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PRELIMINARY REPORT ON THE DIAGNOSIS OF POST-PYLORIC (DUODENAL) ULCER BY MEANS OF SERIAL RADIOGRAPHY.

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NEW YORK.

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PRELIMINARY REPORT ON THE DIAGNOSIS OF POSTPYLORIC (DUODENAL) ULCER BY MEANS OF SERIAL RADIOGRAPHY.*

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New York.

The frequency with which postpyloric (duodenal) ulcers occur, unrecognized by clinicians and even by surgeons at the time of operation, is one of the marvels of the present medical age. The clinical and surgical aspects of this subject have been carefully considered by Wier, Moynihan, Codman, Mayo-Robson, the Mayo brothers, and others; but the radiological contributions have been rather inconclusive, and are limited to those by Bier, Kreuzfuchs, Strauss, and Ashbury (gastric and duodenal ulcers). Two methods have been employed by these observers. One depends on the contention that bismuth will adhere to the surface of an ulcer, or become incarcerated in its crater. But the failure to differentiate these "flecks" of bismuth from normal retention in the cap, and the fact that they occur very infrequently, are the weak points in this procedure. The second method is the study of symptom complices, which, as the name suggests, are only groups of symptoms, recognized by radiography or fluoroscopy.

The method to be described herein depends on recognizing the actual deformity of the gut, caused by the induration or cicatricial contraction surrounding an ulcer. Before one attempts to make a diagnosis of postpyloric (duodenal) ulcer by this method of examination he must thoroughly comprehend the normal aspects of the cap (pilleus ventriculi),

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and the various nonpathological conditions which influence its appearance, as observed by serial radiography.[1]

The differentiation of postpyloric (duodenal) ulcer from prepyloric (gastric) ulcer and carcinoma, and the differential points between ulcer and gallbladder infection have been previously described.[2] Subsequent observations in pursuance of this and other diagnostic points will be communicated within the next month. They will include the physiology of the pylorus as observed radiographically, particularly the absence of a periodical relaxation and contraction of the pylorus, independent of peristalsis, the reservoir function of the cap (pilleus ventriculi), and the periodical propulsive peristalsis of the descending and horizontal duodenum. A careful study of the pathology of chronic duodenal ulcer, as described by Moynihan or Codman, is essential to its radiographic diagnosis. Of the pathological findings which they report, the following are especially important radiographically:

1. Ninety-five per cent. of duodenal ulcers occur in the first or ascending portion of the duodenum (cap).

2. The crater of the ulcer is usually about one centimetre in diameter, and surrounded by an area of induration, similar to a furuncle.

3. There are usually cicatricial contractions, resulting in a formidable narrowing of the lumen of the gut.

4. Healed ulcers result in a restoration of the mucosa, but a destruction of the muscular coat, which is replaced by connective tissue. The serous coat may or may not show evidence of adhesions.

It is obvious, from a comparative study of the normal cap and the pathological findings of duodenal ulcer, that induration and cicatricial contraction could not exist, without distorting the symmetry of the lumen of the cap. By means of serial

[1] *Archives of the Röntgen Ray*, April, 1912.
[2] *Archives of the Röntgen Ray*, October, 1912.

radiography it has therefore been possible to reveal all of the usual pathological findings reported by Moynihan or Codman, the radiographic indications of which will be described and illustrated in a more comprehensive article on this subject, now in preparation. The same means frequently affords evidence of less extensive lesions, corresponding with the pathological findings of healed duodenal ulcer described by Codman.

The distortion of the cap (pilleus ventriculi) by chronic ulcer may be and must be differentiated from

1. Incomplete filling of the cap caused by
    a. Pylorospasm.
    b. Overactive peristalsis of the descending duodenum.
    c. Gastric ptosis with tortion on the gastrohepatic ligament.
2. Spasmodic contraction of the cap, due to irritation at some distant point, such as appendicitis, kinks of the ileum, colon ptosis, renal calculus, etc.
3. Indentation in the cap from pressure of the descending duodenum, vessels in the gastrohepatic ligament, or the common bile duct.

The differentiation of postpyloric ulcer from adhesions of gallbladder origin is rather difficult, but some distinguishing characteristics have already been made, and more will be offered in the next communication. This differentiation is of more scientific interest than practical value, because if the lesion is sufficiently extensive, surgery is indicated in either case.

The negative or positive diagnosis of postpyloric ulcer by serial radiography is equally as accurate as the radiographic diagnosis of renal or ureteral calculus.

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