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AMPUTATION OF SCROTUM FOR ELEPHANTIASIS,

BY GEO. A. TURNER, M.D.



A View of Current Medical Literature.

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In addition to the above, the titles of original articles, not selected, appearing in the medical journals both of this country and Great Britain during the previous month, are given ; the whole forming a general view of the current medical literature of Great Britain and the United States.

Specimen copy sent on application.

NEW YORK, July, 1882.

- One Hundred and Thirty-Eight Cases Amputation of Scrotum for Elephantiasis Arabum, Geo. A. Turner, M.D., C.M., with lithograph, *Glasgow Medical Journal*.
- Mad Actors, *Journal Psychological Medicine*, London.
- Contagiousness of Pulmonary Consumption, I. Burney Yeo, M.D., F.R.C.P., *British Medical Journal*.
- Five Cases of Hare-Lip, James Whitson, M.D., *Medical Times and Gazette*, London.
- On the Diagnosis and Prognosis of Idiocy and Imbecility, William W. Ireland, M.D., *Edinburgh Medical Journal*.
- Sodium Nitrite in Epilepsy, W. T. Law, M.D., F.R.C.S., England, *Practitioner*, London.
- Clinical History and Diagnosis of Hæmatoma of the Dura Mater, James Finlayson, M.D., *Glasgow Medical Journal*.
- Therapeutic Properties of Quinine Iodate and Bromate; and Physiological Activity of Superoxidised Molecules, Charles A. Cameron, M.D., *Dublin Journal Medical Science*.
- Eserine and Pilocarpine in Glaucoma, and Eserine in Ocular Neuralgia, Simeon Snell, L.R.C.P., M.R.C.S., *British Medical Journal*.
- Syphilitic Azoospermism, John P. Bryson, M.D., *St. Louis Courier Medicine*.
- Codeia in Treatment of Diabetes, R. Shingleton Smith, M.D., *British Medical Journal*.

ITEMS—"NOTES AND TITLES."

ONE HUNDRED AND THIRTY-EIGHT CASES AMPUTATION OF SCROTUM FOR ELEPHANTIASIS ARABUM.

BY GEO. A. TURNER, M.D., C.M.

FOR the 12 years previous to 1880 I was resident in the Samoan group of islands in the South Pacific, as a medical missionary, and it was there that the cases which form the subject of this paper were met with. Samoa is the name of a group of volcanic islands in Central Polynesia. Elephantiasis arabum is extremely prevalent throughout the whole group, attacking natives and Europeans alike. Shortly after arriving in Samoa I was applied to by a native to remove an enormous tumour of the scrotum, which hung down below his knees and very much impeded his walking. Being single-handed I naturally felt reluctant to attempt such a formidable operation. The man was so importunate, however, that I wrote to Sydney, N.S.W., to procure an aortic tourniquet. Such an instrument could not be obtained in

Sydney; and, before I could get one from England, H.M.S. "Cossack" called at Samoa, and in conversation with the staff-surgeon of that ship, Dr. G. V. M'Donough, I mentioned the case. It happened that Dr. M'Donough was a student in Dublin in 1844 when O'Ferrall's operation took place and witnessed it. He suggested the possibility of controlling the hæmorrhage by a clamp composed of parallel bars, with screws at each end, applied to the neck of the tumour. I subsequently found that such a clamp is advised in the earlier editions of Dr. Druitt's *Vade Mecum*. An iron clamp of this description was kindly made for the purpose by the chiefengineer of the "Cossack," and on July 9, 1872, the operation was performed. The man was probably about 45 years of age, but looked several years older. The tumour measured 30 inches in circumference at the knees, and hung down nearly to the ankles. For about an hour before operation the patient was kept lying on the operating table with the tumour raised considerably higher than his body for the purpose of emptying it as far as possible of blood. The clamp was then fixed in position, but not screwed down. Dr. Horner administered chloroform. As soon as the patient was thoroughly under its influence we screwed the clamp tightly down. Dr. M'Donough commenced the operation dissecting up three rectangular skin flaps, one from the upper and front part of the tumour, and two lateral ones—the centre one to form a new covering for the penis, and the side ones to cover the open surface after the tumour was removed. The penis was then dissected out and held up on the abdomen. The cords were next cut down upon and tied, it having been decided not to attempt to save the testicles. In each case the whole cord was included in one whipcord ligature, according to the old method. The rest of the pedicle was severed by a few strokes of the knife. The clamp was then slowly unscrewed and the arteries tied as they showed themselves. About 30 required ligature. The flaps were then brought into position and secured. The clamp answered its purpose admirably, there being no bleeding during the operation, except a little venous hæmorrhage from the tumour. The operation lasted about an hour, and the greatest difficulty we met with was to support the mass. This had to be done by a plank passed under it and held at each end by an assistant. The tumour was found to weigh 77 lbs.

This second case was not nearly so large as the former, the tumour, after removal, not weighing quite 30 lbs. The operation was performed precisely in a similar manner to the first one, except that in this the right testicle was dissected out from the

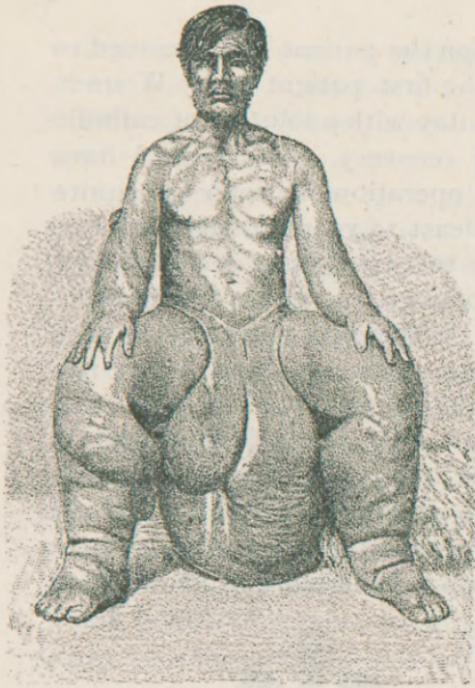


FIG. A.



FIG. AI.



FIG. B.

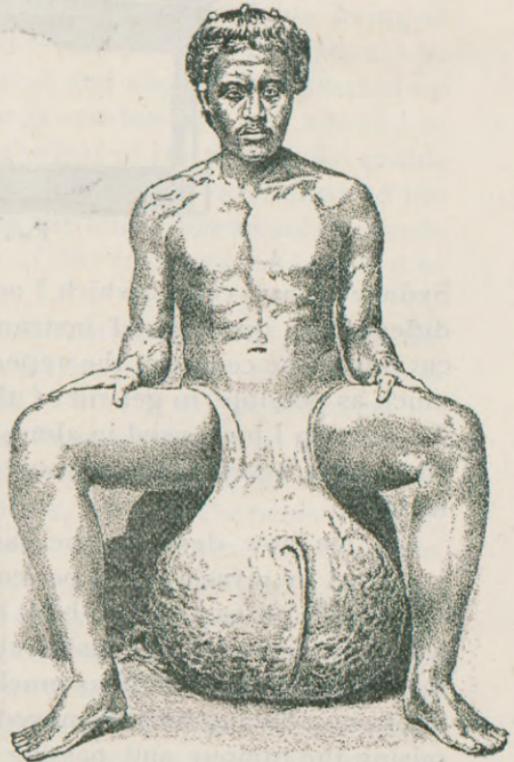


FIG. C.

mass and retained. After operation the patient was removed to a house close by the one where the first patient was. Wounds in both cases were dressed twice a day with a solution of carbolic acid in oil. Both made a good recovery. The first, I have repeatedly seen since. After the operation he soon got quite strong and stout, and looked at least 10 years younger than he did before it. The success of the two operations described led many from all parts of the Samoan group, who were similarly affected, to apply to me for relief. In the eight years, 1872 to 1879 inclusive, I performed 136 of these operations, and I am fortunately able to show photographs of several of these cases.

In one of the earliest operations which I performed, and in which I used the iron clamp above described, there was considerable difficulty afterwards from retention of urine. This, I thought, might be owing to the prolonged severe crushing of the penis between the bars of the clamp. I therefore procured from

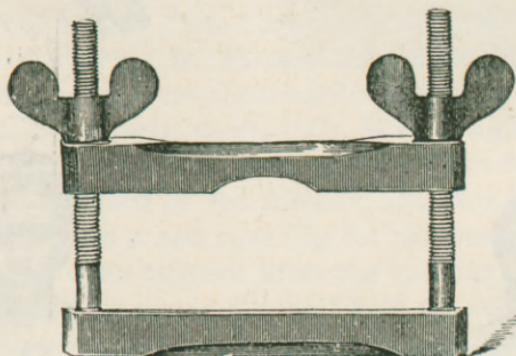


FIG. D.

Sydney a brass clamp, which I now show you (Fig. D) and which differs from the original instrument only in that it has a piece cut out of the centre of the upper bar; the object of which is, as much as possible, to get rid of the undue pressure on the penis. This clamp I have used in almost all my subsequent operations, and I have never had any trouble from retention of urine after its use.

Let me now describe the various steps of the operation as practised by myself. The patient should be placed on the operating table at least half an hour before operation, and lie quietly with the tumor raised considerably above the level of the body, that it may empty itself as much as possible of its blood. The upper bar having been removed, the clamp is then applied by raising the tumour and passing the screws up from behind on either side of its neck, the lower bar being held as far back to-

wards the perineum as possible. The tumour is then turned down and the upper bar put on and fixed in its place by the thumb screws. These, however, at this stage, should only be applied to keep the clamp in position, and should not, in any way, interfere with the circulation in the tumour. Before applying the clamp it is always well to make sure that no hernia exists ; or that if it does, that it has been wholly reduced.

The clamp being in position, chloroform is administered, the tumour still being kept elevated. The clamp is rapidly and firmly screwed down on both sides simultaneously. The tumour should now be turned upwards to expose its posterior surface. If it be small it may simply be turned upwards on the abdomen, its weight being supported by the hand of an assistant. In the case of large tumours some other contrivance is necessary, and I have been in the habit of using a couple of large hooks, like shark hooks, attached to a block and tackle fixed to the ceiling. These hooks are passed through the leathery skin at the lower part of the tumour, and by means of the tackle the whole tumour is raised so as thoroughly to bring into view its posterior surface. A rounded skin flap is then raised from the posterior part of the neck of the tumour, the horns of the incision being at either end of the lower bar of the clamp. This flap should be about $1\frac{1}{2}$ inches long in its centre, and should be dissected up close to the clamp. The tumour is now lowered and allowed to fall forwards so as to rest upon the leaf of the table. To enable this to be done the patient should be drawn well down to the end of the table, and his legs from the knees downwards be made to hang down, one on each side of the leaf, and be fastened to the legs of the table.

Either two or three skin flaps should now be raised from the anterior surface of the tumour. If the penis be superficial, and not covered up by hypertrophied tissue, it will be sufficient to raise a right and left rounded flap, having their outer ends at the right and left end respectively of the upper bar of the clamp, and meeting in the centre under the penis. Where the penis is buried in the mass of the tumour, as it often is, in addition to the right and left flaps, just mentioned, a third should be made between the two, and as this central flap is made for the purpose of affording a new covering for the penis, care should be taken that it be formed of sufficient width to permit of its encircling that organ without any undue straining. The length of these flaps must be regulated by the probable bulk of the parts they will have to cover after the operation is completed. After dissecting up these

flaps the penis is next dissected out. This is sometimes a matter of no little difficulty on account of the mass of hypertrophied tissue in which it lies buried. The best method is to start from the opening from which the urine escapes, which in some cases is found at the lowest part of the tumour, and from this boldly cutting upwards to expose the glans penis. This having been found, it is not difficult to dissect out the penis, which should then be held up on the abdomen, along with the anterior flaps, by an assistant. The next step is to find the testicles. These also, especially in the larger cases, are deeply buried in the substance of the tumour. The easiest and quickest way of finding these is to cut diagonally across the face of the tumour, first on the one side and then on the other and partly by the use of the knife, and partly by tearing the hypertrophied connective tissue with the fingers, they are soon discovered. They should then be dissected up with their cords and held well out of the way. This having been done, a very few strokes of the knife will sever all the remaining tissues constituting the neck of the tumour, and the mass is removed. The testicles should next be examined. In some, even of the largest cases, they are found to be quite healthy; and almost, if not quite, of natural size. In the majority of cases, however, there is more or less hydrocele on one or both sides, generally associated with very considerable thickening of the tunica vaginalis. I have always treated these hydroceles by freely incising them, and, where there was much thickening of the sac, excising a very considerable portion of it. In some cases, where there was excessive hypertrophy of the sac, I have removed the testicle on that side. The next step is to tie all vessels which are seen in the stump. In all my operations I have used carbolised catgut ligatures, which were cut close off and left to be absorbed. The next thing is slowly to unscrew the clamp, being on the watch to tie anything that bleeds. At this stage of the operation, when sometimes a number of vessels show themselves simultaneously, I have found great advantage from the use of Dieffenbach's small self-holding forceps, which while taking up very little room, control the hæmorrhage efficiently, and give the operator time to tie the vessels one after another. In most of the larger cases there are usually some 20 to 30, or even more, vessels which require ligature.

If it should happen on loosening the clamp, as has occurred to me on two or three occasions, that some considerable vessel, which has at first been overlooked, slips behind it and bleeds freely, the best plan is at once to unscrew the clamp and throw

it off, trusting to speed in securing all bleeding points. Too great care cannot be taken to tie every point from which it seems possible that bleeding may occur, as neglect of this precaution may give rise to very troublesome hæmorrhage some hours afterwards. After all the vessels have been ligatured, the flaps are brought into position, and united with wire or catgut sutures. It is well to put a drainage tube on each side behind the testicles, A 1-20 aqueous solution of carbolic acid was freely applied before the wound was closed, and antiseptic dressings were invariably employed.

Of the 136 operations already mentioned, the two largest were for the removal of the tumours (Figs. A and B). In both of these cases the tumours weighed almost exactly 80 lbs. They were weighed about an hour after removal, and after a good deal of blood and fluid had drained away. In the case of A, the tumour had been years in growing. When he stood up it reached almost down to the ground, and measured 40 inches in circumference. It will be observed that his limbs were all enlarged from the same disease. At the time the photograph was taken his right calf measured 36 in. in circumference, and the left only an inch or two less. In this case the testicles were both of natural size, no hydrocele; and they, with the penis, were preserved. The operation itself—formation of flaps, dissection of the organs out from the mass, and removal of the tumour—was completed in 12 minutes. The wound healed very rapidly, and Fig. A1, taken on the 28th day after operation, shows the result.

In the case marked B, the tumour, which also was of several years' growth hung down nearly to the ankles, and measured 54 inches in circumference. The elephantiasis in this case was almost entirely confined to the scrotum, the left leg and foot being the only other part affected, and that only slightly. In this case there was hydrocele on both sides, the penis and right testicle were preserved, the left testicle being removed.

The illustration, Fig. C, is interesting as showing the occasionally rapid growth of such tumours. The patient was a man, about 20, otherwise perfectly healthy, and the tumour had grown in two years. It weighed 54 lbs. after removal. Penis and both testicles were retained, and patient made good recovery.

Of the other tumours removed one was over 50 lbs., three were over 40 lbs., and the rest were of various sizes, from about 7 or 8 lbs. up to 37 lbs. In none of the cases was the penis removed, in none were both testicles removed, and in the great majority all the organs were preserved. In one case, in which the tumour

was over 20 lbs. in weight, the wound healed almost entirely by first intention, and patient walked home, a distance of several miles, within a fortnight after operation. Dec. 22, 1874, I operated on four of these cases ; on the 23rd on one ; and on the 25th on one ; and on Jan. 26, the last of the six went home well.

Of the 136 cases I lost only two ; on the 10th and 11th day after operation respectively. In the one case obstinate diarrhœa was the cause of death, and in the other, fever. In these cases the tumours weighed about 10 and 15 lbs. respectively.

The success which attended these operations I attribute mainly to four things : 1. The completeness with which hæmorrhage is controlled by the clamp ; 2. The covering in of the wound with skin flaps ; 3. The use of antiseptic dressing ; and 4. The fine physique, and coolness, and powers of endurance of the Samoans.

In the last edition of Curling on *Diseases of the Testis*, Esmarch's method of controlling bleeding is recommended in these operations. But it is added, "In thin patients arterial hæmorrhage may be further controlled by compression of the aorta with the abdominal tourniquet." In two of my operations I made use of Esmarch's tubing, and it answered fairly well ; but I prefer the clamp as the more effective method. In these cases, after the removal of the tumour, the elastic tube had a great tendency to slip off, and was only retained in its position with difficulty. But my greatest objection to it is that when it is employed the skin is drawn into folds, and the operation thereby rendered much more difficult. When the clamp is used, on the other hand, we have a flattened surface both anteriorly and posteriorly, which renders the operation very much more easy. Another great advantage which is gained from the use of the clamp is that, after the removal of the tumour, it is easy to slacken the screws, half a turn at a time, so as to cause any vessels which have been overlooked to show themselves, the bleeding being easily controlled by tightening them up again.

In almost all my cases I used bichloride of methylene. I first used this anæsthetic on account of statements of Dr. Richardson, Mr. Morgan, and others, who claim that it is "less dangerous than chloroform," that "its action is more rapid," that "recovery is more prompt," and that "if dangerous symptoms show themselves during its administration, they subside sooner on discontinuing the inhalation." I have been thoroughly satisfied with it, and never had any difficulty in connection with its administration, though this was in almost every case done only by a native.—*Glasgow Medical Journal*, June.

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Dr. John Harley, of London, in his "Old Vegetable Neurotics," details a large number of experiments upon the human and animal system, with six of what he considers the narcotic alkaloids. He concludes that although all six possess both narcotic and hypnotic properties, yet these are so varied in degree and force, as to make their effects, when exhibited singly, very distinct from those following their exhibition in combination.

Taking the experience of practical physicians with Dr. Harley's results, as a basis, we would group them in the following order:

First Group.
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1. Morphia.
2. Narceia.
3. Codeia.

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1. Thebain.
2. Cryptopin.
3. Papaverin.

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The relative values of each being known, we can select and utilize those that are valuable, and reject those known to be deleterious and inert.

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We may safely affirm that the danger of bad results is much diminished by a resort to that preparation of Opium, in which the poisonous elements are eliminated, and the anodyne elements in such a state of combination, as to reduce their toxic, and enhance their hygienic effects, such as has been proved to be the case with SVAPNIA.

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