-

* *Medico-Chirurgical Transactions*, vol. 27, p. 401.

† *Vide Archives Générales*, tom xvi.; and *British and Foreign Medico-Chirurgical Review*, No. IV. p. 533.