THREE HELPFUL AIDS IN THE DIAGNOSIS OF GALL BLADDER DISEASE

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Gall bladder disease so frequently disguises itself by a long train of symptoms, stimulating disease of other organs, that any additional means of obtaining definite information is welcomed. Careful study of a rather large series of cases prompts me to emphasize the aid one derives from three sources.

1. Trans-duodenal drainage of the gall bladder.

2. Examination of the gall bladder region using recently developed X-ray technique.

3. Checking the pathological anatomy of such cases as go to operation, with reference to the relation between symptoms and the pathology in situ.

Trans-duodenal aspiration or drainage of the gall bladder is readily applied as an adjunct to the fractional method of examining the stomach contents. The usual small tube, with perforated metal olive at the end, is allowed to pass into the duodenum, after the fractions have been aspirated from the stomach, the time of passage being noted by the change in reaction, or the appearance of bile, and checked as to the position by fluoroscopic examination. After a couple of specimens have been obtained from the duodenum, solution of magnesium sulphate is allowed to flow by gravity, and aspirations follow at fifteen minute intervals.

Disregarding the question of duct contents, the appearance of 30 to 50 mils of a bile differing in color, consistency, and turbidity from the specimens which precede and follow it, is taken as indication that this bile comes from a different source from that with which it is contrasted. Repeated trials warrant the assumption that this bile comes from the gall bladder. If in addition to these physical differences, microscopic and cultural examinations

show pus and organism of different type than those predominating in the duodenal content, before and after this portion, the deduction follows that the contents are not only from the gall bladder, but that there are signs of cholecystitis.

It is true that it is not possible to drain every gall bladder even after repeated attempts, but when positive findings are secured, they are a distinct aid. I have recovered typhoid, para-typhoid A. & B., colon, streptococci, diplococci and pyocyoneus organisms. Many times I have recovered the same organism on repeated trials upon one individual.

THE ROENTGENOLOGIC AID

Attempts directed toward visualization of pathological gall bladders require infinite patience and innumerable films. The technique as developed by Dr. Robert A. Aarens of Michael Reese Hospital, with whom I have cooperated in all my roentgenologic examination, is as follows: The patient lies face downward on the plate and compression is used to assist in immobilizing the part. Immobility of the diaphram is of the utmost importance as the slightest movement will blot out the shadow of the gall bladder. It is, therefore, very essential that if the patient cannot or does not understand how to hold his breath that he be taught how to do so.

A duplitized film with a double screen and a radiator type Coolidge tube taking 25 M. A. is used. The penetration is varied for each patient. A series of from four to eight exposures is made with slight differences in the penetration of the ray. The first exposure is made with a penetration as soft as it is possible to use to get through the patient. Each successive exposure the penetration is increased by about ¼" so that when the series is completed, the plates will vary from an under exposure, to an over exposure with one or two perfect films in the series. The time for each exposure varies from four to eight seconds, depending on the patient's size, the same time being used on all exposures in the same patient.

This shows a shadow of the liver and kidney, and repeatedly a shadow of the gall bladder can be demonstrated. An accurate knowledge of the different types of gall bladder that are to be met with is essential. It is not necessary to show the presence of stones to outline a pathological gall bladder.

Pathological bile, thickening of the gall bladder wall, and adhesions combine to give a shadow so dense that it will be cast upon the film if the proper technique is employed. If the stones are present they may cast a shadow if of sufficient density. On the other hand, some cholesterin stones have given lighter areas than the surrounding medium; in either case the result is apt to be a mottling or tessilation of the area within the gall bladder shadow. A normal gall bladder does not differ in density from the surrounding structure sufficiently to throw any shadow.

In addition to these findings others are of value, such as local tenderness under the fluoroscope with accurate localization; immobility of the duodenum, where the bulbus is perfect in outline, and not of the physical type where the bulbus is normally immobile; at times a high help hepatic flixure in addition to other findings; in other cases, a gall bladder seat shown in the shadow of an otherwise normal duodenum; again a number of cases have been noted in which the duodenum has taken an unusually wide outward curve to the right, as though due to encroachment of the head of the pancreas. While simulating carcinoma of the head of the pancreas, which must always be considered, we have never seen a carcinoma of this type but rather have found a pathological gall bladder adherent to the head of the pancreas.

Lastly complete the diagnosis, not as to fact, but as to origin or contributing cause, when the patient goes to operation.

Here I want to emphasize the point that facts are frequently overlooked which, while of no import to the surgeon at the time, may yield a wealth of information to the internist who scrubs up, and examines carefully the pathology before any of the relations are disturbed, then follows every step of the operation.

The adhesions to the various organs may be of help, explaining certain symptoms referable to the colon or stomach, but particularly do I wish to emphasize the finding of the anomalies of the ducts and blood vessels, a fact well brought out some time ago by Dr. D. N. Eisendrath in a masterly article on the subject. When one finds a sessile gall bladder with practically no cystic duct, he can understand how the adhesions to the fundus caused an angulation which produced colic quite as severe as though brought about by stones. Again, the parallel cystic and hepatic ducts, or the anterior or posterior spiral placement of the cystic duct, as it curls about the hepatic before it unites to form the common, or the constriction of a duct by an abbarent blood vessel, explain symptoms which were so puzzling.

DISCUSSION OF DR. WRIGHT'S PAPER

Relative to the relation between gall bladder infection and the typhoid carrier, Dr. Thomas G. Hull called attention to the frequency with which carriers are being referred to the State Department of Public Health by physicians.

Dr. Hull stated that from a public health standpoint, Dr. Wright's paper is most interesting. Continually the laboratory is uncovering typhoid carriers and the cry is continually coming up to show how such persons can be cured.