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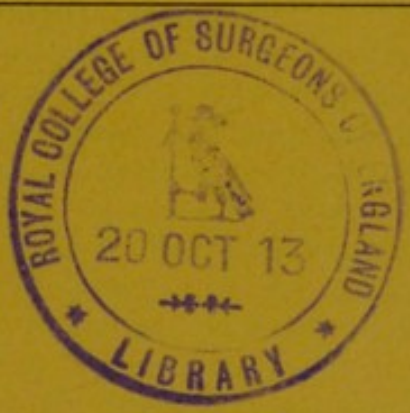

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PINCHING THE APPENDIX IN THE DIAGNOSIS OF CHRONIC APPENDICITIS.

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Nothing in medicine in the way of examination seems to have been better learned than McBurney's point and its significance in connection with the diagnosis of appendicitis. It is rare indeed among the students of my postgraduate teaching experience to ask the question "What is McBurney's point?" and not receive an intelligent and capable answer. There is no doubt that the sign is of much value in the diagnosis of appendicitis, but that it fails at times is the purpose of this article.

In the average case of pain in the lower right quandrant of the abdomen, some rise in temperature, increase in the pulse rate, a spasm of the abdominal muscles over the area, and perhaps pain and tightening when the thigh is straightened on the pelvis, the diagnosis is easy. In these cases the area of tenderness upon pressure is so much larger than the area which corresponds to the appendix itself that pressure midway between the umbilicus and superior spine of the ileum in a backward direction serves the purpose. But there are frank cases, usually subacute or those with a small abscess, wherein the tenderness on pressure is lower than would correspond sharply to McBurney's point. In the average person when the head of the cecum is in normal position, an inch or so above the brim of the pelvis, the base or length of the appendix is slightly outside or midway on the spine and umbilical line, and there are many individuals in whom the cecum is much lower, and in them pressure upon what is McBurney's point may not elicit the tenderness that would come from pressure lower down over what would then correspond to the site of the appendix. This is particularly true in cases of chronic appendicitis where all that may be useful in the way of physical examination is a tenderness localized to the appendix. Not considering those cases that give a history of

recurring acute attacks, there are many with dyspeptic symptoms due to a diseased appendix, this usually being a chronic process in which this sign may be important to diagnosis.

In this connection I desire to criticize the teaching of some of the surgeons that appendicular dyspepsia may exist, with no tenderness in the appendix region. It is always fair to the patient that no diagnosis of chronic appendicitis be made in those cases, even when the dyspepsia symptoms have subsided after the appendix had been removed, because it may be that the patient had fears of the appendix being the cause of the dyspepsia and the removal of it acted autosuggestively in a favorable way upon the dyspeptic symptoms. I believe that an appendix must be tender before it can be of significance in causing dyspeptic symptoms.

In the diagnosis of chronic appendicitis we must take into consideration the conditions of Lane's kink, Jackson's, and firmer membranes of the cecum, together with some less well-known conditions, such as insufficiency of the ileocecal valve, chronic excessive intestinal putrefaction causing a tender cecum, mainly at its head, and states connected with the ovary or extracecal structures.

Taking cases with a history of chronic disorder in which more or less distress exists in the right iliac fossa, diagnosis of the above-mentioned states can only be made as follows: Lane's kink by radiographs taken when the bismuth has reached the ileocecal region, these being made with the patient lying on the left or right side and preferably in Trendelenburg's position. The same is true of Jackson's and firmer membranes of the cecum wherein the mobility of the cecum can be studied by the *x*-rays and the presence of a membrane suspected. In addition to that a careful study of the bacteriology of stools with reference to their anaërobic content suggests the cause of membrane formation, for Jackson's membrane is a protective process in which the endothelium of the peritoneum is raised by a hyaline subendothelial substance, vascularity of the membrane taking place as a nutritive process. Further, the double-barrelled colon is usually accompanied by these membranes.

Insufficiency of the ileocecal valve can only be diagnosticated by the *x*-rays, with a fluid bismuth suspension being introduced per rectum. The tender cecum due to chronic excessive intestinal putrefaction is diagnosticated by a careful study of the stools and urine. This means the establishment of the patient on a known diet and the recording of the quality and quantity of foods for several days. Then careful and complete analyses of a twenty-four hour collection of urine and specimens of stool must be made, carrying the first through the sulphate partition, estimating the oxalic and uric acids, and so forth, and the second through the fermentation and putrefaction tests, as well as through the

products that such feces manufacture during these tests, with a careful study of the bacteriology.

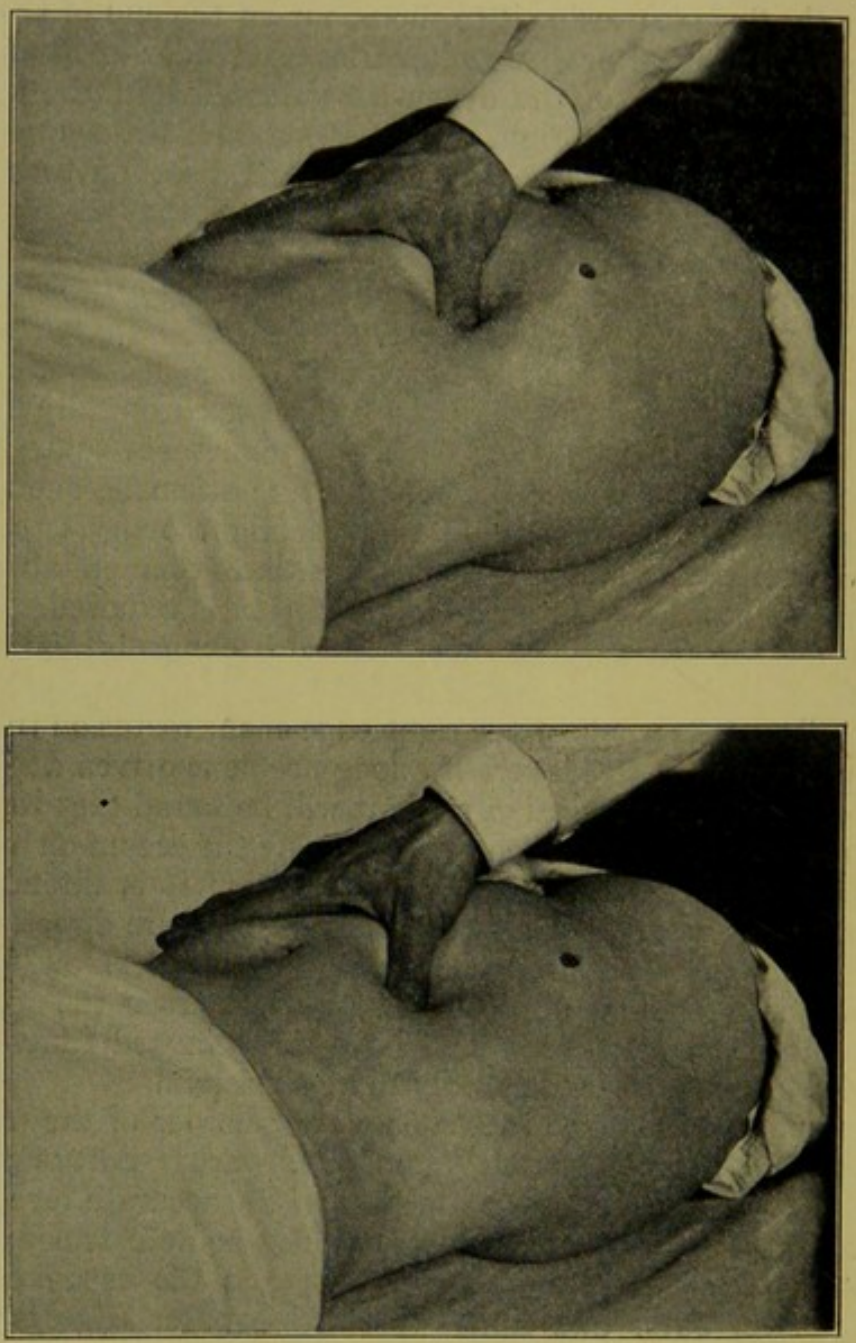
Conditions of the right ovary can usually be excluded by bimanual palpation, provided one is careful in palpating the ovary between the fingers, causing it to slip about on the end of the internal finger. Inflamed or diseased ovaries are tender upon pressure. After the tenderness of the ovary has been elicited the external hand makes pressure at right angles away from the ovary to the lateral wall of the pelvis and in a backward direction toward the appendix. In a simple case it will then be noted that no tenderness exists beyond the ovary.

As was stated before, the appendix may occupy any position from the line drawn from the umbilicus to the anterior superior spine downward to the brim of the pelvis. It is logical that pressure upon McBurney's point in an appendix that is chronically diseased and located below it will not elicit the tenderness that pressure below the point would, and if the subject be a female, one is liable to make the mistake and think that the right ovary is at fault. For the purpose of helping to differentiate this on abdominal examination alone a little extra consideration is required.

Covering the majority of cases met with clinically and in thin subjects a point midway between the anterior superior spine and the umbilicus falls inside of the right edge of the rectus on that side. In the general run of cadavera if a long needle is driven down from this point and then dissection made it will be found that its course corresponds to inside the cecum, considering the cecum on a curved vertical line. In some, in the prone position it is directly over the cecum. Now in these when one makes pressure directly backward, as is done in obtaining McBurney's tenderness, one is liable to press inside of the cecum or upon it and not over the appendix. In a number of appendices that I have had removed I have found the following plan to be decidedly more successful.

If the patient is not too stout the lower border of the cecum is percussed for from Poupart's ligament upward. Fortunately the cecum is usually distended with gas and an accurate level of the cecum when the patient is on the back can be determined. After this is noted, percussion transversely across the cecum is made to obtain its outer and inner edge. The outer edge is always possible of being noted. In percussing for this it is necessary when on the outer edge that the percussion stroke be directed straight backward toward the lateral edge of the body, and when on the inner, directly backward toward the junction of the psoas and iliacus muscles at that area—these lines being more oblique than the outer edge of the rectus. With an estimation of about where the appendix would be as judged from the location of the lower end and sides of the cecum, pressure on the abdomen should be made at that point. When the cecum cannot be mapped out by

percussion or the subject is well developed, and even in all, the second plan is to note the position of the right edge of the rectus muscle on the umbilical-spine line maintaining the site with a finger.



Pinching the Appendix. First shows pressure on a line midway between the umbilicus and the anterior superior spine of the ileum on the right side, the latter marked with a black dot. The second, the swinging of the thumb to the right of the patient, and pinching the appendix against the iliacus muscle. Patient viewed down the right side, head to the left of photograph.

Having the patient rise to a sitting position helps in palpating for the rectus edge. Standing at the right and facing the patient (for right-handed individuals) the thumb is placed vertical on the abdomen, the tip of the thumb pointing to the ensiform, when it

is slowly pressed backward into the abdomen, not inward, outward, up or down. When the thumb has been sunk about half-way down to the back of the abdominal cavity, it is swung to the right of the patient at a right angle to the downward pressure line. This pinches the appendix against the iliacus muscle and unyielding structures under and at the side of it, and usually elicits pain or tenderness. It is well, having done this in the mid-distance between the anterior superior spine and the umbilicus and not having obtained tenderness, to move the thumb down about one-half inch, performing it again, and so on downward until one has reached almost to the brim of the pelvis. The same procedure on the left side serves as a control. By means of this method of downward and then right lateral pressure it is possible to elicit tenderness in the average case of chronic appendicitis. When tenderness is obtained on transverse pressure to the left it may be a Lane's kink, and when below it may be a tender ovary instead of an appendix.