ELICITATION AND INTERPRETATION OF TACTILE ANAESTHESIA.

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It is a common belief that the elicitation and interpretation of tactile anaesthesia in leprosy requires no special skill and experience. This is a delusion which has caused frequent errors in diagnosis. During the last twelve months I have seen the following 3 cases:—

I. Male, Englishman, aged 39, who returned from the tropics after residence for some years as a welfare worker in a leprosy institution. He had marked anaesthesia of both arms and legs, and acid-fast rods were found in the nasal mucous membrane. He was diagnosed as suffering from leprosy by (a) a doctor in this country with fair experience of the disease; (b) a professor of tropical medicine; and (c) a well known neurologist. On examination I found that the acid-fast rods in the nasal mucous

membrane were not lepra bacilli, and that the anaesthesia was due to hysteria. In this case the deep nature of the anaesthesia, compared with the marked lack of any muscle wastage, and the absence of any skin lesion or nerve thickening, made the diagnosis of leprosy improbable. Further examination elicited the classical symptoms of hysteria.

2. White colonial subject, aged 30. Had been diagnosed as a case of leprosy for the last six years and had lived a life of incarceration and misery during that time. Examination showed areas of anaesthesia over the outer sides of both lower legs. The patient gave a history of being brought up on a cattle ranch, where he had been subject to constant trauma from the hooves of cattle or falls from horseback. There was no wasting of muscle, no nerve thickening and no skin lesion. Diagnosis traumatic anaesthesia.

3. European, male, aged 27, with a history of a short residence in the tropics. On examination I found he had widespread macular lesions over the trunk and arms, showing typical anaesthesia to light touch. I confirmed the diagnosis of leprosy. He had been seen by more than six doctors, all of whom, after testing with pins and needles, had stated that there was no anaesthesia. Had the disease not been discovered in time the patient would almost inevitably have drifted into a dangerous lepromatous state. The mistake here lay in the patient's medical advisers being unaware of the correct method of eliciting anaesthesia.

In different leprosy institutions one sees occasionally the most extraordinary methods of testing for anaesthesia. These include the use of a folded piece of stiff paper, pins, needles, and, in some cases, the use of a large feather attached to the end of a walking stick, presumably in order to prevent any possibility of contact. The elicitation of anaesthesia in a well marked tuberculoid case of some duration is relatively easy. The difficult cases are (1) the early anaesthetic lesion where pathological findings are indeterminate, and (b) the early tuberculoid lesion where gross anaesthesia has not yet become stabilised.

The only instrument that is of any real value in the elicitation of tactile anaesthesia is a very fine point of cotton wool. There are, however, several points which must be remembered. The first is a need for inviting the patient to co-operate, combined with a complete explanation to the patient of what is happening. In some languages the word for "feeling" is not clearly differentiated from the word for "pain," and it is therefore necessary to explain exactly to the patient what is expected of him. A large number of patients will almost inevitably give the "wrong" answers to begin with; this for various reasons including ignorance, stupidity, and the desire to say what will apparently please the doctor.

The effort of concentration required by the patient may be quite rapidly fatiguing, and there should be careful intervals allowing for a short mental rest between each test. Apart from exceptional cases the patient should not be blindfolded, and in no case is there any excuse for the attendant putting his thumbs over the patient's eyes. In most cases there is no reason why the patient should not watch the procedure, at any rate during the first part of the examination. He is just as interested in it as you are. Blindfolding and eye blocking can only add to the patient's sense of apprehension and therefore to the margin of error in the elicitation of anaesthesia.

Any emotion, such as fear, can effectively inhibit the normal sense of touch, and the accuracy of the patient's response. It should be remembered that the actual definite diagnosis of leprosy often brings a sense of relief to a patient, who for days and weeks may have been harrassed by tormenting doubts or fears. During this stage a patient may be quite incapable of giving a rational, coherent response to any test for anaesthesia unless he is treated with the utmost consideration and understanding. Physical tiredness may affect the response to light touch. A patient who has come to the clinic from a distance, carrying a fairly heavy load, may be incapable of recognising light touch until he has had a rest.

Variations in touch response in normal skin. To elicit this the writer suggests making the following simple tests:—

Take a fine wisp of cotton wool and, after eliciting normal touch response on the back of the hand, then test the back of the knuckles of the same hand. It will be found that there is no response to light touch, and that this area is normally anaesthetic. Examination of the whole body in normal subjects shows that the skin on the outer aspects of the joints in general has a varying, but dulled delayed response to light touch. This is a most important, but little known observation, ignorance of which has led in a number of cases to a wrong diagnosis.

The hair on the skin may be sensitive to light touch where the underlying skin is anaesthetic. In every case, therefore, it is necessary to shave both the suspected area and the control area before examination for anaesthesia. The act of shaving itself may cause a temporary numbness, so that the patient should be left for at least ten minutes after the shaving has been completed.

If a patient has been sitting with one knee over the other for

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some time, the lower part of the leg which has been superimposed on the other will be found completely anaesthetic to light touch. Similarly, in patients who have been squatting cross-legged for some time, there may be partial anaesthesia in both lower limbs.

In testing for anaesthesia of the forearm the limb should not be rested on a desk, or kept in any position where there may be pressure on the ulnar nerve, or compression of the limb. The patient should not be allowed to sit in a draught during examination, as this may inhibit a normal response.

Perhaps the most difficult place for the elicitation of anaesthesia is on the face. Here it must be remembered that the skin is extremely sensitive indeed, and anaesthesia may only be discovered by the mere touch, not stroke, of a single hair of cotton wool.

Trauma, particularly round the ankles and feet, is a common cause of anaesthesia, and is not infrequently mistaken for leprosy. It should be kept in mind that almost everyone has, from childhood, suffered repeated trauma in this area, and that no diagnosis of leprosy should be made without confirmatory signs and symptoms.

I am indebted to Dr. J. Barnes, of the Ogoja Leprosy Settlement, Nigeria, for a detailed study of relative insensitivity over joints in ten Africans. He reports as follows:—

Stir	nulus	Elbow tip	Middle knuckle of fingers	Knees	Remarks
Light	touch	0	0	+	
Pin 1	prick	+	+	÷	
1					Tendo-achilles
Light	touch	O-	0	+	0
Pin r	rick	Ō	Ō	+	Ő
1 1		•	0		Tendo-achilles
Light	touch	0	0	0	O O
Pin r	rick	+	÷.	Ť.	
	JICK .	0	1		1
Light	touch	- O	Ŏ	+	
Pin I	orick	+	+	+	
Light	touch	0	Ο	+	
5 Pin p	orick	+	+	+	
- Light	touch	0	0	0	
Pin r	rick	ŏ	ŏ	ŏ	
1	JICK	0	0	0	
Light	touch	0	0	Ŏ	
2 Pin I	prick	0	+	+	
					Dorsum of feet
cent Light	touch	+	+	+	O
Pin J	prick	+	+	+	,, +
Light	touch	0	0	+	
3 Pin 1	orick	Ť.	+	÷	
		Å	, ,		
cent Light	touch	- O	O I	- ÷.	Full sensation in
Pin J	рпск	+	+	+	tinea patches.
	Light Pin 1 Light Pin 1 Light Pin 1 Light Pin 1 Light 2 Pin 1 Light 2 Pin 1 Light 2 Pin 1 Light 3 Pin 1 Light 2 Pin 1 Light Pin 1 Light Pi	Stimulus Light touch Pin prick Light touch Pin prick	StimulusElbow tipLight touch Pin prickO Pin prickO Pin prickLight touch Pin prickO Pin prickO Pin prick2Pin prickO Pin prickLight touch Pin prickO Pin prickO Pin prickcent Light touch Pin prickO Pin prickH H Pin prickLight touch Pin prickO Pin prickO Pin prick2Pin prickH Pin prickLight touch Pin prickO Pin prickO Pin prick2Pin prickH Pin prickLight touch Pin prickO Pin prickO Pin prick	StimulusElbow tipMiddle knuckle of fingersLight touchOOPin prick++Light touchOOPin prickOOLight touchOOPin prick++Light touchOOPin prick++Light touchOOPin prick++Light touchOOPin prick++Light touchOO5Pin prick+Light touchOO2Pin prickO2Pin prick+tight touchOO3Pin prick+Light touchOO3Pin prick+Light touchOO3Pin prick+++Light touchOO3Pin prick+++Light touchOOPin prick++++Light touchOOPin prick++Light touchOOPin prick++Light touchOOPin prick++Light touchOOPin prick++Light touchOOPin prick++Light++Light++ <td>StimulusElbow tipMiddle knuckle of fingersKneesLight touch Pin prickOO+Light touch Pin prickOOO2Pin prick++Light touch Pin prickOO2Pin prick++Light touch Pin prickOO3Pin prick++Light touch Pin prickOO4++Light touch Pin prickO++++Light touch Pin prickO+++Hin prick++++Hin prick++++++++++++++++++++++++++++++</td>	StimulusElbow tipMiddle knuckle of fingersKneesLight touch Pin prickOO+Light touch Pin prickOOO2Pin prick++Light touch Pin prickOO2Pin prick++Light touch Pin prickOO3Pin prick++Light touch Pin prickOO4++Light touch Pin prickO++++Light touch Pin prickO+++Hin prick++++Hin prick++++++++++++++++++++++++++++++

	Insensitive	skin areas	in the	normal	African.
(+ =	= Stimulus appre	eciated.	O =	Stimulu	s not appreciated.)

The whole skin area of ten normal Africans was studied, and the appreciation of pin prick and light touch noted. All parts of the body appeared to be sensitive except where the skin was stretched or thickened on elbows, knees, middle knuckle of fingers and soles. Most, but not necessarily all, of these sites were insensitive to light touch in the cases examined.

SUMMARY

1. The most-effective test for anaesthesia in leprosy is by the use of a fine point of cotton wool.

2. The areas of the outer aspects of the joints (ankles, etc.) normally show a relative anaesthesia in a healthy person.

3. Hair is not insensitive to light touch where underlying skin is anaesthetic in a case of leprosy.

4. The skin of the human face is extremely sensitive to light touch and anaesthesia should be elicited with a single hair of cotton wool.

5. In cases of doubt diagnosis of leprosy should not be made where there is (a) no skin lesion; (b) no thickened nerve, and (c) no muscle wasting.