TEST TO DISTINGUISH FUNCTIONAL FROM ORGANIC LIMITATION OF MOVEMENT IN SPINE OR HIP

BY

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When the only positive physical sign which a patient presents is a limitation of voluntary movement in the spine, or active or passive movement at the hip, all other details of physical and radiological examination being negative, it is often difficult to decide whether the limitation of movement is due to early bone or joint disease, or purely or partly to hysteria or malingering. Even when there are strong grounds for suspecting hysteria, it is often difficult to decide whether the symptoms are purely functional or whether psychological overlay exaggerates a real disability. Positive evidence of hysteria is extremely difficult to obtain, except in glaring examples of psychological disorder in patients of rather low mentality. The opinion of a psychiatrist is, of course, always obtained, but, particularly in cases of great complexity, the psychiatrist usually places the onus for excluding underlying disease upon the surgeon or physician.

Most textbooks which deal with joint disorders advise simply that the patient's movements should be closely inspected at times when he or she is not aware of being observed, but it is extremely rare for a hysterical patient or an intelligent malingerer to be caught off guard, even during prolonged observation. Even if so caught, the hysterical patient will not usually believe that full movement has taken place, and the malingerer will not usually admit it. It is sometimes advised that one should drop some object accidentally in the hope that the patient will bend down to pick it up, but I have never found this trick to work.

The technique described below is not commonly taught, and I have not yet seen it employed either by a surgeon or by a psychiatrist. I have not found a description of it in the textbooks available to me. The test has so frequently been of great assistance in diagnosis, and, when positive, so dramatic, that I hope it merits description. Any physical sign which establishes a positive diagnosis of "hysterical joint" would seem to be useful.

Spinal-flexion Test

The movements of the spine are first examined in the usual routine fashion with the patient standing. The picture of the opisthotonic spine of the hysterical patient apparently straining to touch his toes from the erect position will be familiar to many (Fig. 1). The patient is then invited to lie down on the examination couch. He first lies prone and the spine is palpated. He then turns on his back, and the abdomen can be palpated too. He is then invited to sit up while a show is made of palpating his spine from behind. He is then asked to stretch out his arms as far as he can. A rapid sketch is then made of him in this position (Fig. 2). He is shown this drawing, which, as he examines it, is turned through a right-angle (Fig. 3) and he suddenly realizes that he has in fact bent his spine fully. If the patient is already suspected of suffering seriously and solely from hysteria of a severe degree, a psychiatrist's advice should be sought

before the test is performed; performing this test in the early days of the second world war, and lacking knowledge of the dramatic effect it sometimes produces, I was responsible on one occasion for precipitating an acute

FIG. 1

FIG. 2

FIG. 3

hysterical attack. If the patient is suspected of frank malingering the test should be performed in the presence of a witness, whose evidence can be used to prove the authenticity of the pictorial record of the event before a subsequent disciplinary tribunal.

Hip-flexion Test

In the performance of this test the patient lies supine. Hip and knee are then flexed on the affected side to the attainable limit (Fig. 4). Again the patient is invited to sit up, and to stretch forwards as far as possible. A rapid sketch is made of this position (Fig. 5). This drawing is now turned through a right-angle, so that the figure in the sketch appears to be lying supine again (Fig. 6), with the hip fully and freely flexed. Again the pictorial demonstration will be found to carry full and dramatic conviction.

When the appropriate one of these signs is positive, it proves hysteria or malingering if there have been no physical or radiological signs elicited other than limitation of movement. It may also be safely assumed that limitation of other movements than flexion at the same joint is functional also.

FIG. 4

FIG. 5

FIG. 6

It might be argued against the validity of the spinal-flexion test that a patient sometimes refuses to stoop, not because he is afraid of bending, but because he is afraid of getting up again. Such a patient will not rise from the recumbent to the sitting position.

GASTRIC BIOPSY WITH A MODIFIED AUSTRALIAN INSTRUMENT

BY

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Ordinary clinical methods supplemented by the use of x rays and gastroscopy fail to demonstrate an organic cause in many patients attending hospital with dyspepsia or anaemia. Many of these patients present difficulties in diagnosis and treatment, and the cause of their condition may be obscure. As part of a clinical study of dyspepsia and hypochromic anaemia we have used the method of gastric biopsy to investigate the state of the gastric mucosa. The Australian biopsy tube (Wood *et al.*, 1949) was chosen for this purpose and modified (Coghill and Wynn Williams, 1955). This paper describes modifications to the Australian instrument and outlines some experiences and difficulties in its use. Examples of results are given.

The Instrument and its Use

The original instrument has a small metal cylinder about 2.5 cm. long at the lower end with a lateral hole 2.4 mm. in diameter in its mid-part through which the knuckle of mucosa to be amputated is drawn by suction. The knife, screwed on to a wire running the length of the instrument,

FIG. 1.—Showing the modifications described in the text. "A" indicates the "stop" inserted to control the range of movement of the knife.

is circular and fits snugly inside the cylinder, of which the distal open end is closed by a screw. When negative pressure has been applied the knife is quickly drawn upwards past the lateral hole in the cylinder by pulling on the upper end of the wire. The knuckle of mucosa is thus cut off. The instrument has previously been modified. Palmer (1950) and Badenoch and Richards (1953) constructed what were virtually new models. Rubin *et al.* (1953) made needlessly complicated and detailed modifications. Our experience has shown that a few changes can make the instrument simpler to use and enhance its value (Fig. 1).

(1) A "stop" has been inserted into the upper end of the tube to govern the distance travelled by the knife and prevent it hitting the lower end of the flexible metal tube every time it is pulled up.

(2) The metal cap on the lower end of the tube has been made to unscrew. This prevents blunting of the knife when assembling the instrument and facilitates recovery of specimens.

(3) The lateral hole in the cap through which the knuckle of mucosa is drawn has been enlarged from the original 2.4 mm. diameter to 3.2 mm. This has enabled adequate specimens to be obtained with a lower negative pressure, and usually without interstitial haemorrhage.

(4) The concavity on the outside of the metal cap around the biopsy hole needs to be wide and so ground that the edges of the hole are flush with the bore. In this way the distance travelled by the knuckle of mucosa is reduced to a minimum.

A mercury manometer has been used to measure the negative pressure generated by the hand pump.

Biopsy specimens are obtained in the morning with the patient fasting overnight and usually attending as an out-patient. The routine is that for gastroscopy. Some patients have been examined in the sitting position to assist in obtaining specimens. Remarks by Wood *et al.* (1949) and Doig and Wood (1952) on the technique of passing the tube have proved helpful. Air inflation of the stomach by a bellows attached to the upper end of the instrument has sometimes enabled it to pass to a lower depth. It is our experience that gastric biopsy with this instrument causes less discomfort to the patient than gastroscopy. We have aimed in general to obtain at least two specimens of gastric mucosa from each patient from different parts of the stomach. Each fragment measures 2–3 mm. in diameter and extends down to and includes part of the muscularis mucosae. Specimens from the body of the stomach are of the greatest value, because this part contains the characteristic chief and parietal cells and, in the normal, relatively small numbers of stromal cells.

To date 1,189 biopsy attempts have been made on 437 patients and 776 specimens obtained. Little or no tissue was obtained on 413 attempts. The failure rate was 35 per 100 attempts. Specimens have been obtained from 32 patients on more than one occasion. In most of the failures no tissue was obtained, but in 13 the specimen came from the oesophagus and, in 6 patients with a gastro-enterostomy, from the jejunum. The instrument could not be moved past the cardia in 13 patients. In two of these there was a large hiatus hernia and in one the tube could not be advanced beyond the upper end of the oesophagus. With the smaller (original) biopsy hole a negative pressure of minus 500 mm. Hg was found necessary to obtain specimens of adequate depth. With the larger hole adequate specimens are obtained at a pressure of minus 200 mm. Hg.

Histological Technique

The biopsy fragment is fixed in 10% formol-saline and halved. The two halves are embedded in paraffin so that a section from each is cut perpendicular to the surface. In the majority of cases staining with haematoxylin and eosin is sufficient for diagnosis. When fuller information is required, however, other stains are used in additional sections—for example, mucicarmine, Motteram's modification of Bowie and Vineberg's stain for pepsinogen granules (Motteram, 1951), and Masson's trichrome stain.

Illustrative Cases

In this and the next section brief details of a few patients are given to illustrate some of our findings. Carcinoma was found unexpectedly once (Case 6).

Case 1.—A woman aged 31 with intermittent sore tongue and flatulent dyspepsia for six months. Her haemoglobin was 10.4 g./100 ml. (70%) (14.8 g.=100%), and rose on