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INDICATIONS FOR ELECTROLYSIS IN ANGEIOMA AND GOITRE.*

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IT is a subject for much congratulation that electrolysis, so long misused, abused, and neglected, is, thanks to our improved apparatus and increased knowledge of fundamental principles, now allowed by the foremost surgeons of the day a place on the list of measures to be relied upon in certain conditions. And it is greatly to the credit of the surgeon of the day that he is dealing with the whole subject of electro-therapy in a broad-minded, intelligent spirit. Four Toronto hospitals have now recognized departments of electro-therapy, and it is a matter of much encouragement to me that my best friends in the city of my adoption are the leaders in our noble profession.

There are many conditions in which electrolysis is often most clearly indicated, and possesses many advantages over other surgical interference, but I shall refer to merely two.

First, to angeioma. Here the disfigurement is frequently the chief reason for consultation and incentive to operation, particularly when situated, as it so frequently is, on the face. In this location the probabilities of resultant scarring are much less than when other means are resorted to. Excision of the involved tissue is indeed, in many cases, quite useless, and the same applies to the cautery, scarification, and external applications, while the employment of injections is not free from danger.

It is not the purport of this paper to consider the etiology, the varieties, nor yet the pathology of angeioma. Suffice it to say that electrolysis is applicable in the majority of cases. While it is true that cure may take place spontaneously, and interference is often deferred on that account, it is likewise true that the angeiomatous condition may spread greatly, and if operated upon early the result will probably be more successful, and the scar, if any, pale away as the child grows up. When small and superficial, and the capillary vessels chiefly at fault, a single negative needle and

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mild currents may suffice to produce coagulation and blocking of the lumen of vessels; but when the vessels are much enlarged, it may be necessary to employ the positive to produce the characteristic contraction and resultant atrophy. The indifferent electrode in these cases may preferably be a large pad at the shoulders.

In cases of the cavernous variety of large size, electrolysis may be carried to the extent of direct destruction of tissue, both poles being in the tumor.

The treatment is one which I very frequently employ, but I select one case from my notebook which illustrates the difference between proper and unsuitable technique:

On June 16, 1893, at the request of Dr. J. A. Temple, acting on the suggestion of Dr. Grasett, I treated a child, one year old, who had been subjected to six previous electrical operations with little appreciable benefit. The left ear was fully one-third larger than the right, and projecting. At the back of the lobe was situated an ugly pendulous mass, while in front were three raised "strawberry marks," and a plentiful supply of very noticeably dilated capillaries. Chloroform having been administered, on careful examination I detected a spot on the back of the ear where, by pressure, I could lessen the circulation through the blemishes in front. In this I inserted a gold needle connected with the negative pole of the battery, while in the centre of the pendulous mass I inserted a similar electrode connected with the positive pole. Fifty milliamperes was used for seven minutes, and seventy-five milliamperes for eight minutes.

That the negative needle had transfixed the supply vessel as intended was quite apparent, for the bubbles of hydrogen gas could be readily seen meandering through the dilated vessels in front and along the "strawberry spots." On turning off the current, the needles were carefully withdrawn, and oozing controlled by pressure with iodoform dusted pads. The sites of punctures were then coated with iodoform collodion, which was renewed subsequently as often as necessary.

The effect in this case was steady and progressive; the spots gradually paled; the pendulous mass atrophied; the hypertrophy of the ear became less apparent, and the ear less projecting. No other interference was necessary, and to-day, the other ear having developed with age, there is little difference in appearance between them, certainly not sufficient to constitute a deformity.

Only one other condition will I allude to, namely, goitre. My researches, carried on for the past five years at the Toronto hospitals, and in my private practice in the treatment of the various forms of goitre by means of electricity, have attracted much attention, and have been most favorably received by my confrères in that city. I may remark, in passing, that during this time I have treated over one hundred cases of the different forms of this disease, but confine my remarks to cystic goitre, as my methods of treating it differs from the usual technique.

The fluid is aspirated and replaced by a good electrolyte, that is, an easily decomposable conductor of electricity, various chemical solutions being used according to the indications. The aspirating needle together with the aforesaid electrolyte form an electrode conveying the current to the entire inner surface of the cavity, and through its walls also. The partially decomposed solution is removed on completion of the operation, and firm pressure kept up, with drainage if necessary. I aim to cause collapse and excite adhesive inflammation of the cyst wall, with atrophy, and in some cases secondary degeneration of the hypertrophied tissue. In this hope expectations are realized in the majority of cases, with very few exceptions; but old, very firm fibrous tissue may resist, as it is almost impossible to excite any reaction whatever in it.

A recent post-mortem on a case I had previously treated revealed the site of the former cyst a mass of cicatricial tissue, while the lobe had undergone calcareous degeneration.

As to instruments. The lumen of my cannula permits the easy passage into cavities of No. 3 drainage tubing when required. The tube of the cannula is constructed of platinum, that it may be used with the positive pole if necessary, and the addition of a second stop-cock renders it independent of the reservoir when introducing it; otherwise, this part of the apparatus is the usual Potain aspirator attachment. The use of chemical solutions corrodes metal parts; therefore for the injections I employ a second bottle with tubes of glass leading to and from it. A third tube has also been introduced to facilitate the introduction of the solution. By another arrangement the sac may be evacuated without polluting this reservoir.

Shall the general practitioner employ electrolysis? Yes, if he possess the necessary apparatus; knows how to take care of it; is endowed with the ability to use it skilfully; has a minute acquaintance with its fundamental laws, and can properly estimate the wonderful power of this alluring agent. Otherwise, a thousand times, No.

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