Current Practice

DISEASES OF THE SKIN

Management of Warts

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The best way of managing warts is to let them manage themselves. Warts have a natural life span, which varies from person to person and from one kind of wart to another. The limitation of this policy is when the duration of the wart exceeds the patience of the victim or his parents. The outstanding advantage of waiting for natural resolution is that the warts disappear without trace, whereas attempts at interference can be followed by scars. No treatment of warts that produces permanent scarring can be considered satisfactory. There is an excellent study of the natural history of warts by Massing and Epstein.[1]

It follows that any treatment that lasts a considerable time will be bound to "succeed" in a proportion of cases, a fact which makes comparison of the results of various treatments rather difficult to assess. Many of the simple treatments, such as taking lime water or applying lemon juice, probably depend on natural cure, but these methods are not to be despised on that account, since they occupy the patient in a harmless fashion during the time that is required for natural resolution to take place. Many doctors feel that it is dishonest to prescribe a medicament that they believe to be inert, as though they were resorting to magic, without reflecting how many of the treatments for other diseases in which they have faith could be classed rationally as placebos. One way out of their dilemma is to give some "powerful" drug—for example, injections of liver extract—in the belief that they are doing something. Indeed, this is much better treatment than to apply fuming nitric acid with more zeal than discretion and to scar the patient for life or even to deprive his terminal phalanx of its extensor tendon. In general, such a measure of blind destruction is undesirable, and, if destruction is needed, it is much better to use more readily controllable methods such as the electrocautery, carbon dioxide snow, or the curette, all of which if used with skill and restraint can be expected to give a good cosmetic result. They are all superior to excision, which leaves a scar that may be painful and also transgresses the zone of local resistance that is probably developed to the spread of the wart. Recurrence in the scar of an excision is very common.

Charming of Warts

The charming of warts is a practice dating from antiquity and hallowed by tradition. Sir Francis Bacon writes of the cure of his own warts[2]:

"I had from childhood a wart on one of my fingers; afterwards, when I was about sixteen years old, being then in Paris, there grew upon both my hands a number of warts—at least a hundred, in a month's space. The English Ambassador's lady, who was a woman far from superstition, told me one day she would help me away with my warts; whereupon she got a piece of lard with the skin on, and rubbed the warts all over with the fat side; and, amongst the rest, that wart which I had had from childhood; then she nailed the piece of lard, with the fat towards the sun, upon a post of her chamber window, which was towards the south. The success was, that within five weeks' space all the warts went quite away; and that wart which I had so long endured for company. But at the rest I did little marvel, because they came in a short time and might go away in a short time again; but the going away of that which had stayed so long doth yet stick with me. They say the like is done by the rubbing of warts with a green alder stick, and then burying the stick to rot in the muck."

The modern fashion is to dismiss charming as an example of spontaneous cure: certainly the mode of disappearance of the warts is similar, but Bloch[3] showed that some people achieve better results than others, which suggests that the operator has an influence. It is possible that charming works by accelerating spontaneous cure. The subject was well reviewed by Rolleston.[4] Two recent controlled experiments to investigate the efficacy of charming[5,6] have failed to show any better result than could be expected from spontaneous disappearance, but it is arguable that these investigators have really demonstrated their own inability to make charming work. Bloch stressed that emotion entered into successful charming, and this element is inhibited by the rigours of a controlled experiment.

Hypnosis

In contrast to the uncertainties that surround the question of charming it has been shown very neatly by Sinclair-Gieben and Chalmers[7] that warts can be persuaded to disappear under the influence of hypnosis. But hypnotism is not to every taste and it is time-consuming, so that it is unlikely to become a generally used method, though it has an application in special cases where there is some particular fear of, or hazard associated with, an anaesthetic or operation.

Vaccines have been prepared from warts, notably by Biberstein,[8] and have been used in men and cattle. Biberstein was enthusiastic, but his enthusiasm has not always been shared by others who have tried the method. It was held that because the vaccine worked in cattle the effect of charming could be ruled out. The cattle, however, responded not only to the wart vaccine but also to the diluent of the vaccine and to extracts of normal skin. Although the results may not have been convincing, it might be worth while to review the possibilities of this method.

The detailed treatment of warts will now be considered on a regional basis.

Hands

The usual problem is a crop of common warts scattered over a child's fingers. In view of the tendency of warts to disappear naturally it is unwise to resort to destructive treatment in the first instance. There is seldom any real urgency, apart from parental pressure, because though adults may be embarrassed by a profuse crop of warts children seldom mind being warty. It is true that warts may be due to an infectious agent (it is not absolutely certain that all types of wart are due to a virus) and

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there is an argument for getting rid of the warts as soon as possible to diminish the reservoir of infection. But warts are so common that the size of the reservoir is colossal ; it exceeds the destructive capacity of all the dermatologists in the kingdom, who would spend their whole lives doing nothing else except treating warts if they were to give themselves overconscientiously to this Herculean task.

If treatment is to be given the cardinal principle is that it shall not be harmful. The commonest harm to result from injudicious treatment is scarring. One must remember that the patient's skin is not the only part of him that may be scarred, and that some children are taught to fear doctors by being subjected to painful treatment for warts. Many patients and doctors find that to do nothing in face of a crop of warts that is waxing is more than their patience can stand. In this case the best initial treatment is to apply some harmless substance to the warts. Popular remedies are clear nail varnish, lemon juice, dandelion juice, the early morning saliva, and Castellani's paint. Oral treatment with lime water or lactose tablets can supplement or take the place of local treatment. There are innumerable variations upon this theme, which depend upon the placatory ingenuity of the prescriber.

There will come a time when the cases that fail to get better will need " something else done." Indeed, many " doers " will not have deigned to lend themselves to the gentle art of placation in the first instance, and they will begin at the next stage, which is to apply some reputedly active but relatively harmless form of discouragement. While adults will be prepared to tolerate a considerable amount of pain to lose their warts, children will not. It is not only that children react more overtly to pain, but there is also the question of motivation. The warty child is usually brought to the doctor under duress. He does not care whether the warts go or not ; he is there because his parents say so, or the school doctor or general practitioner says so. Compare this situation with the motives of the " hardy young wench " described by Daniel Turner,[9] who was " much pestered with warts." Her sweetheart had objected to the warts " as a sign of sluttishness " and she was determined to get rid of them. So the warts were treated with burning brimstone by a barber, who charged her half a crown. " The courageous girl, being exceeding desirous of their removal, bore the pain beyond expectation, suffering the brimstone to burn all out, and would have had the barber to have laid on more if he thought there was occasion." She escaped with her life but was left having " one perfectly stiff joint, with another but little useful." Such a display of courage in a warty child would be unusual.

Of the reputedly active and less painful means of treatment salicyclic acid in collodion, and podophyllin—an irritant substance that can provoke considerable inflammation at the site of application—are examples. (Podophyllin is available in the proprietary Posalfilin ointment.) Both of these applications should be used in small quantity and confined as far as possible to the wart itself. Maceration of the warts by covering them with elastoplast is a helpful adjunct.

Much better control is possible by physical methods of treatment such as freezing, burning, and curetting. Irradiation with *x* rays is less popular than it used to be, and in my opinion should be confined to the use of " dummy treatment "—that is, by placing the wart under the machine but not turning on the current. Used in this way *x* rays are a form of charming. A consultant dermatologist of my acquaintance was rather mortified to discover that he had been successfully treated in this way in his youth, except that he had been given the added advantage of lactose tablets to swallow.

Carbon Dioxide Snow

Freezing is usually done by means of a stick of carbon dioxide snow. In making a stick it is important to compress the snow thoroughly, so that the stick will withstand the pressure of the application. The warts to be frozen should be plump and soft, having been hydrated either by soaking in warm water, or by maceration with elastoplast. The dosage is controlled not by any arbitary time, but by watching for the appearance of a ring of frozen skin around the wart. This test applies only if the stick of snow has been slightly smaller than the wart, and if it has been applied accurately without overlap on to the surrounding skin. The secret is to make a stick of snow that is just the right size. There is no difficulty in reducing the size of large sticks, by moulding them on metal objects such as water-taps ; but there is sometimes a problem in making large sticks if the source of snow is the usual portable Sparklet apparatus, when it will be necessary to transfer the uncompressed snow to a larger mould, but to obtain enough may require the contents of several Sparklet cylinders. A more satisfactory method is to use a cylinder of anaesthetic carbon dioxide and to tie over the nozzle a chamois leather bag in which the snow can collect. Snow is then fed from the bag into an appropriate mould. Whatever source of carbon dioxide is used the cylinder should be nozzle downwards during the collection for a good yield. The snow is applied to the wart with considerable pressure, to assist penetration of the freezing, and care must be taken to see that the stick of snow does not " creep " off the wart, as it will do unless special care is taken. Unnecessary freezing of the skin surrounding the wart does not contribute to a successful result, but merely increases the size and extent of the ensuing blister. The patient should be warned that the treated area will feel as though it had been burnt for a day or so, and that it will blister. The blisters should be kept dry and intact, unless they become unusually large, in which case they can be aspirated with a hypodermic needle. In 10 to 14 days they should have dried up, and in a further 10 days the desiccated remains of the warts should have separated, sometimes leaving some obviously living warty tissue, which will require further freezing. A modification in the use of carbon dioxide snow that makes it easier to apply to irregularly shaped areas and also lowers its temperature is to moisten the stick with acetone, or to mix snow and acetone to make a slush. This material cannot be applied under pressure, but must be smeared or painted on, and care must be taken to prevent it running over the healthy skin. The cosmetic result with carbon dioxide is good, and scarring is only likely to result from gross overtreatment and the secondary infection which it encourages.

Liquid Nitrogen

It is much more easy to do harm with the more powerful alternative, liquid nitrogen, since its temperature is much lower, it is fluid, and freezing occurs within a second or two, compared with the one to five minutes needed with carbon dioxide snow. Speed is an advantage in dealing with numerous very warty patients, but the very facility of freezing which liquid nitrogen offers is a danger unless it is matched by greater skill and care on the part of the operator. Liquid nitrogen is stored in a vacuum flask or special container, which must be kept open to the air to prevent the container bursting with the pressure set up by the continually boiling liquid. It evaporates so quickly that it is only practicable to have a supply available for some special occasion, and its economical use assumes the existence of a wart clinic. A cotton-wool-tipped stick is dipped into the liquid and then applied to the wart. Freezing is immediate, and it is essential that the size of the applicator is such that though the wart is properly frozen the surrounding skin escapes. An applicator bearing too generous a supply of cotton-wool will release a dribble of liquid nitrogen when the wart is pressed upon, and can result in serious and unnecessary damage to normal skin. Here again the end-point is a ring of freezing in the surrounding skin. Injudicious application of the liquid nitrogen will result in enormous blisters, which are very troublesome. It is all too easy to freeze the surrounding skin as heavily as the wart, with the result that the wart rises anew in the floor of the blister.

Liquid oxygen is an alternative freezing agent that suffers from the serious disadvantage of having a fire risk and it is not recommended.

Electrocautery

The electrocautery (but not the diathermy) is a very fine instrument for treating warts, provided that proper anaesthesia has been obtained. If large crops of warts must be dealt with at one sitting the patient will require a general anaesthetic, but it is usual to treat the warts bit by bit, using a local agent such as 1% lignocaine hydrochloride. Not more than 5 ml. of this solution should be injected in a child, and not more than 10 ml. in an adult. The pain of the needle should be dulled by using an ethyl chloride spray. A history of allergic reactions to local anaesthetics should be inquired for, and if there is any doubt on the matter an anaesthetist should be consulted. (It is an alarming experience to be alone with a patient who has collapsed after the injection of 1–2 ml. of local anaesthetic which you have just administered for treating his warts.) Multiple injections can be avoided by working from the initial injection site with a long needle (but never inserting it to the hilt) and infiltrating the area progressively, or, on the finger, by using a ring block.

If general anaesthesia is contemplated it is prudent to arrange this some weeks ahead, since the warts sometimes take fright at the thought and disappear. Since there is a chance of death, albeit very remote, from a general anaesthetic, I reserve it for adults with large crops of warts that interfere with their work and that have resisted other forms of treatment, or for children with large warts near their eyes. The anaesthetic gas must be non-inflammable. The electrocautery should be chosen to suit the type of wart, fine and pointed for small warts, broad and flat for large ones. The principle is to iron the surface of the wart with the point just brighter than dull red, which produces steam and lifts the wart off the underlying tissues. The end-point is when the charred wart is lying free as the roof of a blister; it can be removed cleanly by wiping with gauze, or by snipping around the edges of the blister with scissors. The centre of the area revealed is usually occupied by a little mound of whitish wart tissue, which needs touching *very gently* with the cautery point, sufficient to flatten it. Apart from this the temptation to use the cautery on the base of the blister should be firmly resisted, since to do so is to encourage scarring. For the same reason it is desirable that secondary infection of the raw area should be prevented, and this is achieved by washing the area thoroughly with cetavlon solution before the operation and by dressing the treated areas with sofra-tulle. The good cosmetic result that can be produced with the electrocautery is much harder to imitate with the diathermy. This instrument uses the tissues as a conductor of electricity and they are damaged in the process in proportion to their distance from the needle point. A skilled operator can allow for this effect, but a casual operator will find the electrocautery an easier instrument to handle, since the tissue damage it produces is virtually confined to the visible changes at the cautery point. The chief objection to both instruments is the smell of burning skin.

Curettage

The remaining useful treatment for warts is to remove them with a curette. The instrument is introduced at the junction between the wart and the healthy skin, and it is then used to exploit the separation beneath and round the edge of the wart. Fragments of the wart tend to adhere round the edges, and these, together with the ragged skin, should be trimmed with scissors, and the curette used on the edges again to make sure that all the warty tissue has been removed. Bleeding is free and can be controlled by patience and pressure, by light use of the electrocautery, or by a silver-nitrate stick. Curettage is the treatment of choice for the plantar wart type of lesion (myrmecia) that sometimes occurs on the hands, particularly beside or beneath the nails.

A combination of the electrocautery and thorough curettage of the burnt tissue, using a small curette, is the best way of dealing with that extremely difficult infection called mosaic warts.

Feet

The commonest warts to occur on the feet are the soft, dome-shaped, and painful lesions called myrmecia.[10] These can be treated very satisfactorily by curettage, but it is usual to give conservative measures a trial first. Salicylic acid plaster (40%) is applied accurately to the surface of the warts, and it is held in position with three turns of Elastoplast, which should be of sufficient width to provide a firm and comfortable dressing that will withstand a week's hard wear unruffled and unmoved. Every week the same treatment is repeated, after having pared away the soft keratin of the wart without producing bleeding. Most warts disappear within six weeks; the resistant ones can be treated by curettage if more active treatment seems indicated. A useful modification of this treatment is to work trichloracetic acid into the wart with a pointed stick before applying the salicylic acid plaster, but it is important to avoid burning the patient with any excess of this acid, and care should be taken to wipe the area dry after its application. Podophyllin resin is an alternative application; it tends to produce pain eventually. Phenol has been used for the same purpose, but it cannot be recommended for use under an occlusive dressing for fear of gangrene. Tinea pedis is a contraindication to this line of treatment, since the infection is aggravated by the heat and moisture that are produced by the occlusion. If there are many plantar warts the application of plaster to each would be tedious, and one part of formaldehyde solution (40%) to nine parts of water can be used for soaking the warts. The solution is poured into a shallow dish and the patient sits with the warts immersed for 10 minutes, measured by the clock, every night. Resting of the sole on the bottom of the dish prevents wetting of the warts; conversely care must be taken not to submerge the whole foot, since formalin will irritate the tender skin on the dorsum. Formalin hardens the warts, and it is necessary to pare them down regularly.

Curettage is the best treatment for myrmecia. The principle of treatment is the same as for common warts, but the operator must take into account the way that the myrmecia is submerged in the skin and the fact that there is a far bigger wart present than shows on the surface. It may be rather difficult to introduce the curette, and when it does enter it tends to go in a long way suddenly. When the wart has been freed it pops up looking very much like a tooth; it feels quite soft. It leaves behind a deep hole in which bleeding is profuse. The bleeding can be temporarily controlled by pressure, while the ragged edges of the hole are trimmed with scissors, and the walls and cavity are curetted again to make sure that all warty tissue has been removed. The bleeding can be finally controlled by light application of the electrocautery. A modification of this method, in which the horny collar around the wart is first snipped away with scissors, makes it easier to introduce the curette, demonstrates the true size of the wart, and makes a false passage of the curette into the surrounding tissues less likely. The after-care is the same as for common warts. Healing of the raw area take two to three weeks, and is accelerated by rest.

The way in which the myrmecia can be induced to pop out of the skin was mentioned by Daniel Turner[9]: "Galen mentions a dextrous fellow in his time, who went about the city of Rome; and by the mere suction of his lips, when he had brought the myrmecia sufficiently to protruberate and loosened it hereby from the bottom, would suddenly divide them, and snap them off with his fore-teeth." I had always regarded this story as worthy of Baron Munchausen until I came across a note in *The Countryman*[11] entitled "Bottled Corns."

Some years ago in Dorset, when I asked after a farmworker's health he replied: " I be some rough: me carns be spitey. An' that reminds me, thur wur a man upalong an' that man wur a wonder. If you'd a carn 'e'd come an' 'e'd go down on his knees an' lay holt o' that thur carn wi' 'is teeth an' never let go till 'e'd drawed un. That man 'ad a bottle full o' carns 'e'd drawed, an' that's as true as youm standin' thur."

Mosaic warts present special problems. They are multiple, small, superficial, desiccated, angular in outline, painless and tend to aggregate themselves into plaques. They could always be left alone if they showed the same tendency towards spontaneous resolution as other warts, but unfortunately they usually persist and can multiply exceedingly. They recur readily after treatment, but they may be tired out eventually by persistent attacks with any of the destructive methods already described. It depends on whose patience flags first. The patient is apt to suffer more discomfort while the warts are being treated than when they are left alone, and the treatment is apt to be prolonged. The doctor is often justified in advising that they should be ignored. If a real attempt is to be made to eradicate them it is best to combine the electrocautery with the use of a curette that is small enough to winkle out the individual lesions, not one of which must be left. The extent of the infection usually requires that the patient should be given a general anaesthetic.

A patient with any type of plantar wart should not be allowed to walk barefoot in public places such as swimming baths, gymnasia, beaches, or hotel bedrooms. He should protect the rest of the family by using his own bathmat, and he should refrain from lending his shoes to other people.

Face

Plane warts of the face and hands occur particularly in children. They have a strong tendency to disappear spontaneously and should be treated by non-destructive means. A stick of highly compressed carbon dioxide snow very slightly moistened with acetone and rubbed over the skin lightly will freeze the warts selectively but it is doubtful whether this is more than a form of charming.

Children sometimes develop unsightly warts of the lips and eyelids, and if these cannot be persuaded away peacefully electrocautery should be used with a general anaesthetic.

Men develop very troublesome wart infections in the beard region. These make shaving difficult, and they are perpetuated by shaving. It is a waste of time to temporize in these cases and one should proceed straightaway to use the electrocautery, with local anaesthesia if necessary. The patient should be reviewed monthly, and all fresh lesions should be treated until he has been clear on three consecutive occasions.

Scalp

Warts of the scalp are soft and digitate. They are easily removed by the electrocautery, care being taken not to set the hair on fire. Linear warty lesions of the scalp are usually naevi which ought to be either left alone or excised.

Anogenital Region

Genital and perianal warts have a delicate, finger-like structure. As they are not heavily keratinized, they are particularly susceptible to chemical agents. Podophyllin resin 25% in spirit is painted accurately on to the warts with a pointed glass rod, and allowed to dry. Six hours later the patient washes thoroughly with soap and water and applies 2½% hydrocortisone ointment to relieve any irritation set up by the podophyllin. The paintings are repeated at weekly intervals. A conservative treatment that can be used before resorting to podophyllin is to dust the area with equal parts of calomel and talcum powders twice daily. Vulval warts can grow so luxuriantly as to conceal the introitus. This is one occasion when the diathermy, with its big capacity for work, can be used to advantage, the electrocautery being rather too feeble an instrument to deal with the large mass of tissue that has to be removed. Genital warts are not in themselves, as used to be thought, a sign of venereal disease (pointed warts must be distinguished from the flat syphilitic condylomata), but they can be transmitted by sexual intercourse, and their presence should cause the doctor to reflect whether the partner has genital warts, and whether there is the possibility of venereal disease being present.

Other Sites

Warts of other sites are rare and their occurrence should make one consider whether there could be an alternative diagnosis, such as a linear warty naevus or molluscum contagiosum. Seborrhoeic warts are common lesions on the trunk, the older ones being quite pigmented, but they are regarded as different from other warts. They respond well to destructive methods of treatment. Not all pigmented warty lesions are seborrhoeic warts, and I have seen a malignant melanoma treated for weeks as a wart before its true nature was realized. Inoculation of tuberculosis can produce a warty lesion, usually on a digit, but the " wart " is surrounded by inflammation.

Summary

With the exception of mosaic warts there is a strong probability that time will bring spontaneous resolution. Nature's cure is very acceptable because no trace of the wart is left, which is more than can be said for man's injudicious interference. Placebos help to pass the time while awaiting natural cure. Charming may be no more than a placebo, but it is possible that it accelerates the healing process. If destructive treatment must be used the electrocautery, carbon dioxide snow, and the curette are advised. The diathermy, the knife, and the *x*-ray machine are not recommended, except in the special circumstances stated. Not all warty lesions are warts, and of these it is most undesirable to miss a malignant melanoma.

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